



Missouri River Recovery Management Plan and Environmental Impact Statement Scoping Summary Report

May 7, 2014



Overview

The U.S. Army Corps of Engineers (Corps), Kansas City and Omaha Districts, conducted Tribal scoping and public scoping in August, September, and October of 2013 for the Missouri River Recovery Management Plan and Environmental Impact Statement (Management Plan and EIS). During the scoping period, the Corps hosted a series of Tribal scoping meetings and public scoping webinars to help identify the scope of issues to be addressed and to identify significant issues related to the Management Plan and EIS. In addition, the purpose of scoping was to

- Fulfill the National Environmental Policy Act (NEPA) requirements by determining the scope and depth of issues to be addressed in the EIS while engaging the public in the project
- Initiate Tribal trust responsibilities
- Describe the proposed action and possible alternatives
- Provide a summary of the project and steps to follow
- Give the public and Tribes an opportunity to comment and provide input on the purpose and need, scope and objectives, conceptual ecological models (CEMs), outcomes of the structured decision making (SDM) workshop, and alternatives developed from the SDM workshop
- Invite the participation of affected federal agencies, states, and Tribes

Members of the public could participate in the scoping webinars online or attending a host site location to watch the webinar in real time. At least one host site location was offered in eight Missouri River Basin states (see Appendix A).

Participants in both the Tribal scoping meetings and public scoping webinars could provide comments on the Management Plan and EIS in multiple ways, including the following:

- Written comments by mail, email or submitted online via the National Park Service Planning, Environment and Public Comment (PEPC) system
- Verbal comments documented by a court reporter

The public scoping comment period began on August 9, 2013, following a Notice of Intent (NOI) in the federal register announcing the dates and locations of the web-based scoping meetings. The comment period was extended once due to the government shutdown and closed on November 4, 2013.

All correspondence received, including verbal comments, letters, scoping forms and emails, were analyzed and coded in the PEPC system. A total of 70 correspondences were entered into the PEPC system and 365 comments were analyzed and coded. Of the 70 correspondences, 40 were verbal comments pulled from meeting transcripts; 16 were letters; eight were web forms completed by commenters in the PEPC system; five were emails; and one was a scoping form. Refer to the Public Comment Summary section on page 9 for more information.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Tribal Scoping Meetings

In August, the Corps held six Tribal scoping meetings that generated a total of 10 attendees. Letters of invitation were distributed to all 29 Tribes in the Missouri River Basin in mid-July. The letters included a description of the project and a complete schedule of the Tribal scoping meetings and public scoping webinars. **Table 1** provides additional information about the Tribal scoping meeting schedule and attendance.

Table 1: Tribal Scoping Meeting Schedule, Locations and Attendance

Location	Date	Facility	Meeting Time	# of Attendees
Fort Peck, MT	8/7/13	Fort Peck State Fish Hatchery 277 Montana Highway 117 Fort Peck, MT 59223	11:30 AM – 2:30 PM	0
Billings, MT	8/8/13	Holiday Inn Grand Montana, 5500 Midland Road, Billings, MT 59101	11:30 AM – 2:30 PM	4
Bismarck, ND	8/20/13	United Tribes Technical College Wellness Center Multipurpose Room 3315 University Drive Bismarck, ND	11:30 AM – 2:30 PM	3
Vermillion, SD	8/22/13	Vermillion Public Library Roger Kozad Room 18 Church Street Vermillion SD 57069	11:30 AM – 2:30 PM	0
Pawhuska, OK	8/27/13	100 West Main Street Pawhuska, OK 74056	9 AM – 12 PM	2
Lawrence, KS	8/29/13	Haskell Indian Nations University (Lawrence, KS)	11:30 AM – 2:30 PM	1

Meeting Agenda

The same agenda was followed for every Tribal scoping meeting. The agenda included the following:

- **Welcome and Prayer** (11:45 AM – 12:15 PM) – Designated Corps moderator welcomed attendees, led introductions, introduced the court reporter, ensured there were no objections, and introduced the Tribal representative leading the prayer.
- **Background Presentation** (12:15 PM – 12:45) – The scope of the project was described, followed by the process the project will follow, project schedule, and how to submit comments.
- **Discussion of Opportunities to Participate in the Management Plan** (12:45 PM – 1:45 PM)



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

- **Comment Period** (1:45 PM – 2:15 PM)
- **Wrap up** (2:15 PM – 2:30 PM)

Participants received copies of the agenda and other handouts, including a project fact sheet, comment form for submitting written comments, and a graphic illustration of the project process and timeline.

Comments

A court reporter was present to document the full meeting proceedings and comments received from participants. At the onset of the meetings, participants were notified that their comments would become part of the public record. (See the Public Scoping Comment Summary section on page 6 for more information about comments.)

The court reporters provided both hard copies and electronic copies of the meeting transcripts. The transcripts have been saved on the project SharePoint site in the Tribal Engagement folder. **Table 2** provides a record of the court reporting services used for this Tribal scoping effort.

Table 2. Court Reporting Services Used for Tribal Scoping

Location	Name	Phone	Email Address
Fort Peck & Billings, MT	Fran Mock	406.248.4064	fran848@bresnan.net
Bismarck, ND	Stephanie Smith	701.255.3513	steph.emineth@midconetwork.com
Vermillion, SD	Pat Beck	605.351.8200	stenopat@sio.midco.net
Lawrence, KS	Metropolitan Court Reporters: Contacts Linda or Janene Thibault	913.317.8850	scheduling@metropolitanreporters.com
Omaha, NE	Thomas & Thomas Court Reporters: Contact Jessica Fettingner	402.556.2037	schedule@nebraskacourtreporters.com



Public Scoping Webinars

The Corps conducted two live public scoping webinars on September 11 and 18 at the Omaha District Office using the Department of Defense, Defense Connect Online / Adobe Connect webinar software. Webinar instructions and meeting materials were made available to the public on the Management Plan webpage prior to the webinars. The webinars featured a background presentation, 30-minute question and answer session with project representatives, and a 30-minute open comment period.

Members of the project team were available to answer questions about specific subject matter related to the project. A court reporter was on site to document the full webinar proceedings, including the question and answer session and the comments received. Participants submitted comments for the public record verbally or in writing by using the webinar chat function. Participants also received information about alternate ways to submit comments to the Corps, including online via the National Park Service PEPC system and by mail and email.

One of the webinars was recorded, archived and made available on the Management Plan webpage for people who could not participate.

Host Sites

In addition to participating online, members of the public also had the option to attend a host site where the webinars were broadcast in real time. At least one host site location was offered in eight states in the basin. For a full list of host sites, refer to Appendix A.

Host sites managed the question and answer and comment sessions by submitting attendees' questions and comments through the webinar chat function. Host site participants also had the option to submit comments verbally. The court reporter on site at the Corps Omaha District office documented all questions and comments received from host site attendees.

Pre-Webinar Coordination

The Corps hosted a coordination call with the host sites two weeks in advance of the September 11 webinar to introduce the project and purpose of scoping and to explain their roles and responsibilities. Prior to the coordination call, the host sites received a checklist of instructions that outlined host site roles, equipment requirements, webinar logistics and management, and follow-up activities.

In addition, the Corps held a webinar dry-run with host sites one week before the September 11 webinar to work through technical issues and clarify questions related to their roles and responsibilities. This effort proved extremely beneficial to identifying and addressing technology issues prior to the webinars and helped the webinars run smoothly and efficiently.

Prior to the webinars, the host sites received a package of materials that included the following:

- Cover letter



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

- Instructions checklist for managing the meeting logistics, sign-in sheets, comment cards, and other meeting requirements
- Sign-in sheet
- 20 packets of meeting materials for webinar attendees that included hard copies of the agenda, meeting ground rules, question form for submitting questions during the webinars and comment form

Host sites were asked to collect any question and comment forms they received during the webinars, copy them, and return both scanned and original hard copies to the Missouri River Recovery Communication Lead. Host sites sent scanned and hard copies of the sign-in sheets to the Corps. All host site documentation was saved to the project SharePoint site.

Webinar Promotion

NOI

The Corps published an NOI in the Federal Register on August 9, 2013, announcing its intent to prepare the Management Plan and Programmatic Environmental Impact Statement. The NOI was an amended version of a previous NOI published in January 2013. The NOI included information about the dates and times of the public scoping webinars and the host site locations.

Other Promotional Methods

The Kansas City District Public Affairs Office distributed a press release on August 28 announcing the webinars and host site locations in conjunction with a social media announcement. The Missouri River Recovery Program communications team made additional social media and mass email announcements leading up to the webinars.



The Comment Coding Analysis Process

Comment analysis is a process used to compile and correlate similar public comments into a format that can be used by decision makers and the Project Delivery Team (PDT). Comment analysis assists the team in organizing, clarifying and addressing technical information pursuant to the National Environmental Policy Act (NEPA) regulations. During scoping, it also aids in identifying the topics and issues to be evaluated and considered in the Management Plan and EIS.

Definitions for the primary terms used in the comment coding analysis process include:

- **Correspondence:** The entire document or input received from a commenter. A correspondence can be in the form of a letter, email, written comment form or commentary (verbal comments) from a meeting transcript. A total of 70 pieces of correspondence were received during the public scoping period. This included 16 letters, five emails, one comment form, eight PEPC web forms, and 40 verbal comments (documented in 6 scoping meeting transcripts).
- **Comment:** A portion of the text within a correspondence that addresses a single subject. It can include expression of support or opposition for the project, information about the scope of analysis or data regarding the existing condition.
- **Code:** A grouping centered on a common subject. The codes were developed during the scoping process and were used to categorize comments into topics.
- **Concern:** Concerns are statements that summarize the issues identified in each code. For each code, concern statements were developed to better categorize the content of the comments received. Some codes required multiple concern statements because the comments within them represented different ideas. Other codes had only one concern statement because the comments within them presented similar ideas.
- **Quotes:** Representative quotes that have been taken directly from the text of the public's comments and further clarify the concern statements. Quotes were not edited for grammar, spelling or punctuation.

The comment analysis process included five main components:

- Developing a coding structure
- Using a comment database for comment management (in this case, the NPS PEPC system)
- Reading and coding the public comments
- Interpreting and analyzing the comments to identify issues and themes
- Preparing a comment summary

A coding structure was developed to sort comments into logical groups by topics and issues. The coding structure was derived from an analysis of past planning documents and the comments. Refer to Appendix B for the coding structure.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

The NPS PEPC database was used to manage the comments. The database stores the full text of all correspondence and allows each comment to be coded by topic or issue. Outputs from the database include the total number of correspondences and comments received, sorting and reporting of comments by a particular topic or issue, and demographic information from the sources of the comments.

Analysis of the public comments involved assigning codes to statements made by the public through correspondences. Verbal commentary received at the public and Tribal scoping meetings were taken from the official meeting transcripts and entered into PEPC as individual pieces of correspondence. All comments were read and analyzed, including those of technical nature; opinions, feelings and preferences of one element or potential alternative over another; and comments of personal or philosophical nature.

Although the analysis process attempts to capture the full range of public concerns, the comments received do not represent the sentiments of the entire public.

Although the coding structure was developed to minimize redundancy between codes, some explanation as to how comments were categorized between certain codes may be helpful. Comments were coded under one of the Affected Environment codes if the emphasis of the comment was providing information on the existing condition of a resource that may be affected. Comments were coded under one of the Impacts Analysis codes if the emphasis of the comment was describing how a resource may be impacted by the Management Plan. Within the Impacts Analysis codes, comments that provided more specific detail on impact analysis methodology were coded under *GA3000, Impact Analysis: General Methodology for Establishing Impacts/Effects*. The *ON1000, Other NEPA Issues: General Comments* code was used to categorize comments with an emphasis on the NEPA process or specific requirements of an EIS such as the identification of mitigation measures.



Public Comment Summary

Overview

The public scoping comment period extended from August 9 to November 4, 2013. During the scoping period, 70 correspondences were entered into the PEPC system, either directly by commenters or from hard copy letters, emails and written forms. Of the 70 correspondences, 40 were verbal comments pulled from meeting transcripts; 16 were letters; eight were web forms completed by commenters in the PEPC system; five were emails; and one was a scoping form. Copies of letters, emails and written forms were saved as attachments in the correspondence entries for further reference.

Verbal and written comments received during the public scoping webinars and Tribal scoping meetings were taken directly from the official transcripts and entered into PEPC. Comments about the CEMs and species objectives were also entered into PEPC.

From the 70 correspondences received, 365 comments were extracted and assigned codes from the coding structure developed for the public scoping process. The majority of comments were coded as Purpose and Need: Scope of the Analysis. Other codes commonly used were for comments related to the alternatives, consultation and coordination, and impacts analysis.

3.2 Summary Reports

The following sections include summary reports of the comments received, including:

- **Content Analysis Report** – This is the basic report produced from PEPC that provides information on the numbers and types of comments received and organized by code.
- **Concern Statement Report** – This report summarizes the substantive comments received during the scoping process. These comments are organized by code and further organized into concern statements. Below each concern statement are representative quotes that have been taken directly from the text of the public's comments and further grouped into concern statements.
- **Public Scoping Comment Summary Report** – This report summarizes the comments received during the scoping process and organizes them by code. The report is included in Appendix C.

Content Analysis Report

Comment Distribution by Code

Code	Description	Number of Comments	Percentage of Total Comments
AE1001	Affected Environment: Issues and Impact Topics Selected for Analyses	11	3%
AE11000	Affected Environment: Species of Special Concern	4	1.1%
AE12000	Affected Environment: Wildlife and Wildlife Habitat	1	0.3%
AE21000	Affected Environment: Socioeconomics	3	0.8%
AE22050	Affected Environment: Recreational Use	2	0.5%
AE24000	Affected Environment: Resource Topics (Tribal)	8	2.2%
AE25000	Affected Environment: Navigation	4	1.1%
AE5000	Affected Environment: Wetlands	1	0.3%
AE7000	Affected Environment: Air Quality	1	0.3%
AE9500	Affected Environment: Water Quality	1	0.3%
AL3500	Alternatives: Range of Alternatives	20	5.5%
AL4000	Alternatives: New Alternatives Or Elements	44	12.1%
AL5000	Alternatives: No Action	3	0.8%
AM1000	Adaptive Management	14	3.8%
AP1000	Authorized Purpose: General (not pertaining to one authorized purpose)	6	1.6%
CC1000	Consultation and Coordination: General Comments	18	4.9%
DUP1000	Duplicate Correspondence	2	0.5%
GA1000	Impact Analysis: Impact Analyses	22	6%
GA2000	Impact Analysis: Use Trends And Assumptions	2	0.5%
GA3000	Impact Analysis: General Methodology for Establishing Impacts	9	2.5%
MT1000	Miscellaneous Topics: General Comments	7	1.9%
ON1000	Other NEPA Issues: General Comments	5	1.4%
OPP1000	Opposition of the Missouri River Recovery Management Plan and EIS	1	0.3%
PN3000	Purpose And Need: Scope Of The Analysis	40	11%
PN3500	Purpose and Need: Scope of The Analysis (Tribal)	1	0.3%
PN5000	Purpose And Need: Regulatory Framework	6	1.6%
PN8000	Purpose And Need: Objectives In Taking Action	3	0.8%
RF1000	References: General Comments	6	1.6%
SUP1000	Support for the Missouri River Recovery Management Plan and EIS	1	0.3%
TC1000	Resources of Concern - Tribal	1	0.3%
TC1500	Past Projects – Tribal	2	0.5%



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Code	Description	Number of Comments	Percentage of Total Comments
TC3500	Historic preservation: guiding regulations, policies, laws – Tribal	1	0.3%
TC4500	Tribal involvement in project	4	1.1%
TC5500	Affected Environment: Wildlife and Wildlife Habitat – Tribal	1	0.3%
TC6000	Affected Environment: Species of Special Concern – Tribal	1	0.3%
Z1000	CEM and Objectives Comments	109	29.9%
TOTAL		365	100%

Comment Distribution by Correspondence Type

Type	Number of Correspondences
Verbal Comment (from meeting transcripts)	40
Letter	16
Web Form	8
E-mail	5
Scoping Form	1
Total	70

Correspondence Distribution by State

State	Number of Correspondences
Unknown	27
Missouri	14
Montana	8
Kansas	6
Iowa	4
Nebraska	4
South Dakota	3
n/a	1
North Dakota	1
Colorado	1
Virginia	1
Total	70

Correspondence Count by Organization Type



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization Type	Correspondences
Business	3
Civic Groups	1
Conservation/Preservation	5
Federal Government	7
Non-Governmental	4
State Government	5
Tribal Government	6
Unaffiliated Individual	38
University/Professional Society	1
Total	70

Concern Statement Report

Note: The comment text reflects the original comments received and was not edited for grammar, punctuation and spelling.

AE1001 - Affected Environment: Issues and Impact Topics Selected for Analyses

Concern ID: 49822

**CONCERN
STATEMENT:**

Commenters suggested the EIS analyze and evaluate a number of issues and topics, including human considerations; sediment and bed degradation issues; the project's potential to increase the spread of invasive species; air quality impacts; water quality issues; pallid migration from the Mississippi River to the Missouri River; impacts to navigation, municipal water, thermal generation, recreation and Mississippi River water commerce; social, economic and cultural interests; and impacts on wildlife and the environment from energy development and infrastructure. Commenters also suggested the study consider the effect of the Missouri River on flows on the Mississippi River and hypoxia and nutrient loading in the Gulf of Mexico.

APPROACH:

The Council on Environmental Quality's (CEQ's) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) require the inclusion of a description of the environment of the area(s) to be affected or created by the alternatives under consideration in an environmental impact statement (EIS) (40 CFR 1502.15). The U.S. Army Corps of Engineers (Corps) will include an affected environment chapter in the Missouri River Recovery Management Plan and EIS (MP-EIS) that will describe the existing condition of the resources determined to potentially be affected by the alternatives. The Corps has already incorporated human considerations



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

into its planning process. The extent to which the Mississippi River is included within the affected environment will depend on the nature of the alternatives and the potential extent of their effects upon the Mississippi River. All resource topics identified during the scoping process will be evaluated for inclusion in the affected environment once a range of alternatives has been identified.

Representative Quote(s):

Corr. ID: 4

Organization: MOARC Association

Comment ID: 337434

Organization Type: Non-Governmental

Representative Quote: While MOARC interests recognize the importance of responsible river management for the environment and species, the federal government must also recognize the importance of the Human Considerations for which River management is so vital. To focus on species / environmental needs to the exclusion of the human and economic interests would be inconsistent with past efforts of many groups and individuals and the work of the Missouri River Recovery Implementation Committee (MRRIC)...Human Considerations must be extensively taken into account as alternatives are identified in this process. The success of the MRRP will be determined by the degree to which human and species interests are balanced.

Corr. ID: 5

Organization: *Not Specified*

Comment ID: 337673

Organization Type: Unaffiliated Individual

Representative Quote: Will pallid migration from the Mississippi to the Missouri be considered in this analysis?

Corr. ID: 25

Organization: *Not Specified*

Comment ID: 337758

Organization Type: Unaffiliated Individual

Representative Quote: There are reported 200-plus horizontal laterals and over 10-plus pipelines under lake in North Dakota. I'm concerned about the potential adverse impact on this on the aquatic wildlife, environment. Further, the Missouri River is increasingly a primary source of drinking water for Fort Berthold and western North Dakota. I want this potential impact adequately identified in the scoping document and adequately addressed in the final EIS. What has to be done to make sure this happens?

Corr. ID: 40

Organization: Coalition to Protect the Missouri River

Comment ID: 337476

Organization Type: Non-Governmental

Representative Quote: In recent years, focus on and implementation of recovery program efforts has significantly heightened. Appropriations for the Missouri River Recovery Program (MRRP) have drastically increased from an average of \$7.194 million per year during Fiscal Years (FY) 1992-2003 to an average of \$66.891 million per year during FY 2006-2012. While scores of millions are appropriated for endangered species and mitigation efforts, work allowance to sustain the navigation portion of the Bank Stabilization and Navigation Project (BSNP) in the Kansas City District has averaged only \$4.832 million per year during Fiscal Years 2007-2013 with the low declining to a dismal \$3.610 million in FY 2012. It



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

is troubling that the Office of Management and Budget and Congress do not appreciate the benefits of BSNP infrastructure to waterborne commerce, thermal power, municipal water suppliers and flood control interests.

While CPR interests recognize the importance of responsible river management for the environment and species, it is imperative that the federal government also recognize the importance of the social, economic and cultural (SEC) interests to the future of this nation. To focus on species/environmental needs to the exclusion of economic interests would be playing a zero-sum game that would negate many of the relational advances seen in the past few years in venues such as the Missouri River Recovery Implementation Committee (MRRIC).

Corr. ID: 40

Organization: Coalition to Protect the Missouri River

Comment ID: 337508

Organization Type: Non-Governmental

Representative Quote: I specifically urge your attention of each of the human considerations included in Addendum 1: Human Considerations Compilation Sept 04 2012 Lower Basin. This compilation forms a foundation of understanding for the needs of various category interests previously discussed.

Corr. ID: 40

Organization: Coalition to Protect the Missouri River

Comment ID: 337485

Organization Type: Non-Governmental

Representative Quote: In todays difficult economy, reliability and certainty are a businesss best allies. Missouri River certainty has declined for economic stakeholders in recent years as recovery efforts have created additional unknowns and ultimately risk. Stakeholder exposure to risk has adversely impacted navigation tonnage through the more difficult letting of contracts as well as increased uncertainty for myriad other business-related interests. Benefits lost to past, present and future management actions should also be considered in the scope of this process.

Navigation benefits associated with water-compelled rates, created when navigation competes with truck and rail transportation, must be analyzed and included in the scope of the MRRMP-EIS. Railroad freight rates are directly related to the availability of waterborne commerce. Regional economic benefits resulting from even the possibility of Missouri River navigation are significant. Waterborne transportation benefits the environment and the economy because it is the greenest and most cost effective mode of freight transportation. Water-compelled rates reduce regional transportation costs; and thus, the costs of goods.

The Missouri Department of Transportations Missouri River Freight Corridor Assessment and Development Plan indicated that, Market potential exists to add significant volume to existing Missouri River freight movements over the next five years and beyond. Some of the growth opportunities are in traditional markets that have moved on the



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

river, while others are in emerging markets. A properly managed Missouri River will provide for species needs and reliable flows which not only sustain navigation but are required to sustain a plethora of additional authorized uses. Its imperative the impacts to municipal water, thermal generation, lower basin fish and recreation and Mississippi River water commerce be included within the scope of the MRRMP/EIS. Flows required to sustain navigation are critical to these uses in the following ways.

Corr. ID: 56

Organization: Sierra Club

Comment ID: 339242

Organization Type:
Conservation/Preservation

Representative Quote: Water quality is a basic requirement of quality habitat and should also be included in this EIS.

Corr. ID: 66

Organization: Missouri River Dredgers Group

Comment ID: 340258

Organization Type: Business

Representative Quote: 2. As demonstrated by the drought of 2012, the Missouri River and the free-flowing reach of the Mississippi River from St. Louis, Missouri to Cairo, Illinois are wholly integrated. The impact of the changes to releases and hydrology on the Missouri River affect conditions on the free-flowing reach of the Mississippi River and cannot be separated for administrative convenience. A failure to consider the impact of the Mississippi River affects determinations regarding pallid sturgeon recovery, nationwide economics, and economic impacts of individual stakeholder groups associated with Missouri River development.

Corr. ID: 67

Organization: U.S. Environmental Protection Agency Region 8

Comment ID: 340274

Organization Type: Federal Government

Representative Quote: We recommend the NEPA document evaluate and disclose air quality impacts and, if necessary, detail mitigation steps that will be taken to minimize associated adverse impacts.

Corr. ID: 67

Organization: U.S. Environmental Protection Agency Region 8

Comment ID: 340279

Organization Type: Federal Government

Representative Quote: The EPA recommends the NEPA document analyze the project's potential to increase the spread of invasive species such as zebra and quagga mussels ((*Dreissena polymorpha* and *D. bugensis*, respectively), the New Zealand mudsnail (*Potamopyrgus antipodarum*), and the rusty crayfish (*Orconectes rusticus*).

The project area includes potential Environmental Justice areas; therefore, we recommend the NEPA document address whether any minority or economically-disadvantaged communities will be disproportionately and adversely affected by the direct, indirect, or cumulative impacts of the project. Examples of this include effects to fishing or recreational economies, fish consumption, or use of the river associated with habitat changes or construction. The following references may be helpful:



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

- Environmental Justice Guidance Under the National Environmental Policy Act, Council on Environmental Quality, December 1997
- EO 12898, Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and Memorandum, February 11, 1994
- EPA Guidance for Consideration of Environmental Justice in Clean Air Section 309 Reviews, EPA Office of Federal Activities, EPA 315-B-99-001, July 1999; and
- Guidance for Incorporating Environmental Justice Concerns in EPAs NEPA Compliance Analyses, EPA Federal Activities, April 1998.

Concern ID: 49823
CONCERN STATEMENT: A commenter suggested non-monetary values should be considered equally with more traditional economic values.

APPROACH: Nonmonetary values will be included and accounted for within the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS). The Corps accounts for nonmonetary values in two separate accounts known as the “Environmental Quality” (EQ) account and the “Other Social Effects” (OSE) account. The EQ account defines and describes fish and wildlife resources, whereas the OSE account includes, among other resources, public safety, education, cultural resources, recreation, aesthetics, and populations.

Representative Quote(s): **Corr. ID:** 59 **Organization:** U.S. DOI National Park Service Midwest Region
Comment ID: 339252 **Organization Type:** Federal Government
Representative Quote: Values which cannot be defined solely in monetary terms should be equally considered with more traditional economic values. For example, the availability of natural-appearing landscapes contributes to quality of life and to tourism. MRRP actions for restoring natural conditions may affect scenic and visual resources important to local tourism-based economies.

AE11000 - Affected Environment: Species Of Special Concern

Concern ID: 49386
CONCERN STATEMENT: Commenters recommended the NEPA document include information on the status and trends of threatened, endangered, and sensitive species, the potential for additional listings and proposed listings.

APPROACH: The primary purpose of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to develop a management plan that includes a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon. As a part of the plan, conceptual ecological models, objectives, management actions, and alternatives are being developed for the targeted purpose of assessing and



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

addressing the status and trends of these three species.

Additionally and for other listed species, the Council on Environmental Quality's (CEQ's) National Environmental Policy Act (NEPA) regulations require the inclusion of a description of the environment of the area(s) to be affected or created by the alternatives under consideration in an environmental impact statement (40 CFR 1502.15). Additionally, the U.S. Fish and Wildlife Service is a cooperating agency on this MP-EIS and has provided written input regarding such species on two occasions since the publishing of the notice of intent. The U.S. Fish and Wildlife Service has also been awarded a contract to coordinate the project with the state fish and wildlife agencies pursuant the Fish and Wildlife Coordination Act.

The Corps will include an affected environment chapter in the MP-EIS that will describe the existing condition of the applicable threatened and endangered species within the study area. The affected environment chapter will also address fish and wildlife other than those listed as threatened or endangered.

Representative Quote(s): Corr. ID: 61

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339310

Organization Type: Federal Government

Representative Quote: On October 2, 2013, the Service proposed listing as endangered, the northern long-eared bat (*Myotis septentrionalis*), which occurs throughout much of the study area. Additional information on that species and its habitats can be found at <http://www.fws.gov/midwest/endangered/mammals/nlba/index.html>, and should be considered in the EIS.

Corr. ID: 64

Organization: U.S. EPA Region 7, Environmental Services Division

Comment ID: 339383

Organization Type: Federal Government

Representative Quote: The EIS should describe the status of riverine populations with regard to ESA other than those currently listed, assess the potential for future additional listings based on current and projected trends and describe how the Management Plan would be modified to address this change in condition.

Corr. ID: 67

Organization: U.S. Environmental Protection Agency Region 8

Comment ID: 340276

Organization Type: Federal Government

Representative Quote: In order to inform the goals of the project, we recommend the NEPA document include the following:

-A summary of the status and trends of project area threatened, endangered, and sensitive (TES) species and potential suitable habitat acreage;

Corr. ID: 5

Organization: *Not Specified*

Comment ID: 337673

Organization Type: Unaffiliated



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Individual

Representative Quote: Will pallid migration from the Mississippi to the Missouri be considered in this analysis?

AE21000 - Affected Environment: Socioeconomics

Concern ID: 49388

CONCERN STATEMENT: Commenters identified existing socioeconomic benefits provided by the Missouri River, including jobs, municipal water and energy production.

APPROACH: The Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will account for multiple social and economic resources with the potential to be positively or adversely affected by the project. In addition to the resource topics identified during scoping, the Missouri River Recovery Implementation Committee, federal and state agencies, and Tribes are providing information on important resources to be accounted for. The Corps will also describe and analyze consequences in context of the National Economic Development (NED) account, the Regional Economic Development (RED) account, the Environmental Quality (EQ) account, and the Other Social Effects (OSE) account.

Representative Quote(s):

Corr. ID: 4

Organization: MOARC Association

Comment ID: 337436 **Organization Type:** Non-Governmental

Representative Quote: Multiple millions of dollars have been invested in the Missouri River Basin. Cities have been built, electrification and municipal water supplied, food and fiber produced, and transportation and jobs created, all of which have produced extraordinary lifestyles which this MRRMP and EIS shouldn't diminish.

Corr. ID: 40

Organization: Coalition to Protect the Missouri River

Comment ID: 337480 **Organization Type:** Non-Governmental

Representative Quote: Multiple millions of dollars have been invested in Missouri River Basin social, economic and cultural endeavors in recent decades. Their return-on-investment has been staggering. Cities have been built, electrification and municipal water supplied, food and fiber produced and transportation and jobs created all of which have produced extraordinary lifestyles which this MRRMP and EIS shouldnt diminish.

Corr. ID: 70

Organization: Ameren Corporation

Comment ID: 341605 **Organization Type:** Business



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Representative Quote: Ameren Missouri, a holding Company of Ameren Corporation, was founded in 1902 and is the state's largest electric utility. Ameren Missouri provides electric service to approximately 1.2 million customers across central and eastern Missouri, including the greater St. Louis area. Ameren Missouri provides electric service to 63 counties and more than 500 towns. More than half (53%) Ameren Missouri's electric customers are located in the St. Louis and St. Louis County area. The company relies on water resources from the Missouri River for its Callaway Nuclear and Labadie coal fired energy centers. Both of these facilities have intakes on the Missouri River. In addition, the Company operates two additional energy centers below the Mississippi River confluence. These are the Meramac and Rush Island energy centers.

AE22050 - Affected Environment: Recreational Use

Concern ID: 49790

CONCERN STATEMENT: Commenters believed the Management Plan must consider the economic benefits of recreation on the lower Missouri River and include management actions to support this use. One commenter asked how recreation as an authorized purpose was executed in the lower river.

APPROACH: The Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will describe and analyze the relationship between recreation and the project on all portions of the river where recreation is affected by the project. Whereas the MP-EIS can consider actions resulting in ancillary benefits to recreation, the focus will be on specific measures that avoid jeopardy to the listed species.

Representative Quote(s):

Corr. ID: 19 **Organization:** Mo Valley Waterfowler Association

Comment ID: 338243 **Organization Type:** Unaffiliated Individual
Representative Quote: How is recreation as an authorized purpose executed in the lower Missouri River in the Iowa region?

What financial investments has the Corps dedicated to providing recreational access to the lower Missouri River in the Iowa region as it is a congressionally authorized purpose?

Corr. ID: 53 **Organization:** MO Department of Natural Resources

Comment ID: 338251 **Organization Type:** State Government



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Representative Quote: Recreation on the lower river must be given full appreciation, including those activities that are protected by the BSNP. A significant recreational benefit has previously been identified by the Missouri Department of Conservation (MDC) 1. In addition to the activities identified by MDC, there are numerous boating and kayaking opportunities and other recreation events that have regional economic impacts (e.g. Missouri River 340). It is important to note that recreation on the lower river can take many forms which are not solely within the banks of the river. For instance, in 2012, the Katy Trail State Park alone added \$18 million to the state's economy with 185 miles of the entire 240 miles being adjacent to the Missouri River. The Katy Trail State Park is largely protected by the BSNP and any modification to the BSNP could negatively impact the "longest Rails-to-Trail trail in the United States" that is enjoyed by over 400,000 visitors each year.

AE24000 - Affected Environment: Resource Topics (Tribal)

Concern ID: 49802

CONCERN STATEMENT: A commenter provided information about resources of concern that should be considered in the Management Plan and EIS, including the locations of burials and graves along the Missouri River.

APPROACH: The Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is a programmatic environmental impact statement that will analyze and consider all direct and indirect impacts at a scale commensurate the alternatives. The impact analysis will be broad and programmatic. As with all studies and actions, the Corps adheres to a number of regulations and executive orders in efforts to protect cultural resources, including the National Historic Preservation Act (NHPA) Section 106.

Representative Quote(s):

Corr. ID: 41

Organization: Fort Belknap Indian Community

Comment ID: 337759 **Organization Type:** Tribal Government

Representative Quote: On the first slide, you had the 1944 Flood Control Act. Well, when they made that Fort Peck Dam, I was actually the Mitigation Coordinator for Snake Butte Project, which was involved for removal of riprap from a sacred site of ours called Snake Butte, and they hauled that rock to Fort Peck to make the upstream base of the dam. And they did that before the Flood Control Act. So maybe they were just getting ready for building the dam then, huh? Yeah, they took 640,000 cubic yards of riprap from our -- one of our 20 buttes -- to put on the upstream base of Fort Peck Dam. I don't know if we had graves farther up the main stem where we're at, but we had campsites along the river. So lowering the river would expose some of those old campsites that might have artifacts still in them.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Concern ID: 49804
CONCERN STATEMENT: A commenter provided information about the impacts of past projects on Tribal lands to be considered in the development of the Management Plan and EIS.

APPROACH: The Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is a programmatic environmental impact statement that will analyze and consider all direct, indirect, and cumulative consequences related to the alternatives that will be formulated for jeopardy avoidance. The impact analysis will be broad and programmatic. As with all studies and actions, the Corps adheres to a number of regulations and executive orders in efforts to protect cultural resources, including the National Historic Preservation Act (NHPA) Section 106.

Representative Quote(s): **Corr. ID:** 41 **Organization:** Fort Belknap Indian Community
Comment ID: 337761 **Organization Type:** Tribal Government
Representative Quote: I've got a question. I was indirectly affected by this when I was talking about the Fort Peck Dam. When they took that 650,000 cubic yards of rock out to make the dam, we were paid a penny per cubic yard at that time. And I think the going rate back in 1937, '38 was \$1.63. And even at a penny per cubic yard, our tribe wasn't paid the full amount for the rock they took out. And I went back and looked in the archives of different places all over the United States that had archives on this stuff, and there's two separate claims that were made to try to get that, and none of them ever came to a final agreement. I think at the time, it was only about \$640,000 -- or \$640.00. But they were going after the interest from that date to the current date, whenever it gets looked at. So that's what they were going after on the claims. When I was doing this -- when I had this job it was in 1998 through '99, I was the Environmental Mitigation Officer for the Environmental Department. And my job was -- I had an A&A grant and that was to evaluate impacts associated with the Army Corps of Engineers rock quarry operations on Snake Butte, which is on our reservation. It was a two-year grant we had. And I found some minor impacts caused from the removal of the rock, such as head cutting, blocked drainages, diked. They put a 13-mile railroad spur from there to get to the railroad tracks north that went across. Just leftover debris, like cables, railroad ties, spikes for the rails laying all over the rocks and stuff. So, I thought I'd bring that up.

Concern ID: 49805
CONCERN STATEMENT: One commenter asked about the impact of this study on a Tribe's sovereign water rights.

APPROACH: The Missouri River Recovery Management Plan and Environmental



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Impact Statement (MP-EIS) is a programmatic environmental impact statement that will analyze and consider all direct, indirect, and cumulative consequences at a scale commensurate the alternatives. The impact analysis will be broad and programmatic. For consequences that require site-specific analysis, subsequent detailed assessment will be conducted prior to any disturbance.

Representative Quote(s):

Corr. ID: 44

Organization: Kickapoo Tribe

Comment ID: 337547 **Organization Type:** Tribal Government
Representative Quote: Sometimes tribal interests are competing as well. You have cultural preservation aspects, but our tribe also has economic development, in particularly water interests. There are plans by the tribe, they throw them out there before. They are sitting on the shelf right now, to pipe water out of Missouri. I don't know if you know, but the Kickapoo tribe has struggled with water. It's been an issue. And in drought years we've had to truck in water. One solution has been basically a pipeline from the Missouri River all the way to the reservation. Any idea what kind of impact this kind of stuff would have on those kinds of plans? From a legal standpoint would it make it illegal to do something like that? Basically would it prevent the tribe from exercising what they consider their sovereign rights to tap into the Missouri River? Because I know that it's an issue for the tribe.

We would have to look at what the treatise says now because the treaty that put the Kickapoo up against the Missouri River was from '32, and there were two larger -- it's a much smaller area now. But the tribe tries to promote the sovereignty in connection to the Missouri River. So there are issues there from a legal standpoint. They said that they still have the right to the Missouri River based on the treaty.

Concern ID:
CONCERN STATEMENT:

49806

One commenter asked how to stay involved in and assist with the cultural survey/historical preservation work for this study.

APPROACH:

The Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will likely rely on existing data such as maps and surveys and the Missouri River Basin Tribal Socioeconomic and Cultural Report. Subsequent detailed analysis may require surveys, however.

Representative Quote(s):

Corr. ID: 42

Organization: Crow Tribe

Comment ID: 337531 **Organization Type:** Tribal Government
Representative Quote: So you have to follow the Section 106 -- the NHPA. Is there somebody that you've already, a company that's already working on doing the cultural surveys, and how can we stay



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

involved with this. We have quite a crew that can actually get out and help and assist with surveys. I think they will end up becoming necessary because there's a lot of issues with grave sites that get exposed along the banks. And so based on that, I think it should be something that should be jumped on right away. I think waiting until between "Objectives" and "Alternatives" might be opening yourselves up to problems later. Maybe if you start now contacting all the tribes from Fort Peck all the way down. But we want to stay involved as the Crow Tribe because Crow Country, you know, the Missouri went right through Crow Country. Well, I think that's kind of -- like I was just telling her, that there's really -- I feel like I really can't comment on anything because I don't really have a lot of information. But, I did offer my one comment, which is something I believe that should happen, you know, starting the 106 earlier.

Concern ID:
CONCERN
STATEMENT:

49808
One commenter discussed issues pertaining to species monitoring and asked if species are nesting on Fort Berthold.

APPROACH:

The existing condition of terns and plovers within the project area will be described in the affected environment chapter of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS). Also, please see the approach to concern ID 49386 above.

Representative
Quote(s):

Corr. ID: 47 **Organization:** Three Affiliated Tribes

Comment ID: 337707 **Organization Type:** Tribal Government
Representative Quote: I do have a question about -- I heard you mention for terns and plovers, like from Garrison down to -- from the Garrison Dam to where? Okay. So anything north of the dam -- because I know on the reservation we have terns and plovers.

Well, it would be the -- Garrison is where Lake Sakakawea is, which is in the heart of our reservation. But the problem we have with all of that is the monitoring of it. I mean like I was the only biologist for the last four years there and I've seen terns and plovers, but the other part is enforcement. We have so many problems, and it's actually on state management land within the reservation where the plovers specifically nest, but we have people going in there camping -- camp fires. You know, we've seen and picked up beer bottles and just things like that and it's hard to keep people away from it. And I don't really think the area is aware of it and -- or other people are even aware of it, because like I heard you say from Garrison Dam down, so - But I want to make sure -- like there are terns and plovers nesting on Fort Berthold.

Concern ID:
CONCERN

49809
One commenter asked whether previous archaeological studies



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

STATEMENT: completed prior to dam construction were considered.

APPROACH: The baseline conditions of cultural resources including archeological resources will be described in the affected environment chapter of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS). Past studies will be incorporated as necessary to adequately describe the affected environment to facilitate consequences analysis.

Representative Quote(s): **Corr. ID:** 47 **Organization:** Three Affiliated Tribes
Comment ID: 337705 **Organization Type:** Tribal Government
Representative Quote: The -- I think there was archeological studies done prior to the construction of the dams. I know there was for Fort Berthold. Did they use that? Did they look at that in regards to that?

Concern ID: 49810
CONCERN STATEMENT: One commenter provided information about an ongoing feasibility study to pipe water from the Missouri River to western Kansas.

APPROACH: The National Environmental Policy Act (NEPA) requires the consideration of cumulative consequences. The identified proposal may be considered in the cumulative consequences assessment if the preferred alternative and the referenced proposal have reasonably foreseeable consequences upon the same resources.

Representative Quote(s): **Corr. ID:** 44 **Organization:** Kickapoo Tribe
Comment ID: 337551 **Organization Type:** Tribal Government
Representative Quote: The other issue that came up with regard to water, we saw that there was going to be a feasibility study piping water from the Missouri out to western Kansas to help reduce pressure on the Ogallala aquifer. I think that's the plan. It's just a feasibility study at this point as far as I know. I have to look at the paperwork. Our tribe is interested because if they want to do that we want to be on the pipeline. Because it's an idea we developed in like 2001, and actually did a feasibility study on piping out water. And that pipeline was good to go to Hays. And in the meantime was going to provide water to communities along the line. The big question of course is eventually if you tap the Missouri River to that degree where you're piping water all the way to western Kansas, probably disputes over water downstream as the water becomes less and less. Does this address that? Now that I think about it, that study is coming out of the Kansas water office, or maybe they had to ask for permission to do it because we contacted them about the feasibility study. We had a discussion about a week or so ago, and the water issue came up. And they were talking about piping water and our past plans came up. And we want to be involved somewhat



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

finally. We were talking about how big of a pipe would this have to be to serve all communities all the way out past Hays, Kansas. That's where the aquifer is. And how much water would you use by agriculture in the meantime. It would have to be massive. It's just a feasibility study so I'm assuming from my standpoint I'm thinking the feasibility is low. But I know they have to do something. That aquifer is going away. If they want to continue agriculturally that's the best alternative. Long-term effects, of course you start to look at what happened to Colorado. That's an issue involving water. So these are just things we kind of talked about.

Concern ID: 49818
CONCERN STATEMENT: One commenter asked if the Biological Opinion was amended due to the loss of a former wildlife refuge and any possible effects to wildlife.

APPROACH: The U.S. Fish and Wildlife Service Biological Opinion was released in 2000 and amended in 2003 to incorporate new information regarding the listed species as well as new information related to the alternatives required in the 2000 Biological Opinion.

Representative Quote(s): **Corr. ID:** 47 **Organization:** Three Affiliated Tribes
Comment ID: 337706 **Organization Type:** Tribal Government
Representative Quote: What I'm saying here, I was down in Pierre after that, you know, and there was this right under the bridge between Pierre and Fort Pierre there was this huge sandbar that was a wildlife refuge and it was gone. Did that affect any of the habitat and/or well-being of the plover and all of that? Did that do anything to that? Did that affect the plovers and all? Is that the reason why the opinion was amended?

AE25000 - Affected Environment: Navigation

Concern ID: 49793
CONCERN STATEMENT: Commenters recommended the scope of the Management Plan and EIS analyze navigation benefits and the impact of alterations to Missouri River navigation flow support on Mississippi River navigation. One commenter stated that the management plan should not ignore the relationship between navigation and flood control. One commenter suggested the impacts of sedimentation in the reservoirs on navigation flows should be considered.

APPROACH: The impacts of the alternatives to navigation and flood control will be evaluated in the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS). The focus will be on the consequences of alternatives to each of the resources. The



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

condition of each resource topic will be included within the affected environment chapter of the MP-EIS. The Corps has been working with Missouri River Recovery Implementation Committee to document how changes to the Missouri River affect navigation and flood control. The evaluation will include the consequences of one resource on another where appropriate.

Representative Quote(s):

Corr. ID: 4

Organization: MOARC Association

Comment ID: 337439 **Organization Type:** Non-Governmental
Representative Quote: Navigation benefits associated with water-compelled rates must be analyzed and included in the scope of the MRRMP-EIS. Railroad freight rates are directly related to the availability of waterborne commerce. Regional economic benefits resulting from even the possibility of Missouri River navigation are significant and have national impact.

Corr. ID: 40

Organization: Coalition to Protect the Missouri River

Comment ID: 337506 **Organization Type:** Non-Governmental
Representative Quote: Another issue which also needs to be accounted for in the MRRMP-EIS process is the increased reservoir sedimentation resulting from any recovery-related efforts. Missouri River reservoirs have experienced a substantive increase in sedimentation in the past fifteen years. As system storage zones are adjusted due to increased sedimentation, the impacts to downstream navigation increase. Navigation service levels diminish while season lengths shorten on a more regular basis so long as guide curve triggers remain at their current levels. These impacts result in more costly operations for the navigation industry and may also affect other users as well depending on the timing of and degree to which the navigation flows are reduced.

Corr. ID: 53

Organization: MO Department of Natural Resources

Comment ID: 338248 **Organization Type:** State Government
Representative Quote: The Missouri River is a vital part of the larger Inland Waterway System. However, Missouri River navigation has been challenged in the past with Master Manual revisions, lawsuits, and insufficient maintenance of structures. The State of Missouri is diligently working with industry and port authorities to reinvigorate this industry and to provide communities and companies with a competitive, environmentally practical, cost effective transportation advantage. Missouri River navigation flow support provides other benefits, including significant contributions to the flow of the Middle Mississippi River. The impact of alterations to Missouri River navigation flow support must include an analysis of effects to Mississippi River Navigation.

Corr. ID: 55

Organization: *Not Specified*

Comment ID: 339113 **Organization Type:** Unaffiliated Individual

Representative Quote: This slim management plan will fail because



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

it ignores how the navigation channel cancels out other authorized purposes. Effective flood control is not possible without the river's connection to its floodplain. Period. The Army Corps will no longer proclaim it has "tamed" the river, but is it willing to inform the public that it is critical to prepare for flooding instead of letting the public assume the Corps will keep them dry?

AE5000 - Affected Environment: Wetlands

Concern ID: 49389

CONCERN STATEMENT: One commenter recommended mapping all wetlands in the project area to demonstrate in the NEPA document they are being protected on federal lands and any potential impacts can be identified.

APPROACH: The existing condition of wetlands within the project area will be described with enough detail to support consequences analysis in the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS). This MP-EIS is a programmatic environmental impact statement; it is not a site-specific construction plan. As such, the ability to assess impacts on a site-specific scale will be deferred to subsequent analysis as appropriate. The Corps prepares site-specific project implementation reports (PIRs) prior to all projects. Site-specific PIRs are expected to be tiered to this analysis.

Representative Quote(s): **Corr. ID:** 67 **Organization:** U.S. Environmental Protection Agency Region 8
Comment ID: 340267 **Organization Type:** Federal Government
Representative Quote: The EPA recommends that the NEPA document demonstrates that all wetlands, including both jurisdictional and those found to be non-jurisdictional, are being protected on federal land as outlined in EO 11990. This would involve mapping all wetlands within the project site, including springs, and assuring all avoidance measures are incorporated into the project. If non-jurisdictional wetlands on federal lands are going to be impacted, offsetting mitigation efforts will need to be incorporated.

AE7000 - Affected Environment: Air Quality

Concern ID: 49390



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

CONCERN STATEMENT:

A commenter recommended including air quality conditions in the NEPA document by identifying various national standards, including the National Ambient Air Quality Standards, Prevention of Significant Deterioration Standards and air quality related values.

APPROACH:

The condition of air quality will be described if the proposed action has the potential to affect air quality. Air quality will be described at a level of detail commensurate the potential consequences. This Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is a programmatic environmental impact statement; it is not a site-specific construction plan. As such, the ability to assess impacts on a site-specific scale will be deferred to subsequent analysis as appropriate. The Corps prepares site-specific project implementation reports (PIRs) prior to all projects. Site-specific PIRs are expected to be tiered to this analysis.

Representative Quote(s):

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8

Comment ID: 340273 **Organization Type:** Federal Government
Representative Quote: Protection of air quality should be addressed in the NEPA document. The NEPA document should present existing air quality conditions in the project vicinity, addressing National Ambient Air Quality Standards, Prevention of Significant Deterioration standards, and air quality related values (AQRVs). The amount of stationary, mobile and non-road source emission activities, including hazardous air pollutants, should be quantified and disclosed. Particulate emissions from construction activities and ongoing operation of the roadways should also be addressed.

AE9500 - Affected Environment: Water Quality

Concern ID: 49391

CONCERN STATEMENT:

A commenter recommended that the NEPA document include discussion of Clean Water Act Section 303(d) listed waters, source water protection areas, and water treatment providers.

APPROACH:

The condition of water quality will be described in the affected environment chapter to the extent necessary to support consequences analysis. This Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is a programmatic environmental impact statement; it is not a site-specific construction plan. As such, the ability to assess impacts on a site-specific scale will be deferred to subsequent analysis as appropriate. The Corps prepares site-specific project implementation reports (PIRs) prior to all projects. Site-specific PIRs are expected to be tiered to this analysis.

Representative

Corr. ID: 67 **Organization:** U.S. Environmental Protection



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Quote(s):

Agency Region 8

Comment ID: 340272 **Organization Type:** Federal Government

Representative Quote: -Water quality impairments per State Clean Water Act Section 303(d) lists, draft or established total maximum daily loads (TMDLs), and potentially affected dischargers; including the following water quality-limited segments on the mainstem Missouri River:

o Morony Dam to the Marias River for total phosphorus (Montana)

o Marias Creek to Fort Peck Reservoir for copper (Montana)

o Fort Peck Reservoir for lead and mercury (Montana)

o Fort Peck Dam to the North Dakota border for temperature (Montana)

o Lake Sakakawea for mercury (North Dakota)

o Lake Sharpe for temperature (South Dakota)

-Source Water Protection areas and explanation of how the project will be consistent with Source Water Protection planning measures; and

-Potentially affected water treatment providers and possible changes to treatment processes.

AL3500 - Alternatives: Range of Alternatives

Concern ID: 49642

CONCERN

STATEMENT:

Multiple comments urged the Corps to consider a holistic approach to operations and management of the river and to develop a full range of alternatives including those outside the Corps' current jurisdiction. Comments did recognize that selection of an alternative may depend upon the Corps' current authorities but emphasized and quoted the requirements found in 40 CFR 1502.14(c) to prepare and evaluate alternatives that may not fall within the lead agency's current jurisdiction. Comments requested alternatives be developed and considered that seek to accomplish multiple mutual benefits amongst and consistent with the authorized purposes, consider changes to the status quo, consider the overall health of the ecosystem and use an ecosystem approach to formulation, consider robust and comprehensive changes, support a sustainable solution, don't give deference to either congressionally authorized purposes, and that don't rely too heavily on one measure or action such as hatcheries.

APPROACH:

The purpose of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to develop a



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

management plan that includes a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon within authorization requirements from section 601(a) of Water Resources Development Act (WRDA) of 1986, as modified by section 334(a) of WRDA 1999, and further modified by section 3176 of WRDA 2007.

Alternatives will not be formulated specifically to provide mutual benefits to or amongst the authorized purposes. The focus will be to develop alternatives for the purpose of avoiding jeopardy.

Pursuant to that purpose, the Corps intends to explore and evaluate alternatives in a manner compliant with the requirements identified in 40 CFR 1502.14 (Alternatives including the proposed action) Corps and Engineering Regulation 1105-2-100, the Planning Guidance Notebook. This will include an evaluation of reasonable alternatives; explanation of alternatives eliminated from detailed study, discussion of actions outside the agency's jurisdiction, if necessary; identification of the preferred alternative; and a discussion of appropriate mitigation measures, if necessary.

Representative Quote(s):

Corr. ID: 3 **Organization:** Mo. Valley Waterfowlers Association

Comment ID: 337671 **Organization Type:** Conservation/Preservation

Representative Quote: Bigger Flood mitigation projects need to Happen up River starting just south of Sioux City Iowa. There are thousands of acres of opportunity for ACE to go in and generate more storage capacity in areas long since cut off from the Mo.River do to the Big Bank Stabilization & Navigation.

Corr. ID: 47 **Organization:** Three Affiliated Tribes

Comment ID: 337708 **Organization Type:** Tribal Government

Representative Quote: Another question I have, we talk about, you know, the T and E season and everyone says, you know, the plover and the tern and the sturgeon, but what about the culturally significant species? Is there anything in the future to actually get those species from tribes and to try and work more with those? Because I -- I understand, you know, the T and E species are federally listed, but there are a lot of culturally significant species along the river that are important to the tribes and I would like just to see more involvement with those because a lot of those species -- they don't get any recognition, you know, and the habitat is being destroyed. Like we had a lot of cottonwoods back, you know, historically. We don't have any of those anymore. Those -- our bald eagles are there, our bald eagle habitat and all of that and there's a lot of edible plants that our tribes use that aren't there. (Tribal Comment)

Corr. ID: 50 **Organization:** Izaak Walton League

Comment ID: 337751 **Organization Type:** Non-Governmental



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Representative Quote: The League feels this MRRMP and EIS should strive to change the status quo on the Missouri River. We strongly urge the development of alternatives that will restore some of the habitat that has been lost or destroyed. This will ensure the long term survival and recovery of the listed species and improve the overall health of the river. To date, the majority of the MRRP efforts have occurred within the area of the BSNP due to the loss of over 522,000 acres of aquatic and terrestrial habitat between Sioux City and St. Louis. That loss is a result of the construction and ongoing maintenance of the BSNP. The IWLA asks the ACE to continue implementing recovery efforts in the area of the BSNP and strive to reconnect portions of the lower river to the flood plain.

Corr. ID: 50 **Organization:** Izaak Walton League

Comment ID: 337749 **Organization Type:** Non-Governmental

Representative Quote: The League believes a thorough analysis of all the management alternatives and adaptive management actions will ensure that future management decisions and actions are continuously improved. Updating and incorporating what is learned through regular monitoring of the river and the current recovery efforts will provide benefits to the listed species and lead to the recovery of portions of the habitat that has been lost and/or destroyed along the Missouri River.

Corr. ID: 50 **Organization:** Izaak Walton League

Comment ID: 341992 **Organization Type:** Non-Governmental

Representative Quote: - Recreational Access - Develop alternatives that will connect the river to the flood plain and also will connect people to the river. The public needs many more areas where they can access the river to hunt, fish, birdwatch and enjoy the river with family or friends. When you get people to the river they will support the activities that improve the health of the river.

Corr. ID: 55 **Organization:** *Not Specified*

Comment ID: 339110 **Organization Type:** Unaffiliated Individual

Representative Quote: Reliance on the fish hatchery part of the Recovery Program negates a range of other studies and construction.

Corr. ID: 56 **Organization:** Sierra Club

Comment ID: 339243 **Organization Type:**
Conservation/Preservation

Representative Quote: The Corps has achieved laudable habitat improvements in segments of the river. Working with the USFW in MO, the Big Muddy Wildlife Refuge has been one of the bright spots of river activity. However, MO still lags other states in habitat restoration. We hope that the MRRMP EIS will support increased habitat restoration and overall ecosystem health measures in Missouri and all states in the basin.

Corr. ID: 56 **Organization:** Sierra Club

Comment ID: 339240 **Organization Type:**
Conservation/Preservation

Representative Quote: The recovery of the pallid sturgeon, piping



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

plover, and least tern are critical to preserving our natural heritage.

However, recovery of those species can only be successful if broader ecosystem recovery needs of the river are also met. Narrow approaches, such as relying on fishery hatcheries, artificial sandbars etc. are important stopgap measures, but are inadequate to the task. Failure to take a broader approach to restoration of natural habitat and river functions only misleads the American public as to the meaning of "Recovery" in this plan. Is this recovery or just intensive care destined to keep these species indefinitely rare and at risk?

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339254 **Organization Type:** Federal Government

Representative Quote: 3. Utilize an ecosystem approach to analyze effects and for developing alternatives.

4. Develop an adequate range of alternatives, including adjustment to current practices that support one authorized purpose to the detriment of other authorized purposes.

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339259 **Organization Type:** Federal Government

Representative Quote: 10. Develop alternatives that address the timeframe for species recovery

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339300 **Organization Type:** Federal Government

Representative Quote: One of the most important considerations in plan formulation should be to not foreclose future opportunities to modify, improve, or redesign project features as conditions on the river continue to change. Sustainability will be critical and should be thought of in terms of sustainable processes and a range of functions rather than a single project design (i.e., 95% plans and specs). This should be viewed at a reach level to incorporate synergy among multiple projects and their effects on the hydraulics of the river and other project purposes. Use of expensive and intensive project features (i.e., pumping) should be considered only in especially rare circumstances, since they will likely be unaffordable over the long term. The need to maintain a viable connection between groundwater and surface water floodplain habitats will make it all the more important to address continued bed degradation along the river.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 341986 **Organization Type:** Federal Government

Representative Quote: Alternatives should support a more holistic approach to river operations and management that provides for both



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

fish and wildlife and public health and safety. Resilient river systems support robust local and regional communities and economies over the long term. In addition, such systems are far more adaptable as conditions (e.g., land use, water supply, sediment supply, federal investments) change. Consistent with the explicit intent of NEPA, we recommend the Corps consider a full range of alternatives in terms of flows, land acquisition and habitat manipulation to better explore the relationships and effects of proposed conservation measures along the river. This should include alternatives that meet desired project objectives, but may be currently beyond the Corps' authorities.

Corr. ID: 64

Organization: U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339369 **Organization Type:** Federal Government

Representative Quote: Specifically, the Corps must design a robust and comprehensive range of alternatives and a rigorous analysis of those alternatives, without regard to existing regulation or legislative authority. The National Environmental Policy Act directs the federal government to "improve and coordinate Federal plans, functions, programs, and resources (Section 101(b))" and to "utilize a systematic, interdisciplinary approach (Section 102(2))" in the execution of our responsibilities. Council on Environmental Quality regulations implementing NEPA require a "a full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts" (40 CFR 1502.1) and "rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)), including "reasonable alternatives not within the jurisdiction of the lead agency" (40 CFR 1502.14(c)). Although the final Missouri River Recovery Management Plan might capture an alternative the Corps has determined to be the most balanced management approach serving all authorized purposes within existing Corps authority and traditional program implementation, the Corps' supporting NEPA compliance document must include a more comprehensive and inclusive assessment of all reasonable management alternatives and their impacts on the natural and human environment potentially going beyond what is currently authorized or previously implemented.

Corr. ID: 64

Organization: U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339394 **Organization Type:** Federal Government

Representative Quote: Recovery and mitigation efforts currently undertaken by the Missouri River Recovery Program are largely not sustainable under present operation and management and require repeated investments of increasingly limited government resources in a pattern of construction, repair and redesign. The EIS should comprehensively assess what changes to current river operation and management are necessary to sustainably recover listed species and mitigate for habitat losses. The EIS should clearly delineate the economic costs of temporary recovery and restorative actions and



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

those operational and management changes required to provide more sustainable recovery and restoration.

We would like to strongly emphasize that the assessment of a robust range of alternatives and the impacts associated with their implementation is the foundation of the NEPA process and real or perceived legislative or operational limitations which affect the scope and reach of the Missouri River Recovery Management Plan should not be used to limit the robustness and rigor of the NEPA analysis itself. A comprehensive examination of what is required for the sustainable management of the Missouri River will provide for and support public discourse over the choices made by the Corps in the development of the Management Plan.

Corr. ID: 64 **Organization:** U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339380 **Organization Type:** Federal Government

Representative Quote: Analysis of a robust range of alternatives must incorporate the integration of the effects of all natural resource, navigation and flood risk management programs with those proposed as part of this Management Plan. Perhaps more importantly, the EIS should clearly identify impediments to achieving the objectives identified for the Management Plan, including changes to existing management authority or existing program limitations which would be necessary to the successful implementation of this Management Plan. For example, regardless of existing limitations in Corps authority regarding flow management or levee construction/reconstruction (e.g., Master Manual, PL 84-99), the draft EIS should describe whether existing authority or current management practices ultimately limit or preclude achievement of Management Plan objectives and what changes to existing authorities and programs would better support the Management Plan. Consistent with the spirit of NEPA, the public must know and understand the assumptions and any limitations which shape, complement and constrain the effectiveness of the Management Plan. This is the transparency envisioned within NEPA.

**Representative
Quote(s):**

Corr. ID: 64 **Organization:** U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339377 **Organization Type:** Federal Government

Representative Quote: The EIS should describe all existing Federal and State programs affecting river resources and the current effect of these programs on ESA-protected river species, native species and river habitat. Further, the EIS should describe how these existing programs might shape the effectiveness of the Management Plan itself. How well this Management Plan achieves the objectives identified and incorporated within 'project purpose' is critically dependent upon the regulatory and resource management milieu created by these existing other programs and authorities.

Corr. ID: 65 **Organization:** Nebraska Game and Parks
Commission



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment ID: 341988 **Organization Type:** State Government

Representative Quote: Alternatives should support a holistic approach to river operations and management that provides for both fish and wildlife and public health and safety. Consistent with the explicit intent of NEPA, we recommend the Corps consider a full range of alternatives in terms of flows, land acquisition and habitat manipulation to better explore the relationships and effects of proposed conservation measures along the river. This should include alternatives that meet desired project objectives, but may currently be beyond the Corps' authorities.

Corr. ID: 65 **Organization:** Nebraska Game and Parks Commission

Comment ID: 340200 **Organization Type:** State Government

Representative Quote: We suggest the most successful strategy to provide for the three listed species and meet the mitigation objectives is to work towards a flow corridor that would include the desired biological and habitat features that are consistent with the other project purposes. A functional flow corridor would also address the principles and guidelines most effectively.

Corr. ID: 66 **Organization:** Missouri River Dredgers Group

Comment ID: 341995 **Organization Type:** Business

Representative Quote: 4. Alternatives that sustain and support the original engineering design

considerations and maintenance requirements of the Bank Stabilization and Navigation Project should be given priority.

5. Alternatives and analysis should sustain the congressional requirement that the BSNP fully support its design for navigation. Specifically, the channel must maintain, at a minimum, a nine-foot deep, 300-foot wide configuration to support navigation. Draft should be maintained to assure a nine-foot performance depth. Alternative flow arrangements which compromise these congressionally-mandated criteria during the navigation period of April through November should not be considered.

6. Flow regimens that undermine the eight authorized purposes should only be considered where no other possible alternative exists with regard to protection of the pallid sturgeon.

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8

Comment ID: 341989 **Organization Type:** Federal Government

Representative Quote: We recommend the range of alternatives include a suite of options, even those outside of the agency's discretion, to meet the underlying project purpose. The NEPA document should summarize criteria used to screen reasonable alternatives and the reasoning used to eliminate alternatives in order to provide a rationale for the alternatives considered.

Corr. ID: 70 **Organization:** Ameren Corporation



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment ID: 341608 **Organization Type:** Business

Representative Quote: 4. With the lack of absolute scientific understanding necessary to recover the species, the EIS effort should focus on what can be accomplished through a balancing of interests as reflected by existing congressional intent ("authorized purposes" & ESA). This will serve both enhanced knowledge/recovery of the species while protecting social economic interest that have relied on infrastructure established under the contemporary regulated hydrograph.

Corr. ID: 70 **Organization:** Ameren Corporation

Comment ID: 342003 **Organization Type:** Business

Representative Quote: 2. The scope of the EIS process shall not give deference to either congressionally authorized program, i.e., "authorized purposes" & ESA.

Corr. ID: 73 **Organization:** The Nature Conservancy

Comment ID: 343622 **Organization Type:**

Conservation/Preservation

Representative Quote: The Conservancy recognizes the need to center planning on threatened and endangered species recovery actions related to the BiOp or identified through the Effects Analysis process underway. However, the Conservancy is concerned with the use of "minimum effort to comply" language currently being used by the Army Corps of Engineers on these and other yet to be determined actions. It is our understanding a NEPA process must consider and formulate a "full range of alternatives" in the planning process and the use of minimum effort at these very early stages would appear to be in conflict with a robust process. It is very important the Effects Analysis and future planning steps be given adequate time, resources and freedom needed to determine appropriate future actions and how best to adaptively manage them.

AL4000 - Alternatives: New Alternatives Or Elements

Concern ID: 49393

**CONCERN
STATEMENT:**

Commenters recommended or requested the Corps' evaluate flow management alternatives. Recommendations included a more natural flow regime, a flow corridor, flow diversity, modified or altered flows, full range of flows, and historic flows be developed and considered.

APPROACH:

The purpose of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to develop a management plan that includes a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon within authorization requirements from section 601(a) of Water Resources Development Act (WRDA) of 1986, as modified by section 334(a) of WRDA 1999, and further



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

modified by section 3176 of WRDA 2007.

Pursuant to that purpose, the Corps intends to explore and evaluate alternatives in a manner compliant with the requirements identified in 40 CFR 1502.14 (Alternatives including the proposed action) and Engineering Regulation 1105-2-100, the Planning Guidance Notebook. This will include an evaluation of reasonable alternatives; explanation for alternatives eliminated from detailed study; discussion of actions outside the agency’s jurisdiction, if necessary; identification of the preferred alternative; and a discussion of appropriate mitigation measures, if necessary.

Public comments received on the scope of the MP-EIS including the range of alternatives will be considered in development of the MP-EIS.

Representative Quote(s):

Corr. ID: 10 **Organization:** *Not Specified*

Comment ID: 337680 **Organization Type:** Unaffiliated Individual
Representative Quote: The 2003 biological says that a more natural flow regime is critical to endangered species survival, but was not recommended in the reasonable and prudent alternatives. Will there be more natural flow regimes required as part of the management plan?

Corr. ID: 18 **Organization:** *Not Specified*

Comment ID: 337689 **Organization Type:** Unaffiliated Individual
Representative Quote: Habitat restoration projects and simulating a more natural flow regime are critical to endangered species recovery.

Corr. ID: 21 **Organization:** *Not Specified*

Comment ID: 337943 **Organization Type:** Unaffiliated Individual
Representative Quote: A more natural flow regime is integral to the river species recovery

Corr. ID: 50 **Organization:** Izaak Walton League

Comment ID: 337754 **Organization Type:** Non-Governmental
Representative Quote: - Water Supply - Can alternatives be developed that more closely mimic the historic flows of the Missouri River, flows beneficial to native fish and wildlife species including the listed species?

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339261 **Organization Type:** Federal Government
Representative Quote: 15. Identify and analyze trade-offs for maintaining 8-month navigation flows

16. Identify and conduct economic analysis of alternatives to navigation flows

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment ID: 339256 **Organization Type:** Federal Government
Representative Quote: 7. Identify flows that will create and maintain emergent sandbar habitat (ESH).

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339257 **Organization Type:** Federal Government
Representative Quote: 8. Determine ecological effects of 'power peaking' dam operations and determine an ecologically valid minimum-flow threshold in lieu of 'power peaking'

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339258 **Organization Type:** Federal Government
Representative Quote: 9. Determine ecological benefits and analyze economic effects of maintaining a minimum-flow threshold in lieu of 'power peaking'

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339298 **Organization Type:** Federal Government
Representative Quote: We believe the most successful strategy to provide for the three listed species and the mitigation objectives is to work towards a flow corridor that includes the desired biological a11d habitat features while also consistent with the other project purposes to the maximum extent practicable. A functional flow corridor would also address the principles and guidelines most effectively.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 341986 **Organization Type:** Federal Government
Representative Quote: Consistent with the explicit intent of NEPA, we recommend the Corps consider a full range of alternatives in terms of flows, land acquisition and habitat manipulation to better explore the relationships and effects of proposed conservation measures along the river.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339299 **Organization Type:** Federal Government
Representative Quote: Many of the critical river processes needed to support these species can only occur with a larger land base connected to the river (i.e. much like the Mississippi and Atchafalaya River systems). Such lands should allow for both terrestrial and aquatic habitat creation/restoration and processes while providing a secure flood conveyance corridor that would minimize flood damages on adjacent lands, infrastructure, and public safety, much like the original Pick-Sloan plan.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Corr. ID: 61

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339300 **Organization Type:** Federal Government
Representative Quote: Floodplain connectivity with associated flow events can provide for critical lower flows and warmer water enhancing productivity of the Missouri River system.

Corr. ID: 65

Organization: Nebraska Game and Parks Commission

Comment ID: 340200 **Organization Type:** State Government
Representative Quote: We suggest the most successful strategy to provide for the three listed species and meet the mitigation objectives is to work towards a flow corridor that would include the desired biological and habitat features that are consistent with the other project purposes. A functional flow corridor would also address the principles and guidelines most effectively.

Corr. ID: 65

Organization: Nebraska Game and Parks Commission

Comment ID: 340210 **Organization Type:** State Government
Representative Quote: Flow modifications - Flows are a critical part of aquatic habitat creation, maintenance, and function. The development of a flow corridor would allow for planned flows that do not impact infrastructure while providing for ecological needs.

At the same time, a flow corridor would enhance flood risk reduction during natural high flow events. We recommend continued progress on the previous items to provide a better foundation on which to strategically modify river flows.

It is clear that areas with more flow diversity provide more diverse habitats and functions than areas with consistent flow. Given the increasingly compelling need for slow water for successful native fish recruitment, we strongly recommend developing scenarios for experimental low flows during mid-late summer. We believe carefully designed, implemented and monitored flow experiments with specific decision triggers could help us answer several critical questions regarding pallid sturgeon age 0-1 life stage, as well as other native fishes, including pallid sturgeon prey species. The Corps should consider the full range of flows from magnitude, seasonal, and duration perspectives along with the impacts and benefits of associated land purchases and habitat modifications.

Corr. ID: 65

Organization: Nebraska Game and Parks Commission

Comment ID: 341988 **Organization Type:** State Government
Representative Quote: Consistent with the explicit intent of NEPA, we recommend the Corps consider a full range of alternatives in terms of flows, land acquisition and habitat manipulation to better explore the relationships and effects of proposed conservation



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

measures along the river.

Corr. ID: 72

Organization: Montana Fish, Wildlife and Parks

Comment ID: 343588 **Organization Type:** State Government

Representative Quote: 1. Relative to the current status of the pallid sturgeon Biological Opinion (based on the latest amendment letter dated February 6, 2013), the Management Plan must describe the adaptive actions that will be taken to provide flows for pallid sturgeon from Fort Peck Dam.

Corr. ID: 73

Organization: The Nature Conservancy

Comment ID: 343623 **Organization Type:**

Conservation/Preservation

Representative Quote: More specific to the scope of this effort, the Conservancy believes the heart of the plan must find ways to balance the restoration of the key ecological factors or structural components of the river being; channel morphology, sediment regime, flow regime and longitudinal connectivity with the contemporary human uses of the river. A very good example of this balance and restoration of ecological structure in a modeling exercise is through the Flow Corridor efforts. Implemented project examples are exemplified through the levee setbacks occurring at L550 and L575. Efforts that solve problems to the human systems along the river by restoring the ecological structure of the river must be at the heart of this important planning effort.

Concern ID:

**CONCERN
STATEMENT:**

49394

Multiple comments recommended that alternatives should include measures aimed at increasing sediment transport downstream of mainstem dams or using sediment trapped in reservoirs for habitat restoration projects. One commenter requested a pilot project be developed.

APPROACH:

The purpose of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to develop a management plan that includes a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon within authorization requirements from section 601(a) of Water Resources Development Act (WRDA) of 1986, as modified by section 334(a) of WRDA 1999, and further modified by section 3176 of WRDA 2007.

Pursuant to that purpose, the Corps intends to explore and evaluate alternatives in a manner compliant with the requirements identified in 40 CFR 1502.14 (Alternatives including the proposed action) and Engineering Regulation 1105-2-100, the Planning Guidance Notebook. This will include an evaluation of reasonable alternatives; explanation for alternatives eliminated from detailed study; discussion of actions outside the agency's jurisdiction, if necessary;



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

identification of the preferred alternative; and a discussion of appropriate mitigation measures; if necessary.

Public comments received on the scope of the MP-EIS including the range of alternatives will be considered in development of the MP-EIS.

Representative Quote(s):

Corr. ID: 19 **Organization:** Mo Valley Waterfowler Association
Comment ID: 337690 **Organization Type:** Unaffiliated Individual
Representative Quote: It should be considered that this process looks at the Gulf Coast Restore Act as a possible revenue source to address sediment deprivation in the Missouri River.

Corr. ID: 50 **Organization:** Izaak Walton League
Comment ID: 341991 **Organization Type:** Non-Governmental
Representative Quote: - Sedimentation - Develop alternatives that utilize sediment built up in the reservoirs for restoration projects to benefit the listed species. This will help the recovery program and also prolong the life and capacity of the reservoir system.

Corr. ID: 51 **Organization:** Mo Valley Waterfowlers Association

Comment ID: 338236 **Organization Type:** Conservation/Preservation

Representative Quote: 1. What are the significant issues and resources that should be considered within the context of the Management Plan and EIS?

Answer: The need for sediment transportation, solutions to sediment depletion.

2. Why are these issues and resources important?

Answer: Natural sediment transportation is a sustainable means of addressing long term habitat issues of the lower Mo. River & Gulf.

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 341994 **Organization Type:** Federal Government
Representative Quote: 12. Develop alternatives for sediment management (i.e. routing through all reservoirs)

Corr. ID: 66 **Organization:** Missouri River Dredgers Group

Comment ID: 340259 **Organization Type:** Business
Representative Quote: 3. Alternatives that increase sediment releases of material held behind the five main stern dams should be given priority.

Concern ID:
CONCERN

49396
Commenters stated that alternatives should not be considered if they



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

STATEMENT: would be inconsistent with the eight authorized purposes. One commenter specifically stated that the navigation channel should not be modified by any alternatives.

APPROACH: The purpose of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to develop a management plan that includes a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon within authorization requirements from section 601(a) of Water Resources Development Act (WRDA) of 1986, as modified by section 334(a) of WRDA 1999, and further modified by section 3176 of WRDA 2007.

Pursuant to that purpose, the Corps intends to explore and evaluate alternatives in a manner compliant with the requirements identified in 40 CFR 1502.14 (Alternatives including the proposed action) and Engineering Regulation 1105-2-100, the Planning Guidance Notebook. This will include an evaluation of reasonable alternatives; explanation for alternatives eliminated from detailed study; discussion of actions outside the agency's jurisdiction, if necessary; identification of the preferred alternative; and a discussion of appropriate mitigation measures, if necessary.

Public comments received on the scope of the MP-EIS including the range of alternatives will be considered in development of the MP-EIS.

Representative Quote(s):

Corr. ID: 66 **Organization:** Missouri River Dredgers Group

Comment ID: 340223 **Organization Type:** Business

Representative Quote: 1. The Management Plan should consider only alternatives consistent with the eight authorized purposes approved by Congress and appropriate cases evaluating those purposes. As such, flood control and navigation should be given priority and the other six purposes fully incorporated into any alternatives considered inside the context of the evaluation. It is imperative that the Corps not be distracted by the numerous issues that lay outside the scope of the congressionally-authorized purposes. Establishing appropriate "sideboards" on the alternative analysis is paramount to the success of this evaluation.

Corr. ID: 70 **Organization:** Ameren Corporation

Comment ID: 341607 **Organization Type:** Business

Representative Quote: 3. In light of joint congressional authorization, the EIS need not consider management alternatives that do not recognize continuation of the "authorized purposes".

5. Only after the implementation of alternatives identified within the scope of the EIS process noted above, and with sufficient time to collect and analyze appropriate scientific data, shall the agencies



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Concern ID:
CONCERN STATEMENT:

evaluate/consider broader alternatives under a separate EIS process.
49402

Commenters made other specific suggestions on alternative elements that should be considered, including:

- Land acquisition and flowage easements
- Habitat creation
- Create more backwaters and fewer chutes
- Protection of the genetic diversity of upper basin pallid sturgeon
- Connect the river to the floodplain
- Expansion of shallow water habitat projects and mitigation lands in Iowa
- Reconnection of oxbows
- Completing mitigation lands in the state of Missouri

APPROACH:

The purpose of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to develop a management plan that includes a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon within authorization requirements from section 601(a) of Water Resources Development Act (WRDA) of 1986, as modified by section 334(a) of WRDA 1999, and further modified by section 3176 of WRDA 2007.

Pursuant to that purpose, the Corps intends to explore and evaluate alternatives in a manner compliant with the requirements identified in 40 CFR 1502.14 (Alternatives including the proposed action) and Engineering Regulation 1105-2-100, the Planning Guidance Notebook. This will include an evaluation of reasonable alternatives; explanation for alternatives eliminated from detailed study; discussion of actions outside the agency’s jurisdiction, if necessary; identification of the preferred alternative; and a discussion of appropriate mitigation measures, if necessary.

Public comments received on the scope of the MP-EIS including the range of alternatives will be considered in development of the MP-EIS.

Representative Quote(s):

Corr. ID: 1 **Organization:** *Not Specified*

Comment ID: 337666 **Organization Type:** Unaffiliated Individual
Representative Quote: Create more backwaters and fewer chutes.

Corr. ID: 3 **Organization:** Mo. Valley Waterfowlers Association

Comment ID: 337669 **Organization Type:** Conservation/Preservation

Representative Quote: However we do share an opinion to this matter that would Greatly increase the ACE ability to Mitigate Future



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Flood Waters in the lower reach of the Mo. River below Gavins Point south to the Mo. & Iowa State line. We strongly feel that efforts and revenues must be put in place to Support a Much larger Flood Mitigation program/projects with in the Iowa reach of the Mo. River.

Corr. ID: 3 **Organization:** Mo. Valley Waterfowlers Association

Comment ID: 337670 **Organization Type:** Conservation/Preservation

Representative Quote: Lands should be sought to be bought or secured by perpetual Flood Mitigation Easement agreements. This action would call for ACE being able to generate more flood water storage capacity with in our reach of the Mo. River why at the same time as a by product provide the beneficial habitat needs of the 3 endangered species and all wildlife in general associated with the Mo. River.

Corr. ID: 3 **Organization:** Mo. Valley Waterfowlers Association

Comment ID: 337672 **Organization Type:** Conservation/Preservation

Representative Quote: Mo. Valley Waterfowlers Association Supports more Shallow Water Habitat projects with in the state of Iowa along the Mo. River and we certainly believe Iowa's congressional delegation should strongly look at and Support Larger Flood Mitigation projects the help protect the people of the Mo. Valley why as a by -product of said effort meet habitat restoration goals. Its a Win, Win all around the board now and for future generations of Iowan's.

Corr. ID: 18 **Organization:** *Not Specified*

Comment ID: 337689 **Organization Type:** Unaffiliated Individual
Representative Quote: Habitat restoration projects and simulating a more natural flow regime are critical to endangered species recovery.

Corr. ID: 50 **Organization:** Izaak Walton League

Comment ID: 341990 **Organization Type:** Unaffiliated Individual

Representative Quote: - Genetic Diversity - Development of alternatives that preserve and protect the genetic diversity of the upper basin population of pallid sturgeon.

Corr. ID: 50 **Organization:** Izaak Walton League

Comment ID: 337751 **Organization Type:** Non-Governmental

Representative Quote: The IWLA asks the ACE to continue implementing recovery efforts in the area of the BSNP and strive to reconnect portions of the lower river to the flood plain.

Corr. ID: 51 **Organization:** Mo Valley Waterfowlers Association

Comment ID: 338238 **Organization Type:** Conservation/Preservation

Representative Quote: Reconnect some of our old land locked oxbow's.

Corr. ID: 57 **Organization:** Sierra Club Missouri River

Activist Network

Comment ID: 339244 **Organization Type:**

Conservation/Preservation

Representative Quote: The 2003 amended biological opinion document states (page 51 of the pdf) that:

"The pallid sturgeon sub-population in this river reach is aging and declining in status. This population is estimated at 151 individuals with 95 percent confidence intervals of 89 to 236 individuals (Kapuscinski 2003). This is down from an estimated 166 individuals in 2002 and 178 individuals in 2001. Kapuscinski (2003) estimates that this population of wild pallid sturgeon will be extinct by 2018 based on trend data collected for the period 1991-2003. The Service has interpreted Kapuscinski's conclusion of extinction to mean that this sub-population would be extirpated by 2018".
(2003 amended biop, pdf pg 51.)

The Corps ought to expend any and all available resources necessary to avert this condition. This includes massive acceleration of monitoring; capture and reproduction of adult, genetically wild pallid sturgeon in the hatcheries; and increase and monitoring of habitat that pallid sturgeon experts believe to be used for reproduction in the wild.

Corr. ID: 57 **Organization:** Sierra Club Missouri River
Activist Network

Comment ID: 339245 **Organization Type:**

Conservation/Preservation

Representative Quote: The Missouri River Recovery Program ought to be fully funded until at least 2018, and every effort aimed at averting regional extirpation in the wild. What actions to take should be advised by experts in pallid sturgeon biological needs. Failing that, available resources and every technologically feasible alternative ought to be expended to increase wild biological representation in hatchery stock.

Corr. ID: 60 **Organization:** Missouri Department of
Conservation

Comment ID: 339272 **Organization Type:** State Government

Representative Quote: Further, the EIS should reflect the Corps's duty to the citizens of Missouri to fulfill its obligations under the BSNP.

Corr. ID: 60 **Organization:** Missouri Department of
Conservation

Comment ID: 339270 **Organization Type:** State Government

Representative Quote: The U.S. Congress authorized the BSNP Mitigation Act to compensate for the loss of more than half a million acres of Missouri River habitat that occurred over the course of decades between St. Louis, Missouri and Sioux City, Iowa. The loss of public trust resources is a loss for the citizens of Missouri and a majority of the loss (305,000 acres) occurred in Missouri. To date,



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

roughly 30 percent of the 105,000 acres required for compensatory mitigation in Missouri has been completed. These existing mitigation lands provide partial restitution to Missouri citizens by providing Missourians and visitors with greater access to the river for floodplain fishing, hunting and other wildlife-associated recreation. Further, the nearly 72,000 acres of habitat yet due as restitution to the citizens of Missouri represents an opportunity for enhanced public recreation, restoration of lost habitat for fish and wildlife, economic growth and ecological sustainability that is necessary to also maintain a wide variety of uses along the river, including agricultural, water supply and other uses.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 342002 **Organization Type:** Federal Government

Representative Quote: Enlarging the river through channel widening will allow more within bank, but off-main channel habitats to form. Ideally these areas should be accessible by fish over a wide range (but not necessarily all) river stages over the course of most years.

Floodplain connectivity with associated flow events can provide for critical lower flows and warmer water enhancing productivity of the Missouri River system.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 342346 **Organization Type:** Federal Government

Representative Quote: Habitat creation/restoration is a fundamental need along the river.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339299 **Organization Type:** Federal Government

Representative Quote: A land base is critical to implement projects necessary to meet both the species and mitigation goals. Many of the critical river processes needed to support these species can only occur with a larger land base connected to the river (i.e. much like the Mississippi and Atchafalaya River systems). Such lands should allow for both terrestrial and aquatic habitat creation/restoration and processes while providing a secure flood conveyance corridor that would minimize flood damages on adjacent lands, infrastructure, and public safety, much like the original Pick-Sloan plan.

Habitat creation/restoration is a fundamental need along the river.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment ID: 341986 **Organization Type:** Federal Government
Representative Quote: Consistent with the explicit intent of NEPA, we recommend the Corps consider a full range of alternatives in terms of flows, land acquisition and habitat manipulation to better explore the relationships and effects of proposed conservation measures along the river.

Corr. ID: 65 **Organization:** Nebraska Game and Parks Commission

Comment ID: 340210 **Organization Type:** State Government
Representative Quote: The Corps should consider the full range of flows from magnitude, seasonal, and duration perspectives along with the impacts and benefits of associated land purchases and habitat modifications.

Corr. ID: 65 **Organization:** Nebraska Game and Parks Commission

Comment ID: 340206 **Organization Type:** State Government
Representative Quote: A land base is critical for implementing projects necessary to meet both the species and mitigation goals.

Corr. ID: 65 **Organization:** Nebraska Game and Parks Commission

Comment ID: 340200 **Organization Type:** State Government
Representative Quote: We suggest the most successful strategy to provide for the three listed species and meet the mitigation objectives is to work towards a flow corridor that would include the desired biological and habitat features that are consistent with the other project purposes. A functional flow corridor would also address the principles and guidelines most effectively.

Corr. ID: 65 **Organization:** Nebraska Game and Parks Commission

Comment ID: 341988 **Organization Type:** State Government
Representative Quote: Consistent with the explicit intent of NEPA, we recommend the Corps consider a full range of alternatives in terms of flows, land acquisition and habitat manipulation to better explore the relationships and effects of proposed conservation measures along the river.

Corr. ID: 72 **Organization:** Montana Fish, Wildlife and Parks

Comment ID: 343589 **Organization Type:** State Government
Representative Quote: 2. The Management Plan must identify and recognize the need for management actions (e.g. flow and temperature manipulation from Fort Peck) targeted at opening the well documented biological bottlenecks identified in the Conceptual Ecological Models for the various pallid life stages. The Plan must ensure that these needs are not sacrificed in order to meet habitat objectives for least terns and piping plovers.

AL4500 - Alternatives: No Action



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Concern ID: 49707
CONCERN STATEMENT: One commenter recommended that the no action alternative be characterized as "no action" or "no project" rather than using current program status quo to represent "no action" or "no change." Another commenter stated that the existing baseline condition should be used as the basis for comparison of alternatives including the No Action. This commenter also stated that if the No Action alternative includes actions that would meet the project purpose and need, it is effectively an action alternative.

APPROACH: Section 1502.14(d) of the Council on Environmental Quality's (CEQ's) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) requires the alternatives analysis in an environmental impact statement (EIS) to include the alternative of No Action. The CEQ has indicated there are two distinct interpretations of "no action" that must be considered, depending upon the proposal being evaluated (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. 46 Fed. Reg. 18026 (1981)). The Corps believes that for the Missouri River Recovery Management Plan and EIS (MP-EIS) no-action alternative follows the first of the two interpretations, which is described by CEQ as follows:

The first situation might involve an action such as updating a land management plan where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases "no action" is "no change" from current management direction or level of management intensity... Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed. (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 1981.)

The 1983 U.S. Water Resource Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies, dated March 10, 1983 (P&G) specifies: "formulation of alternative plans should be based on the most likely conditions expected to exist in the future with and without the plan. The without-plan condition is the condition expected to prevail if no action is taken."

Representative Quote(s): **Corr. ID:** 64 **Organization:** U.S. EPA Region 7, Environmental Services Division
Comment ID: 339374 **Organization Type:** Federal Government
Representative Quote: Consistent with our comments during the scoping process for the Missouri River Ecosystem Restoration Plan in 2009, we similarly recommend for this EIS that you characterize the "no action" alternative to be a more literal "no action" rather than



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

using current program status quo to represent "no action," (i.e., no change). CEQ guidance does allow either perspective in the interpretation of the definition of "no action"; however, we believe that setting a baseline of river resource status based on no Federal restoration program (i.e., no project) both recognizes the very real possibility that future Federal resources for river restoration might be drastically limited or absent (e.g., budget constraints or opposed within individual basin States) and better provides for the robust range and rigorous assessment of alternatives required under CEQ regulations. Reliance upon existing programs or a "no change" alternative, in this case, is overly presumptive and represents an 'action' in-and-of-itself. The essential separation between the "no action" alternative and successive "action" alternatives could be difficult to distinguish in public review. Defining "no action" as "no project" provides for a robust range of possible alternatives, distinct separation between alternatives and "sharply defines the issues and provides for a clear basis for choice among options by the decisionmaker "(40 CFR 1502.14).

Corr. ID: 67

Organization: U.S. Environmental Protection Agency Region 8

Comment ID: 340262 **Organization Type:** Federal Government

Representative Quote: We recommend the existing environmental baseline (described in greater detail in subsequent section) be used as the basis for comparison of impacts across all alternatives, including the No Action alternative. In the past, some projects have compared the action alternatives to the No Action alternative for the impact analysis. In our experience, it is more difficult to understand the project's impacts without an assessment against existing conditions.

Additionally, if the No Action alternative includes actions that would meet the project purpose and need, it is effectively an action alternative. We recommend for clarity that alternatives meeting the purpose and need be analyzed as action alternatives.

Concern ID:

49742

CONCERN STATEMENT:

A commenter supported increased shallow water habitat projects in Iowa.

APPROACH:

The purpose of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to develop a management plan that includes a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon within authorization requirements from section 601(a) of Water Resources Development Act (WRDA) of 1986, as modified by section 334(a) of WRDA 1999, and further modified by section 3176 of WRDA 2007.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Pursuant that purpose, the Corps intends to explore and evaluate alternatives in a manner compliant with the requirements identified in 40 CFR 1502.14 (Alternatives including the proposed action) and Engineering Regulation 1105-2-100, the Planning Guidance Notebook. This will include an evaluation of reasonable alternatives; explanation for alternatives eliminated from detailed study; discussion of actions outside the agency’s jurisdiction, if necessary; identification of the preferred alternative; and a discussion of appropriate mitigation measures, if necessary.

Public comments received on the scope of the MP-EIS including the range of alternatives will be considered in development of the MP-EIS.

Representative Quote(s):

Corr. ID: 3 **Organization:** Mo. Valley Waterfowlers Association

Comment ID: 337668 **Organization Type:** Conservation/Preservation

Representative Quote: Mo. Valley Waterfowlers Association Supports the Corps (ACE) in it's efforts to Establish shallow water habitat projects with in the Mo. River basin in Iowa & Nebraska.

AM1000 - Adaptive Management

Concern ID: 49409

CONCERN STATEMENT: A commenter asked that adaptive management be better clarified and defined.

APPROACH: The Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will include an overview and general description of adaptive management. A comprehensive monitoring and adaptive management plan, including decision-making triggers, will be developed for the preferred alternative and included as part of the MP-EIS.

Representative Quote(s):

Corr. ID: 27 **Organization:** *Not Specified*

Comment ID: 337444 **Organization Type:** Unaffiliated Individual
Representative Quote: Does adaptive management mean that you can adjust your actions as long as you remain within the approved alternative or does it allow you to go outside of that if needed?

Concern ID: 49410

CONCERN STATEMENT: Commenters expressed the need for a well-designed monitoring program to support adaptive management's goal to continually learn and adjust management actions accordingly. One commenter suggested that the adaptive management plan should be designed



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

to provide feedback on an annual basis and objectives should be able to be evaluated over short time horizons. Another commenter suggested that without adequate funding for a monitoring and assessment component, an adaptive management approach would not be implementable.

APPROACH:

The Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will include an overview and general description of adaptive management. A comprehensive monitoring and adaptive management plan, including decision-making triggers will be developed for the preferred alternative and included as part of the MP-EIS.

Representative Quote(s):

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337720 **Organization Type:** Conservation/Preservation

Representative Quote: For some management actions, effects may be evaluated relative to single events (e.g., how did a single high flood-control release event affect habitat conditions?). For other management actions, effects may be evaluated relative to the cumulative effects of frequent management actions (e.g., hydropower production) on annual reproduction or habitat conditions. In both of these cases, annual evaluation of monitoring data after the breeding season should be possible to inform discussions related any adjustments to these same management actions during the following breeding season.

If the goal of adaptive management is to continually learn from monitoring data and adjust actions accordingly, then adaptive management programs should be designed to provide useful feedback for these discussions on an annual basis. The annual process of discussing monitoring results relative to specific management actions will help all participants in planning and adaptive management understand regular interactions between river management and endangered species. With a well-designed management-based monitoring program, monitoring data can provide insight about many different types of management effects at short time horizons. However, when objectives can only be evaluated (often poorly) at long time horizons (e.g., population trend, which requires a specific type of data collection that is both costly and time consuming), the focus of a monitoring programs is directed away from collecting information on metrics that would provide more immediate feedback on interactions between specific management actions and endangered species.

Corr. ID: 50 **Organization:** Izaak Walton League

Comment ID: 337750 **Organization Type:** Non-Governmental

Representative Quote: The League believes a thorough analysis of all the management alternatives and adaptive management actions



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

will ensure that future management decisions and actions are continuously improved. Updating and incorporating what is learned through regular monitoring of the river and the current recovery efforts will provide benefits to the listed species and lead to the recovery of portions of the habitat that has been lost and/or destroyed along the Missouri River.

Corr. ID: 64

Organization: U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339381 **Organization Type:** Federal Government

Representative Quote: The EIS should evaluate possible modifications which might be made to the Management Plan based on Plan performance, including metrics for measuring the achievement of or progress towards achievement of objectives and the extent of possible future modifications to Management Plan design and effect. Without clear delineation of the requirements of and limitations to an adaptive management approach, the coverage provided under NEPA for this Federal action might be inadequate and require supplemental NEPA compliance action in the future.

The EIS should evaluate the size and character of the monitoring and assessment effort required to support adaptive management under this Plan. The Management Plan should identify how achievement of the objectives of the Plan will be measured (i.e., metrics), what constitutes success or progress (i.e., benchmarks or criteria) and how that information will be communicated among management partners and the public. In order to support that component of adaptive management, the EIS should identify the kind of data which should be collected as part of Management Plan implementation. We believe it is critical that the Management Plan provide clear, detailed structure to a monitoring and assessment component as part of the adaptive management approach. It is our expectation that without adequate funding of this component, an adaptive management approach is not implementable.

Concern ID:

49676

**CONCERN
STATEMENT:**

A commenter suggested that the adaptive management planning framework should include consultation and information sharing with the Tribes and state and federal land and resource management agencies.

APPROACH:

The Corps will consult with the Tribes in fulfillment of their tribal trust responsibilities during development of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS). State fish and wildlife agencies will also be engaged in the MP-EIS process through the Fish and Wildlife Coordination Act.

Representative

Corr. ID: 59

Organization: U.S. DOI National Park



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Quote(s):

Service Midwest Region

Comment ID: 339264 **Organization Type:** Federal Government

Representative Quote: 19. Consider the Missouri River as a tribal cultural resource and work consultation and information sharing for tribes into adaptive management planning framework.

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339253 **Organization Type:** Federal Government

Representative Quote: 1. The adaptive management approach should be driven by data rather than by the agency's actions.

2. Consider State and Federal land management and resource agencies associated with the Missouri River. Work consultation and information sharing into adaptive management framework.

Concern ID:

49677

CONCERN STATEMENT:

Commenters expressed support for river management within an adaptive management framework and suggested that the adaptive management plan should identify specific decision points and performance criteria. One commenter suggested these should be examined relative to guideline for water user (e.g. power plants).

APPROACH:

The Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will include an overview and general description of adaptive management. A comprehensive monitoring and adaptive management plan, including decision-making triggers, will be developed for the preferred alternative and included as part of the MP-EIS.

Representative Quote(s):

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339266 **Organization Type:** Federal Government

Representative Quote: 26. Examine guidelines for water users (example power plants) and adaptive management thresholds in light of impact trigger points.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339307 **Organization Type:** Federal Government

Representative Quote: The Service continues to endorse river management within an adaptive management framework. We believe the refinements to the existing program will help clarify what has been learned since the 2003 Biological Opinion, and apply that knowledge to the best effect for the species. Identification of specific decision points and performance criteria will provide a much better blueprint for both agencies and the public in on-going river operations and management. Ideally they will foster greater



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

predictability in next steps as they will be identified beforehand, with considerable opportunity for input from the public. This will help focus management efforts on specific measures to avoid jeopardy to listed species and compensate for losses of the public's fish and wildlife resources.

Corr. ID: 65 **Organization:** Nebraska Game and Parks Commission

Comment ID: 340211 **Organization Type:** State Government

Representative Quote: The NGPC continues to endorse sustainable and resilient river management within an adaptive management framework. We believe the refinements to the existing program will help clarify what has been learned since the 2003 Biological Opinion was issued. Identification of specific decision points and performance criteria will provide a much better blueprint for agencies and the public for future river operations and management. Developing this decision making framework with public input will focus management efforts on measures that avoid jeopardy to the listed species and compensate for the losses of public trust fish and wildlife resources.

Concern ID: 49709

CONCERN STATEMENT: A commenter recommended that all those involved with developing the Adaptive Management Plan, especially those involved with evaluating uncertainty, refer to the executive summary and Appendices B and C of Corps (2011). The commenter suggested that there is new science related to terns and plovers that is not being considered in the ecological models.

APPROACH: The suggested references will be reviewed in development of the monitoring and adaptive management plan for the preferred alternative. The most recent science relative to least terns and piping plovers is being reviewed and incorporated into the effects analysis.

Representative Quote(s): **Corr. ID:** 49 **Organization:** American Bird Conservancy

Comment ID: 337737 **Organization Type:** Conservation/Preservation

Representative Quote: I would recommend that everyone involved with adaptive management on the Missouri River, particularly those tasked with evaluating uncertainty, carefully read the executive summary and Appendices B and C of Corps (2011). Given the costs of acquiring these data, it's not acceptable for the term "uncertainty" to be inclusive of both true uncertainty and the failure to become familiar with clearly written documents that were funded by Corps in consultation with USFWS. The failure of the Integrated Science Program and the Core Inter-agency Team to recognize and understand the universe of science that has already been done on the Missouri River is one of the biggest obstacles to the implementation of a successful adaptive management program.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

From a scientific perspective, it should no longer be considered valid to simply reiterate the simple and implicit conceptual model of USFWS (2003) that "dams are bad for terns and plovers because they result in fewer acres of ESH, which causes low fledge-ratios, which will lead to population declines". The paradigmatic construct of population regulation during the breeding season has been demystified for many years via population models, no matter how uncertain their parameter values, that have pointed to inter-annual survival across the non-breeding season as the most likely driver of ILT and PIPL population trajectories (Akcakaya et al. 2003, Buenau et al. 2013).

AP1000 - Authorized Purpose: General (not pertaining to one authorized purpose)

Concern ID: 49794
CONCERN STATEMENT: Commenters recommended the Management Plan and EIS maintain and balance all authorized purposes and be developed within the authorized purposes and existing authorities. Commenters expressed a desire that no authorized purpose should experience adverse impacts. One commenter stated that the ISAP recommendations did not consider the authorized purposes or social and economic considerations.

APPROACH: Alternatives will not be formulated specifically to provide mutual benefits to or amongst the authorized purposes. The focus will be to develop alternatives for the purpose of avoiding jeopardy.

Representative Quote(s): **Corr. ID:** 4 **Organization:** MOARC Association

Comment ID: 337438 **Organization Type:** Non-Governmental
Representative Quote: No authorized purpose should experience adverse impacts as a result of any future MRRP operations. All current Congressional authorizations must be maintained.

Corr. ID: 40 **Organization:** Coalition to Protect the Missouri River

Comment ID: 337517 **Organization Type:** Non-Governmental
Representative Quote: No authorized purpose should experience adverse impacts of any type as a result of any future MRRP operations. All current Congressional authorizations must be maintained for generations to come.

Corr. ID: 53 **Organization:** MO Department of Natural Resources

Comment ID: 338246 **Organization Type:** State Government
Representative Quote: This proposed EIS is intended to re-evaluate the current management actions of the Missouri River Recovery Program (MRRP), leading to the creation of a Management Plan (MRRMP) to meet the 2003 Amended Biological Opinion (BiOp) and the Bank Stabilization and Navigation Project



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

(BSNP) Mitigation Act requirements on which the MRRP is based. The rigorous science programs that are being established for the MRRMP should inform decisions, but the US Army Corps of Engineers (Corps) must ensure that implementation is based on the authorized purposes. The MRRMP/EIS must be developed within the framework of the existing operational authorities in the Missouri River Basin, and must only implement the MRRMP and accompanying adaptive management strategy in accordance with current legal limitations.

Corr. ID: 60 **Organization:** Missouri Department of Conservation

Comment ID: 339271 **Organization Type:** State Government

Representative Quote: In summary, the proposed EIS should continue to balance all authorized purposes of the Missouri River to maximize benefits for Missourians and the nation. Science-based planning can promote agriculture, ensure sustainable economic development, and enhance fish and wildlife benefits.

Corr. ID: 60 **Organization:** Missouri Department of Conservation

Comment ID: 339269 **Organization Type:** State Government

Representative Quote: The Missouri Department of Conservation (Department) supports all authorized purposes of the Missouri River. The Department is charged by citizen initiative through the Missouri Constitution to protect and manage forest, fish and wildlife resources in the State of Missouri. Missourians overwhelmingly support forest, fish and wildlife conservation with over 91 percent indicating their interest. Over two million residents and visitors participate in fishing, hunting, or wildlife-associated recreation in Missouri and most Missourians agree (79 percent) that the Department should make an effort to restore animals that once lived or are currently very rare in the state. There is an over \$11 billion economic impact in Missouri from wildlife-related recreation and the forest products industry. Fish and wildlife recreation and the forest products industry support over 95,000 jobs. Specifically on the Missouri River, recreation impacts range from over \$20 million upwards to over \$38 million. The Missouri River is a significant resource for the citizens of Missouri.

Corr. ID: 70 **Organization:** Ameren Corporation

Comment ID: 341611 **Organization Type:** Business

Representative Quote: 11. The agency should recognize that ISAP recommendations were provided without consideration of "authorized purposes" and social and economic considerations.

CC1000 - Consultation and Coordination: General Comments

Concern ID: 49420

CONCERN STATEMENT: Commenters asked about the duration of the scoping process and what the expectation for stakeholder participation would be.

APPROACH:



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

The public scoping comment period began on August 9, 2013, following a Notice of Intent in the Federal Register announcing the dates and locations of the web-based scoping meetings. The comment period was extended once due to the government shutdown, and the comment period closed on November 4, 2013. The public will have the opportunity to provide input or comments on the draft environmental impact statement (EIS) during a 45-day comment period. Following the release of the final EIS, there will be a 30-day waiting period before a Record of Decision is released.

Representative Quote(s):

Corr. ID: 7 **Organization:** *Not Specified*

Comment ID: 337755 **Organization Type:** Unaffiliated Individual
Representative Quote: What is your expectation for the stakeholders? What should the stakeholders' expectation be as it relates to the process along with our involvement?

Corr. ID: 32 **Organization:** *Not Specified*

Comment ID: 337451 **Organization Type:** Unaffiliated Individual
Representative Quote: How long do you expect the scoping stage of this process to take?

Concern ID:
CONCERN STATEMENT:

49421
Commenters expressed interest in being involved in the development of the Management Plan and EIS project as cooperating agencies and other participants and recommended including state fish and game agencies throughout the planning process.

APPROACH:

The public scoping period was the initial point in the National Environmental Policy Act (NEPA) process for the public or agencies to provide comment on the scope of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS). The NEPA process allows for public and agency comments on the draft environmental impact statement during a 45-day comment period. In addition, a Record of Decision cannot be issued until at least 30 days from publishing the Notice of Availability of the final EIS.

Agencies seeking a more formal cooperating agency role are encouraged to provide specific identification of the overlapping jurisdiction, authority, or special expertise, as well as a description of desired role and method of interaction.

Representative Quote(s):

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339267 **Organization Type:** Federal Government
Representative Quote: The NPS has a continuing interest in



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

working with the Corps to ensure effective planning, enhanced river values, and reduced impacts to resources of concern to the NPS. For continued consultation and coordination with the issues concerning these resources, please contact Hector Santiago, Regional Rivers Coordinator, at 402-661-1848.

Corr. ID: 60 **Organization:** Missouri Department of Conservation

Comment ID: 339273 **Organization Type:** State Government
Representative Quote: Please do not hesitate to contact Jennifer Campbell-Allison, Policy Coordinator (Jennifer.Campbell-Allison@mdc.mo.gov or 573-522-4115 Extension 3159) if the Department can assist you on this or other matters pertaining to forests, fish and wildlife in Missouri.

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339308 **Organization Type:** Federal Government
Representative Quote: Finally, we strongly urge the Corps include the state fish and game agencies throughout the planning process. State agency staff possess considerable expertise in managing most of the existing mitigation lands, as well as being our partners in monitoring and conservation. Their active involvement is critical to an efficient, effective plan formulation process and successful implementation. They also have statutory authority over fish and wildlife resources in their respective states as well as being the largest landowners along the river.

Corr. ID: 63 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339316 **Organization Type:** Federal Government
Representative Quote: Based on information provided in the notice, the Bureau of Reclamation requests participation in the development of the EIS as a cooperating agency under the National Environmental Policy Act of 1969.

First, Reclamation holds responsibilities and authorities under the Flood Control Act of 1944 (Public Law 534) which are directly relevant to the proposed management plan. Specifically, Reclamation has jurisdiction to construct and operate dams along the Missouri River upstream of Fort Peck Dam and on upper Missouri River Basin tributaries. Reclamation's jurisdiction includes 28 dams throughout the upper and lower Missouri River Basin and tributaries. As authorized in the Flood Control Act of 1944, Reclamation also has jurisdiction for irrigation projects in the Missouri River Basin that use the Missouri River as a water source.

Second, Reclamation holds special expertise and knowledge relevant to three focal species (piping plover, least tern, and pallid sturgeon) found in the project area and listed under the Endangered Species Act (ESA). Reclamation has recent experience with these species in



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

the Lower Yellowstone Intake Diversion Dam Modifications project, the Platte River EIS and Recovery Program, and undertaking or contributing to numerous scientific research and monitoring efforts.

The inclusion of Reclamation as a cooperating agency will assist in the orderly and coordinated analysis of the effectiveness of recovery actions on the Missouri River and compliance with the ESA.

Corr. ID: 64 **Organization:** U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339395 **Organization Type:** Federal Government

Representative Quote: We look forward to working with the Corps and your other Federal and State partners and the public through our NEPA and Clean Air Act, Section 309 responsibilities, in developing a Plan which accomplishes its intended objectives. If you have any questions regarding these comments and for future contact regarding the Management Plan, our Region 7 contact will be Larry Shepard. He can be reached at (913) 551-7441 or shepard.larry@epa.gov.

Corr. ID: 71 **Organization:** U.S. DOI, Bureau of
Reclamation, Great Plains Regional Office

Comment ID: 341621 **Organization Type:** Federal Government

Representative Quote: First, Reclamation holds responsibilities and authorities under the Flood Control Act of 1944 (Public Law 534) which are directly relevant to the proposed management plan. Specifically, Reclamation has jurisdiction to construct and operate dams along the Missouri River upstream of Fort Peck Dam and on upper Missouri River Basin tributaries. Reclamation's jurisdiction includes 28 dams throughout the upper and lower Missouri River Basin and tributaries. As authorized in the Flood Control Act of 1944, Reclamation also has jurisdiction for irrigation projects in the Missouri River Basin that use the Missouri River as a water source.

Second, Reclamation holds special expertise and knowledge relevant to three focal species (piping plover, least tern, and pallid sturgeon) found in the project area and listed under the Endangered Species Act (ESA). Reclamation has recent experience with these species in the Lower Yellowstone Intake Diversion Dam Modifications project, the Platte River EIS and Recovery Program, and undertaking or contributing to numerous scientific research and monitoring efforts.

The inclusion of Reclamation as a cooperating agency will assist in the orderly and coordinated analysis of the effectiveness of recovery actions on the Missouri River and compliance with the ESA.

Concern ID: 49422

CONCERN STATEMENT: A commenter requested the Corps directly consult with the State of Kansas and meet to discuss further involvement in the process.

APPROACH: Agencies seeking a more formal cooperating agency role are encouraged to provide specific identification of the overlapping



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

jurisdiction, authority, or special expertise, as well as a description of desired role and method of interaction. The Corps is working with the State of Kansas to determine if becoming a cooperating agency is the best avenue for their interests.

Representative Quote(s):

Corr. ID: 58

Organization: Kansas Department of Wildlife, Parks and Tourism

Comment ID: 339248 **Organization Type:** State Government
Representative Quote: Because of the long history of the State working with the Corps on implementation of the Mitigation project and our mutual interest in the successful completion of these efforts, we are requesting the Corps as a part of this process, to directly consult with the State of Kansas. With a project as large in geographic scope and important to the future of natural resources (both state and federal trust resources) associated with the Missouri River, we feel it is imperative that we have a clear understanding of the process and plans the Corps is considering. We look forward to meeting with you to discuss this further.

Concern ID:
CONCERN STATEMENT:

49423

A commenter asked if re-initiation of Section 7(a)(2) consultation would be required in the Management Plan development process and suggested the effects analysis and adaptive management plan development be treated as Section (a)(1) consultation. The commenter also suggested re-initiating consultation before conducting the NEPA process, which would present the appearance that the process was arbitrary and capricious.

APPROACH:

Implementation of certain elements of the reasonable and prudent alternative (RPA) included within the U.S. Fish and Wildlife Service 2000 Biological Opinion and 2003 Amendment to the 2000 Biological Opinion constitute federal actions that require compliance with the National Environmental Policy Act (NEPA). In accordance with 40 CFR 1502.4 (c), the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will evaluate all proposals or parts of proposals similar in nature such that, in effect, represent a single course of action. The MP-EIS will assess and, where appropriate, supplement or update prior NEPA analyses made pursuant to the requirements listed above. The MP-EIS will assess the cumulative consequences and alternatives to accomplish the purposes of the Biological Opinion to avoid jeopardy of the pallid sturgeon, least tern, and piping plover.

The Corps and the U.S. Fish and Wildlife Service will continue the Section 7 process informally until such time that formal consultation is required and appropriate.

Representative Quote(s):

Corr. ID: 49

Organization: American Bird Conservancy



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment ID: 337767 Organization Type:

Conservation/Preservation

Representative Quote: Evaluation should be focused on minimizing the negative effects of specific management actions on regional populations or implementing management treatments that increase some important fitness-related metric for endangered species on the Missouri River. It would be appropriate to shift the focus away from impossible evaluation at the scale of the listed entity (e.g., jeopardy avoidance, recovery) and focus evaluation narrowly on understanding the effects of Corps actions on listed species on the Missouri River. I suggest that the most effective way to achieve these objectives would be to treat the effects analysis and adaptive management plan development processes as a discrete Section 7(a)(1) consultation.

Corr. ID: 49

Organization: American Bird Conservancy

Comment ID: 337729 Organization Type:

Conservation/Preservation

Representative Quote: For these reasons, the development of a management plan via a broad-based effects analysis that can consider past and future actions and all of the action agencies authorities, seems like a much better fit for Section 7(a)(1) consultation than the preparation of a formal NEPA document that will be constrained by existing Records of Decision relative to historic section 7(a)(2) consultations. Currently, flexible implementation of management actions on the Missouri River is limited by the jeopardy BiOp's prescriptive RPAs. Releasing the objective-setting process from the constraints of the current BiOp would allow for the formulation of a greater number of alternative hypotheses for limiting factors and potential management solutions than the narrow range of biological hypotheses and management prescriptions that were hardwired into the BiOp. This would open up conceptual model, effects analysis, and management plan development processes to consideration of a range of alternative hypotheses and management treatments that could achieve the sort of management flexibility that Corps is looking for. It will also result in objectives that are less general and difficult to measure than those proposed in prior USFWS documents.

Corr. ID: 49

Organization: American Bird Conservancy

Comment ID: 337727 Organization Type:

Conservation/Preservation

Representative Quote: While jeopardy avoidance is legally required of the Corps under ESA, implementation of USFWS recovery plans is not (as this is the responsibility of the Department of Interior). Section 7 consultation on the Missouri River has been concerned almost exclusively with Section 7(a)(2) of the act. Section 7(a)(2) consultations have a single, primary focus: to ensure that a proposed action (explicitly defined in time and space) does not jeopardize the continued existence of a species or result in adverse modification of critical habitat. They meet the statutory requirements of defined



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

federal actions that may affect listed species and facilitate discrete projects within defined footprints. Conservation needs and the recovery of listed species ARE NOT the focus of Section 7(a)(2), only jeopardy avoidance.

However, the recovery needs of listed species ARE the intended focus of Section 7(a)(1) of the act. The analyses associated with a Section 7(a)(1) consultation are similarly structured to Section 7(a)(2) consultations; however, the scope of a Section 7(a)(1) consultation is programmatic and thus, extremely broad. It allows the action agency to address past, present, and future program actions on listed species and it allows the action agency to use any and all of its authorities, not just those associated with a discrete proposed action, to improve the species' baseline within the program area. In this way, Section 7(a)(1) promotes recovery and facilitates future Section 7(a)(2) consultations for discrete projects. Without programmatic actions to increase a species' baseline under Section 7(a)(1), Section 7(a)(2) consultations generally lead to a decrease in the species' baseline, moving future actions closer to jeopardy biological opinions, which is why many have referred to Section 7(a)(2) as "death by a thousand cuts".

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337944 **Organization Type:**
Conservation/Preservation

Representative Quote: Will this require re-initiation of Section 7(a)(2) consultation somewhere in the NEPA/Management Plan development process?

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337741 **Organization Type:**
Conservation/Preservation

Representative Quote: I suggest that the Independent Science Advisory Panel, as well as ESA experts from both Corps and USFWS outside of the Missouri River, should re-consider the need for the "Recovery Management Plan" EIS, which seems redundant with prior NEPA documents. If major changes are desired for endangered species management on the Missouri River, it would be much more effective to re-initiate consultation first, before performing another time consuming NEPA action based on existing constraints. This time around, section 7(a)(1) would be an appropriate pre-cursor to section 7(a)(2) to allow for greater consideration of positive actions that the Corps may be capable of to raise species baselines. I suggest that future consultations should incorporate much more information from the past decade of science on the Missouri River and should rely much more heavily on mechanistic assessments of real management effects on endangered species than the unsupported assumptions and uncertain demographic models that characterized the most recent Biological Opinion.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337728 **Organization Type:**



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Conservation/Preservation

Representative Quote: Section 7(a)(1) consultations can reduce inter-agency conflict and encourage conservation because a greater number of positive options for conservation actions are available. Section 7(a)(1) provides a mechanism for agencies to systematically compensate for past and/future impacts to a species or its habitat due to federal actions; improves the baseline for the species, particularly as it relates to the agency's actions and footprint; and ensures advance consideration of endangered species in planning, design, and funding of future projects that may affect them. This reduces regulatory surprises and conflicts in that: 1) the action agency can commit to actions it is predisposed to undertake; 2) the action agency can request funding for conservation actions in advance, not in response to a Section 7(a)(2) consultation that occurs in the middle of (or after) a budget cycle. Section 7(a)(1) consultations provide an administrative record of proactive and programmatic planning for species conservation that prevents both the action agency and the USFWS from appearing "arbitrarily capricious" in their decisions. Since programmatic consultations are not tied to discrete and narrowly defined actions, Section 7(a)(1) consultations are well suited to adaptive management, where annual planning can be informed by new information from monitoring programs without having to re-negotiate RPMs, RPAs, or incidental take statements.

Concern ID:
CONCERN STATEMENT:

49424
One commenter asked if there was another document or consideration other than the webinar.

APPROACH:

Available documentation regarding the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) or related efforts is available on the project website at <http://moriverrecovery.usace.army.mil/mrrp/f?p=136:70:0::NO>

Representative Quote(s):

Corr. ID: 15 **Organization:** *Not Specified*

Comment ID: 337685 **Organization Type:** Unaffiliated Individual
Representative Quote: Is there a document or consideration aside from this webinar?

Concern ID:
CONCERN STATEMENT:

49425
One commenter asked if MRERP workshops would be repeated or considered.

APPROACH:

In December of 2011, the Missouri River Ecosystem Restoration Plan (MRERP) was defunded and immediately suspended following the Consolidated Appropriations Act of 2012. The Act stated, "None of



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

the funds made available in this Act may be used to continue the study conducted by the Army Corps of Engineers pursuant to section 5018(a) (l) of the Water Resources Development Act of 2007.” No MRERP activities have been conducted since. No MRERP workshops will be repeated. No similar workshops are planned.

Representative Quote(s):

Corr. ID: 12

Organization: *Not Specified*

Comment ID: 337682 **Organization Type:** Unaffiliated Individual

Representative Quote: How much from the MRERP workshops will be repeated, or can some be considered already reviewed?

GA1000 - Impact Analysis: Impact Analyses

Concern ID: 49426

CONCERN

STATEMENT:

Commenters provided information about the impacts of reduced flows on power and water plants, industry, infrastructure expenditures, as well as waterborne transportation benefits.

APPROACH:

The Council on Environmental Quality’s (CEQ’s) National Environmental Policy Act (NEPA) regulations require the evaluation and disclosure of consequences to affected resources. The Corps will include affected environment and environmental consequences chapters in the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) that will describe the existing condition of the resources determined to potentially be affected by the alternatives. The extent to which reduced flows would impact power and water plants, industry, infrastructure expenditures, as well as waterborne transportation will be considered in the MP-EIS unless it is determined they are not applicable to the proposed action by any alternatives identified.

Representative Quote(s):

Corr. ID: 4

Organization: MOARC Association

Comment ID: 337440 **Organization Type:** Non-Governmental

Representative Quote: Almost three million Missourians get their drinking water from the Missouri River or its' alluvium.³ [3 Missouri River Master Water Control Manual Review and Update FEIS, March 2004, Table 3.10-3 Population Served by Municipal Facilities by Reach, page 3-113] Modern municipal water and power plants have been designed around the flow regime under the regulated reservoir system. Reduced flows have the potential to starve power plant and water plant intakes below Gavins Point Dam for water since intake structure openings are fixed in elevation.⁴ [4 Thermal Power Intakes List, John LaRandeau, Corps, June 13, 2012] Low water levels can reduce a plant's ability to pump enough water to meet operational



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

demands. If water levels get too low, infrastructure expenditures in the range of tens of millions of dollars per plant could be required to modify or construct a new intake.

Reduced water flows can also influence power plants and other discharger's ability to comply with NPDES water discharge permit limitations.

Waterborne transportation benefits the environment and the economy because it is the greenest and most cost effective mode of freight transportation. Water-compelled rates, created when navigation competes with truck and rail transportation, reduce regional transportation costs; and thus, the costs of goods.

Corr. ID: 40 **Organization:** Coalition to Protect the Missouri River

Comment ID: 337490 **Organization Type:** Non-Governmental

Representative Quote: Reduced water flows can also influence a power plants ability to comply with cooling water discharge permit limitations. This can result in plant de-rates and lost generation at additional expense to consumers. The inability to comply with permitted thermal discharge limits would increase the likelihood that cooling towers may be required as an alternative to a once-through cooling system. Design and costs for a cooling tower retrofit can present significant challenges that are dependent on site-specific physical and economic considerations. The cost to retrofit a cooling tower, even for a small plant, can easily reach hundreds of millions of dollars. Operating penalties in lost efficiency and increased operating and maintenance cost can be significant. In a worst case scenario, site-specific or economic considerations may force the closure of a plant requiring new expenditures for replacement generation.

Navigation flows also support the in stream flow needs for a robust fishery and recreation industry. The lower Missouri River is known for its trophy catfish fishery and has produced numerous 100-plus pound catfish, including state and world record breaking fish. The free flowing lower river is also home to nine marinas and numerous boat clubs and outfitters and hundreds of hunting, fishing and sightseeing guides. Several of these business host events and tournaments on the river and some events draw participants from out of state and even from out of the country. All of these industries and resources have developed under the current level of flow support. Changing the flow support that these industries developed under would very likely negatively impact these resources and these industries.

In addition to these benefits, Missouri River navigation flows provide up to two-thirds of the input flow of water into the Mississippi River at St. Louis in drought years (72 % n 2012) and close to half in normal years, allowing for efficient transportation of inputs and products on



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

that river. If those flows were not available, especially under drought conditions in the Middle Mississippi River reach, significant economic impacts and possible complete Mississippi River closure could occur.

Corr. ID: 40

Organization: Coalition to Protect the Missouri River

Comment ID: 337486 **Organization Type:** Non-Governmental

Representative Quote: Almost three million Missourians get their drinking water from the Missouri River or its alluvium. Modern municipal water and power plants have been designed around the contemporary flow regime under the regulated reservoir system. Reduced flows have the potential to starve 19 power plant and 19 water plant intakes below Gavins Point Dam for water since intake structure openings are fixed in elevation. Low water levels can cause significant damage to equipment and reduce a plants ability to pump enough water to meet operational demands. If water levels get too low, infrastructure expenditures in the range of tens of millions of dollars per plant could be required to modify or construct a new intake.

For the 19 power plants which produce 11,058 megawatts of electricity and provide electricity to millions of consumers, lower flows can reduce a plants generating capacity or force it to shut down. This would result in adverse economic impacts in the form of lost generation and revenue, increased electric rates to consumers and the imposition of penalty fees on the system operator. Equipment damage and lost generation costs can easily fall into the range of hundreds of thousands to millions of dollars. Extremely low water conditions across a region would affect many plants and potentially create generating and transmission issues that could impact system reliability over a large portion of the service territory. The delivery of reliable electric service is particularly critical during the summer and winter months when lives could be placed at risk if electricity was not available for heating and cooling.

Concern ID:

**CONCERN
STATEMENT:**

49427

Commenters provided specific recommendations on topics that should be considered in the impacts analysis. These recommendations included:

- Consider the impacts of any changes to Missouri River navigation flow on Mississippi River navigation and subsequent impacts to traffic and air quality as a result;
- analyses of how any modifications to the BSNP would impact benefits, such as stabilization of the river and its banks, flood protection, critical infrastructure and other established uses
- economic impacts of any disruption to the entire Katy Trail system
- cumulative impacts associated with oil and gas development and fracking within the basin;
- economic analyses for impacts to any of the authorized



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

purposes;

- ecological or economic impacts associated with any change in "power peaking";
- effects to tributaries and associated cultural sites;
- impacts to historic sites including those related to the Lewis and Clark expedition and public access or use of the Lewis and Clark National Historic Trail;
- Visual impacts
- Impacts to public water intakes
- Sediment management and related economic impacts
- Cumulative impacts of stream bank stabilization practices;
- Climate change
- the potential effects of project alternatives on local stakeholders and watershed groups
- the direct, indirect and cumulative impacts to the environmental, cultural and recreational resource characteristics, including impacts to threatened, endangered or sensitive species, water quality and other resources within the scope of analysis.

APPROACH:

The Council on Environmental Quality's (CEQ's) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) require the evaluation and disclosure of direct, indirect, and cumulative consequences to affected resources. The Corps will include affected environment and environmental consequences chapters in the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) that will describe the existing condition of the resources determined to potentially be affected by the alternatives. The subject areas will be considered in the environmental impact statement to the extent they are applicable to the proposed action by any alternatives identified.

It is the policy of Corps to integrate climate change adaptation planning and actions into the agency's missions, operations, programs, and projects. The Corps is committed to working with internal and external experts on developing the necessary science and engineering to implement decisions based on the best available information.

The extent to which the Mississippi River is included within the affected environment will depend on the nature of the alternatives and the potential extent of their consequences on the Mississippi River.

Representative Quote(s):

Corr. ID: 40

Organization: Coalition to Protect the Missouri River

Comment ID: 337493 **Organization Type:** Non-Governmental

Representative Quote: Cost savings from barge transport on the Middle Mississippi are estimated to exceed four billion dollars per



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

year, but depend upon the reliability of the inland waterways including the flows provided by the Missouri River. If the Mississippi and Illinois Rivers were to shut down due to low Missouri River flows feeding the St. Louis to Cairo, IL reach, truck traffic in the St. Louis region alone would increase by 200%; delays would increase by almost 500%; e injuries and fatalities would increase by at least 36%; maintenance costs would increase by at least 80%.

Moving cargo on inland waterways such as the Mississippi River ensures cleaner air with less production of Greenhouse Gas emissions such as hydrocarbons, nitrous oxide, carbon monoxide and carbon dioxide. Inland barge transportation produces far fewer Greenhouse Gas emissions for each ton of cargo moved compared to transport by truck or rail. Comparing transport emissions per ton mile (emissions generated while shipping one ton of cargo one mile), researchers calculated that transport by rail emits 139% more CO₂, and transport by truck emits 371% more CO₂, than transport by inland barge.

Moreover, because of the greater flow reliability created after the Missouri River reservoirs came on line in the 1960s, barge draft and tow size restrictions on the Mississippi River also greatly diminished and Mississippi River navigation shutdowns nearly ceased. The effects of reliable Mississippi River commerce are a more vigorous economy and greater job creation.

Corr. ID: 53 **Organization:** MO Department of Natural Resources

Comment ID: 338249 **Organization Type:** State Government

Representative Quote: Modifications to the BSNP have the potential for wide ranging impacts and must be carefully considered and analyzed. The BSNP has stabilized the Missouri River providing assurance against eroding banks and a shifting channel that might otherwise impact numerous towns and cities located along the lower river. The BSNP has also allowed for reliable construction of levees providing an extensive flood protection system protecting not only municipalities but prime agricultural land. Critical infrastructure, including transportation, pipelines and power lines of regional, state and national importance has also benefited from the placement of the BSNP. To continue to modify the BSNP, the MRRMP must consider the impacts to the many established uses that have evolved since completion of the BSNP project.

Corr. ID: 53 **Organization:** MO Department of Natural Resources

Comment ID: 338252 **Organization Type:** State Government

Representative Quote: The Department requests the Corps to analyze the entire Katy Trail to determine the economic impacts of disrupting this nationally recognized trail system.

Corr. ID: 53 **Organization:** MO Department of Natural Resources



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment ID: 338250 **Organization Type:** State Government

Representative Quote: Modifications to the BSNP have the potential for wide ranging impacts and must be carefully considered and analyzed. The BSNP has stabilized the Missouri River providing assurance against eroding banks and a shifting channel that might otherwise impact numerous towns and cities located along the lower river. The BSNP has also allowed for reliable construction of levees providing an extensive flood protection system protecting not only municipalities but prime agricultural land. Critical infrastructure, including transportation, pipelines and power lines of regional, state and national importance has also benefited from the placement of the BSNP. To continue to modify the BSNP, the MRRMP must consider the impacts to the many established uses that have evolved since completion of the BSNP project.

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339255 **Organization Type:** Federal Government

Representative Quote: 5. Conduct economic analysis of authorized purposes and the Corps activities conducted to meet the U.S. Fish & Wildlife Service (USFWS) BiOp in order to develop and compare alternatives.

6. Include in the economic analysis all pertinent components such as agencies' cost for monitoring, planning, management, meetings and all associated costs of main stem dam operations.

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339265 **Organization Type:** Federal Government

Representative Quote: 20. Identify how tributaries and associated cultural sites would be affected by river management actions. These actions include but are not limited to flow alteration and habitat conservation activities (non-native plant control techniques) with peripheral effects (staging areas, helicopters, specialized equipment, etc.) that can harm or adversely affect connected natural and cultural resources.

21. Consider impacts to historic sites related to the Lewis and Clark Expedition, including indirect impacts.

22. Consider changes to public access or use of the Lewis and Clark National Historic Trail, including potential new opportunities for trail development and access when appropriate.

23. Consider visual impacts to Trail visitors, Park visitors, and the scenic values of the recreational river.

24. Identify all public water intakes, their elevations and analyze the economic and ecological cost-benefits of managing dam operations to support these systems



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

25. Assess how cumulative impacts of water use for energy development upstream affect species recovery. Include related planning efforts in the area to determine impacts if these activities are incorporated. Cumulative impacts of all of these developments should be addressed.

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339268 **Organization Type:** Federal Government

Representative Quote: 13. Conduct an economic analysis for sediment management

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339260 **Organization Type:** Federal Government

Representative Quote: 14. Evaluate the appropriateness of bank management practices and consider the effectiveness and cumulative impacts of stream bank stabilization practices

Corr. ID: 61 **Organization:** U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339302 **Organization Type:** Federal Government

Representative Quote: It is also critical to carefully characterize the economic implications of all the options so decision makers and the public understand why various alternatives were chosen.

Corr. ID: 64 **Organization:** U.S. EPA Region 7, Environmental Services Division

Comment ID: 339380 **Organization Type:** Federal Government

Representative Quote: Analysis of a robust range of alternatives must incorporate the integration of the effects of all natural resource, navigation and flood risk management programs with those proposed as part of this Management Plan. Perhaps more importantly, the EIS should clearly identify impediments to achieving the objectives identified for the Management Plan, including changes to existing management authority or existing program limitations which would be necessary to the successful implementation of this Management Plan. For example, regardless of existing limitations in Corps authority regarding flow management or levee construction/reconstruction (e.g., Master Manual, PL 84-99), the draft EIS should describe whether existing authority or current management practices ultimately limit or preclude achievement of Management Plan objectives and what changes to existing authorities and programs would better support the Management Plan. Consistent with the spirit of NEPA, the public must know and understand the assumptions and any limitations which shape, complement and constrain the effectiveness of the Management Plan. This is the transparency envisioned within NEPA.

Corr. ID: 64 **Organization:** U.S. EPA Region 7, Environmental Services Division

Comment ID: 339385 **Organization Type:** Federal Government



Representative Quote: Climate Change

The EIS should explicitly address how the Management Plan, in specific provisions, will enable the Corps and your other Federal and State partners to accommodate projected changes within the basin affecting the channel/floodplain environment resulting from climate change. Specifically, but not limited to, the EIS should describe how projected changes in precipitation and temperature within the Missouri River basin could affect mainstem hydrology and water quality and the demands placed upon river resources by users. For example, changes in basin precipitation patterns might result in significant changes in the location, timing and quantity of precipitation runoff. Changes in regional climate might result in further increases in the temperature of tributary and mainstem flows affecting reproduction, food availability, shallow water habitat suitability and the ability of the river to accommodate heated effluent discharges without significant adverse impacts.

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8

Comment ID: 340265 **Organization Type:** Federal Government

Representative Quote: Relation to Local Stakeholders and Watershed Groups

The project alternatives and their potential effects on local stakeholders and watershed groups should be analyzed in relation to the following issues: "

"How current stream usage will be altered;

"The ecosystem changes in these areas (e.g., recreationists/recreation industry, habitat quality, enhanced user experience, etc.);

"How each alternative will affect property and real estate values; and

"When water and instream flow will be available to provide wetted habitat and long-term habitat maintenance (i.e., sediment transport, channel morphology).

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8

Comment ID: 340264 **Organization Type:** Federal Government

Representative Quote: The EPA recommends the NEPA document examine the direct, indirect, and cumulative impacts to the environmental, cultural, and recreational resource characteristics of the project area. This examination may include impacts to threatened, endangered and/or sensitive species and their habitat; fish and invertebrate assemblages; water quality; and other resources within the geographic scope of analysis. Additionally, we recommend the impact analysis consider the potential for non-linear responses, where incremental impacts of the proposed project may not result in environmental conditions changes that are greater than



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

incremental.

The EPA also recommends the NEPA document examine the cumulative impacts of other water development or management and habitat restoration projects that will affect water quality and aquatic resources, analyzing the direct and indirect effects of all alternatives, in combination with past, present, and reasonably foreseeable future activities. Environmental impacts are generally more effectively analyzed according to airsheds and watersheds rather than political boundaries.

We request that the NEPA document specifically clarify the relationship of this project to other water management and habitat restoration projects to aid in the disclosure of impacts to the affected environment. We recommend that site-specific characterization and disclosure of past impacts to aquatic ecosystems, including streams, associated wetlands and aquatic habitats, include the impacts from all historical operations and management.. We also recommend the characterization of incremental impacts of historical operations and management when possible as it may inform current management and restoration decisions.

We recommend the cumulative effects analysis account for the effects of any reasonably foreseeable population growth in the area and its effects on the hydrology and aquatic resources. Analysis of indirect impacts of development will also aid in alternative selection and identification of strategies for adaptive management. Specifically, please discuss whether the project is likely to affect the location, timing or amount of population growth and associated development. If this project affects growth, we recommend assessing the expected environmental effects of that growth in the EIS.

Corr. ID: 70

Organization: Ameren Corporation

Comment ID: 341610 **Organization Type:** Business

Representative Quote: 10. Alternatives should consider impacts on/of the Mississippi River as part of a "cumulative effects" assessment and spatial component of the EIS. This should include both species recovery as well as social and economic interests' effects (e.g. navigation and intakes).

Concern ID:

**CONCERN
STATEMENT:**

49431

Commenters suggested topics for consideration when analyzing water resources such as considering whether water quality in the Missouri River and its tributaries is a contributing factor to species of concern and conducting a flows analysis that considers ways to optimize naturally occurring flow conditions to ensure efforts to achieve the MRRP objectives do not negatively impact flood control, downstream flow support and the livelihoods of Missourians.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

APPROACH:

The Council on Environmental Quality's (CEQ's) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) require the evaluation and disclosure of impacts to affected resources. The Corps will include affected environment and environmental consequences chapters in the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) that will describe the existing condition of the resources determined to potentially be affected by the alternatives. The subject areas will be considered in the environmental impact statement to the extent they are applicable to the proposed action by any alternatives identified.

The geographic scope of the MP-EIS includes the mainstem Missouri River and its meander belt from the headwaters of Fort Peck reservoir to the mouth of the river near St. Louis, Missouri. Tributaries or other areas outside of that geographic scope would be described in the MP-EIS to the extent that the alternatives identified for evaluation have the potential to result in consequences within those areas.

Representative Quote(s):

Corr. ID: 50

Organization: Izaak Walton League

Comment ID: 337753 **Organization Type:** Non-Governmental
Representative Quote: The IWLA also requests the ACE consider the following: Is water quality in the Missouri River or from any of its major tributaries a contributing factor to low reproduction of the endangered pallid sturgeon or for the 51 of 67 native fish species now listed as rare or declining along the Missouri River?

Corr. ID: 53

Organization: MO Department of Natural Resources

Comment ID: 338247 **Organization Type:** State Government
Representative Quote: The Department is concerned with the range of flows analysis. Neither flood control nor downstream flow support can be negatively impacted to achieve MRRP objectives. Both of these authorized uses benefit numerous cities and towns that are adjacent to the Missouri River and productive agricultural farmland throughout the floodplain. Due to tributary input below Gavins Point Dam, there are natural river level fluctuations throughout the state of Missouri, and efforts to optimize these naturally occurring flow conditions without further impacting the lives and livelihoods of Missourians should be considered.

Concern ID: CONCERN STATEMENT:

49435

One commenter believed regional extirpation of species is an indicator of unacceptable mismanagement.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

APPROACH:

The purpose of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to develop a management plan that includes a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon within authorization requirements from section 601(a) of Water Resources Development Act (WRDA) of 1986, as modified by section 334(a) of WRDA 1999, and further modified by section 3176 of WRDA 2007..

Representative Quote(s):

Corr. ID: 57 **Organization:** Sierra Club Missouri River Activist Network
Comment ID: 339246 **Organization Type:** Conservation/Preservation
Representative Quote: Regional extirpation of any species is an unacceptable cost and a definite sign of mismanagement of America's natural, river resources.

GA2000 - Impact Analysis: Use Trends And Assumptions

Concern ID:

49438

CONCERN STATEMENT:

A commenter inquired about the incorporation of best science regarding climate change and drought. Another commenter recommended conducting an analysis of economic trends in navigation for the next 25-50 years.

APPROACH:

It is the policy of Corps to integrate climate change adaptation planning and actions into the agency's missions, operations, programs, and projects. The Corps is committed to working with internal and external experts on developing the necessary science and engineering to implement decisions based on the best available information.

The Corps has determined a period of analysis of 50 years is appropriate for forecasting consequences.

Representative Quote(s):

Corr. ID: 11 **Organization:** *Not Specified*
Comment ID: 337681 **Organization Type:** Unaffiliated Individual
Representative Quote: How will the study incorporate the best science on drought and climate change impacts on vulnerability/risks of species and humans?
Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region
Comment ID: 339263 **Organization Type:** Federal Government
Representative Quote: 18. Conduct economic analysis projecting navigation activities into the future (25-50 yrs)



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

GA3000 - Impact Analysis: General Methodology For Establishing Impacts/Effects

Concern ID: 49440

CONCERN STATEMENT:

One commenter recommended following the "Principles and Requirements for Federal Investments" in water resources for evaluating economic impacts. One commenter discussed current methods for evaluating economic effects of proposed measures and alternatives and provided information about the Federal Emergency Management Agency's recent Mitigation Policy for quantifying ecosystem services in cost-benefit analysis for property acquisition and associated tools.

APPROACH:

The process for consequences analysis will be guided by the 1983 U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies, dated March 10, 1983 (P&G). The P&G describes four *accounts* established to facilitate evaluation and display the consequences of management actions or alternative plans. The national economic development (NED) account displays changes in the economic value of the national output of goods and services expressed in monetary units. The environmental quality (EQ) account displays nonmonetary consequences on significant natural and cultural resources. The regional economic development (RED) account registers changes in the distribution of regional economic activity. The other social effects (OSE) account registers plan effects from perspectives that are relevant to the planning process, but are not reflected in the other three accounts. In a general sense, the OSE account refers to how the constituents of life that influence personal and group definitions of satisfaction, well-being, and happiness are affected by some condition or proposed intervention.

Representative Quote(s):

Corr. ID: 61

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339303

Organization Type: Federal Government

Representative Quote: Similar to our growing understanding of river science, the methods to evaluate the potential economic effects of any proposed measures or alternatives is another area that has greatly improved in the last 10 to 20 years. As noted in the "Principles and Requirements for Federal Investments in Water Resources":

"...Federal investments in water resources have been mostly based on economic performance assessment which largely focus on maximizing net economic development gained and typically involved unduly narrow cost-benefit comparison of the monetized effects. ...A narrow focus on monetized or monetizable effects is no longer reflective of



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

our national needs and from this point forward both quantified and unquantified information will form the basis for evaluating and comparing potential Federal investments..."

Thus, economic consideration of ecosystem functions must be an integral aspect of the cost and benefit analyses included in the planning process. In fact, over the last several years, a number of tools have been developed to help quantify ecosystem services relative to water development project. The Federal Emergency Management Agency's recent Mitigation Policy (FP-108-024-01; <http://www.fema.gov/benefit>) explicitly includes quantified ecosystem services in their benefit to cost analyses for acquisition of properties as part of its Pre-Disaster and Flood Mitigation programs, as well as the Hazard Mitigation Grant Program. Service staff recently attended a floodplain workshop in St. Louis coordinated, in part, by Corps staff on the Mississippi River. Materials from that meeting demonstrate a number of tools used to identify and quantitatively evaluate effects to ecosystem services such as water and nutrient regulation, recreation, habitat and biodiversity, water supply, food, energy and raw materials and many others. The following websites are just a couple of the resources available as reference:

<http://esvaluation.org/> <http://www.ebmtools.org/mimes.html>
<http://www.naturalcapitalproject.org/InVEST.html>
[http://www.eartheconomics.org/FileLibrary/file/Midwest/Earth Economics Middle%
ver_ESV_2012.pdf](http://www.eartheconomics.org/FileLibrary/file/Midwest/Earth%20Economics%20Middle%20East/ESV_2012.pdf)

We will share the specific materials with the project managers and recommend they include such tools in alternative formulation and evaluation for the management plan.

Corr. ID: 65 **Organization:** Nebraska Game and Parks Commission

Comment ID: 341987 **Organization Type:** State Government

Representative Quote: In a future of likely declining federal budgets, it is imperative to formulate project features that work with the river to the maximum extent practicable. It is also critical to carefully characterize the economic implications of all the options so decision makers and the public understand why various alternatives were chosen. Similar to our growing understanding of river science, the methods to evaluate the potential economic effects of any proposed measures or alternatives is another area that has greatly improved in the last two decades. As noted in the "Principles and Requirements for Federal Investments in Water Resources":

" ...Federal investments in water resources have been mostly based on economic performance assessment which largely focus on maximizing net economic development gained and typically involved unduly narrow cost-benefit ratio comparisons of the monetized



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

effects.... A narrow focus on monetized or monetizable effects is no longer reflective of our national needs and from this point forward both quantified and unquantified information will form the basis for evaluating and comparing potential Federal investments..."

Concern ID:
CONCERN
STATEMENT:

49445
One commenter recommended examining changes in volume, storage, flow and quality of groundwater in assessing the potential impacts of an alternative on regional groundwater systems.

APPROACH:

The existing conditions of groundwater resources will be described with enough detail within the affected environment chapter of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) to adequately address consequences in the environmental consequences chapter for the range of alternatives considered. Specific details provided during scoping will be considered in development of the affected environment and environmental consequences chapters if applicable to the proposed action based on the alternative identified for consideration.

Representative
Quote(s):

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8
Comment ID: 340275 **Organization Type:** Federal Government
Representative Quote: The EPA recommends the NEPA document consider and compare the relative impacts among alternatives and appropriate mitigation measures. In assessing the potential impacts of a proposed project on groundwater systems in the region of the project site, we recommend examination of the potential for changes in the volume, storage, flow and quality of groundwater in light of data obtained from characterization of groundwater resources and groundwater use. Projected construction or maintenance may have impact on these facets of the natural system. Any changes in the system that result from implementation of the project should be identified.

Concern ID:
CONCERN
STATEMENT:

49446
One commenter recommended the NEPA document include an analysis of water quality, reservoir dynamics and impacts to flow regime, stream morphology and sediment transport, resident fish species and invertebrate assemblages and changes in habitat types. The commenter suggested the alternatives analysis should account for temporary and permanent alterations of habitat and the scope of the impact analysis should include any stream resources in the immediate project area and downstream. In addition, the commenter requested the following be considered when defining baseline conditions: verification of historical data, potential influences of climate change on future hydrology and indirectly impacted areas such as downstream segments and source water areas where water withdrawals will occur.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

APPROACH:

The Council on Environmental Quality's (CEQ's) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) require the evaluation and disclosure of consequences to affected resources. The Corps will include affected environment and environmental consequences chapters in the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) that will describe the existing condition of the resources determined to potentially be affected by the alternatives. The subject areas will be considered in the environmental impact statement to the extent they are applicable to the proposed action by any alternatives identified.

Representative Quote(s):

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8

Comment ID: 340271 **Organization Type:** Federal Government
Representative Quote: Should the project modify flow either through operational changes, increased diversion of water, or introduction of new water sources, we recommend the NEPA document include analysis of water quality. In addition to what is described above for reservoirs, we recommend analysis of:

- Current and post-project water quality at a critical flow condition and expected changes to assimilative capacity or permits, which
 - o Compares current water quality, post-project water quality, and the applicable water quality standards,
 - o Uses methods to assess water quality and determine water quality-based effluent limits,
 - o Accounts for changes in background water quality for water quality modeling and determinations for assimilative capacity;

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8

Comment ID: 340268 **Organization Type:** Federal Government
Representative Quote: Analysis of each alternative with respect to the affected stream system(s) should account for temporary and permanent alterations of habitat and subsequent impacts to aquatic life. In order to understand project effects on streams, the scope of the impact analysis should include any stream resources in the immediate project area and downstream of the project area, including effects associated with nationwide or individual permitting of discharge of dredged or fill material to Waters of the U.S. for the impact analysis, reaches should be selected based upon their representativeness with regard to geographic scope and the type of modification.

Selection of stream reaches should also include interagency coordination to ensure that critical resources (e.g., species recovery areas, recreational areas, critical habitat for threatened or endangered species, segments impaired per Section 303(d) of the Clean Water

Act, segments for which TMDLs have been established, receiving waters for permitted dischargers, source water areas) are considered and the scope of analysis is appropriate. Stream impacts should be considered regionally within the context of the cumulative analysis portion of the review.

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8

Comment ID: 340263 **Organization Type:** Federal Government

Representative Quote: Please consider the following when defining baseline conditions:

"Verification of historical data (e.g., data 5 years or older) as currently representative or as appropriate for use to characterize baseline if not;
 "A hydrologic analysis sufficiently detailed to provide the necessary information for the assessment of biological and geomorphic impacts;
 and

o We also recommend consideration of the potential influences of climate change on future hydrology

"A geographic scope of analysis that includes those resources directly impacted by the project footprint, as well as the resources indirectly (or secondarily) impacted by the project.

o Indirectly impacted areas may include downstream segments, source water areas where water withdrawals will occur, and any other resource areas which may be affected by changes in water management or operations

Corr. ID: 67 **Organization:** U.S. Environmental Protection Agency Region 8

Comment ID: 340266 **Organization Type:** Federal Government

Representative Quote: In order to illustrate effects to wetlands in the area, the NEPA document should specifically include the following analyses or descriptions: .

-Description of impacts under individual or nationwide permits authorizing the discharge of fill or dredge materials to waters of the U.S.;

-Clear maps, including wetland delineation and regional water features;

-Wetland delineation and descriptions, including wetlands function analysis if there is any potential that the project will cause impacts;

-Detailed analysis of the direct, indirect and cumulative impacts to all wetlands in the geographic scope, including impacts to wetlands from changes in hydrology even if these wetlands are spatially removed from the construction footprints.

-Detailed analysis of potentially adverse impacts to aquatic resources from reasonably foreseeable development; and

-Impacts associated with restoration and changes to the riparian habitat or instream habitat types or quantities should be analyzed and include quantification of lost aquatic and riparian habitat types.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Corr. ID: 67

Organization: U.S. Environmental Protection Agency Region 8

Comment ID: 340269

Organization Type: Federal Government

Representative Quote: Should in-stream flow quantity be altered by the project, the NEPA document should include analysis of:

- Impacts to the flow regime, with an emphasis on the implications of these changes on channel complexity, channel maintenance, aquatic habitat availability and life history adaptations; which includes
 - o Presentation and comparison of pre- and post-project flows as characterized in the table below (note: table did not paste into PEPC - see attachment):

- o Quantification of the cumulative total diversions as the proportion of average monthly (or daily) streamflow diverted where impacts from water withdrawal are occurring from multiple past, present and future diversions

- Impacts to stream morphology and sediment transport due to construction, changes in sediment sources or channel shape, changes in stream flow, or changes in land use

- o Identify critical habitat types

- o Relate pre- and post-project flows to channel maintenance and complexity, sediment transport

- Impacts to resident fish species and invertebrate assemblages; which includes

- o Baseline data regarding functional species composition, diversity, evenness, abundance, and, for macroinvertebrates, characterization of flow preference. EPA's rapid bioassessment protocol, or a state-specific method, may be used to describe baseline habitat quality

- o Characterization of shifts in species composition, impacts to less tolerant species, and changes in functional composition between current baseline and post-project environment "

- o Impacts to physical habitat, including availability, heterogeneity, connectivity, and long-term habitat maintenance

- o Consideration of multiple metrics or factors that influence habitat such as loss of flushing flows, reduced floodplain connectivity, temperature, and changes to ecologically significant flows

- o Analysis of aquatic resource impacts should integrate any results from flow, stream morphology and water quality analyses

- Impacts associated with changes in habitat types should be analyzed and include quantification of habitat conversion

- A description of mitigation measures for potentially adverse impacts to stream resources and aquatic life

Corr. ID: 67

Organization: U.S. Environmental Protection Agency Region 8

Comment ID: 340270

Organization Type: Federal Government

Representative Quote: The EPA recommends analysis of reservoir



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

dynamics that may change due to changes in sediment dynamics and transport, or reservoir management and hydrology, specifically addressing the spatial extent, magnitude, frequency and duration of effects to the following: changes to wetted habitat and lake elevations, dissolved oxygen; temperature, pH, metals release, nutrients, algal growth, total suspended solids, turbidity and total/dissolved organic carbon. A change in any of these parameters has the potential to affect a fishery or recreational usage (including fish consumption advisories and methylation of mercury) and consequently, these uses should be considered and addressed. We recommend considering how reservoir operations and fluctuating water levels may influence water quality, fisheries, or recreational use within or downstream of the reservoir. We recommend characterization of the frequency and magnitude of water level fluctuations within the reservoir and analysis of the potential impacts associated with these fluctuations.

Model selection should ensure the full variability and dynamics of growing season nutrient cycling, algal blooms, and reductions in dissolved oxygen are adequately captured to predict potential nutrient impacts. Calculations should use temporal and spatial scales that enable complete analysis of the particular water quality parameters of interest. For example, DO concentrations and temperature vary throughout the water column and vary throughout a day.

ON1000 - Other NEPA Issues: General Comments

Concern ID: 49447

CONCERN STATEMENT: Commenters provided recommendations on the process for developing the EIS including completing the effect analysis and Management Plan before determining the scope and NEPA required.

APPROACH: The Council on Environmental Quality (CEQ) recommends initiating the National Environmental Policy Act (NEPA) early in the planning process. The effects analysis is complementary to the NEPA and Corps planning process. The effects analysis will inform the objectives of the plan and provide critical information for the development of a reasonable range of alternatives. Initiating the NEPA process early allows for public and agency comments on the scope of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) to be considered in carrying out the effects analysis.

Representative Quote(s):

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337723 **Organization Type:**
Conservation/Preservation

Representative Quote: Why are the effects analysis and



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

management plan being developed in a NEPA context?

The review materials state (emphasis mine): "The Management Plan and EIS will provide a definitive adaptive management process to ensure the flexibility needed to avoid jeopardy of the listed species." However, it appears that existing Corps authorities and completed NEPA documents already cover a large range of actions that might be taken to avoid jeopardy (Corps 1978, Corps 1981, Corps 1987, Corps 2003, Corps 2004, Corps 2004a, Corps 2010, and Corps 2011). Which potential management actions, specifically, are lacking NEPA coverage? While the Missouri River Recovery Program is an administrative merger of several Corps programs that were previously discrete (e.g., endangered species compliance, mitigation, and ecosystem restoration), each of these programs completed EIS documents prior to this merger that should cover any potential management actions for endangered species on the Missouri River. The notice of intent for the Management Plan EIS states that issues related to Ecosystem Restoration will not be covered in this EIS. Consequently, the Management Plan EIS seems redundant with previous NEPA. Given the time and costs that will inevitably be associated with this new management plan EIS (the programmatic EIS for sandbar habitat creation took from 2005-2011 to complete), it seems like it would be more appropriate to complete the effects analysis and management plan development processes first, and scope out any additional NEPA actions, if necessary, relative to specific management actions with clearly defined scopes and footprints, after the plan determines if any management actions are necessary that aren't already covered. Preparing a new "Recovery Management Plan EIS" prior to the development of a management plan seems to be putting the cart way before the horse.

Concern ID:

49449

**CONCERN
STATEMENT:**

One commenter suggested the NEPA document include mitigation-related information for water quality, stream morphology and aquatic life impacts, providing specific information and measures that should be included in this discussion. Another commenter stated that design criteria and mitigation and monitoring requirements should be coordinated with the Fish and Wildlife Service and the states and identified in the EIS. One commenter recommended trapping turtles prior to beginning projects. Another comment was received regarding timing considerations for mitigation of impacts on socioeconomic resources.

APPROACH:

The Council on Environmental Quality's (CEQ's) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) require agencies to include appropriate mitigation measures not already included in the proposed action or alternatives (40 CFR 1502.14) and the consequences analysis will include a discussion of mitigation



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

measures proposed to mitigate for adverse environmental consequences.

Representative Quote(s):

Corr. ID: 1

Organization: *Not Specified*

Comment ID: 337667 **Organization Type:** Unaffiliated Individual
Representative Quote: Trap and relocate turtles before beginning projects

Corr. ID: 67

Organization: U.S. Environmental Protection Agency Region 8

Comment ID: 340277 **Organization Type:** Federal Government
Representative Quote: Mitigation

The EPA recommends the NEPA document include identification of appropriate mitigation where impacts are expected and clarify to which alternatives that mitigation applies. We recommend the following, at a minimum, be included:

- designation of the entity responsible for implementing the mitigation;
- a defined monitoring plan;
- identification of funding sources;
- mechanisms for public disclosure of the analysis and management decisions;
- specific temporal milestones to meet rehabilitation standards; and, as described in the adaptive management section below:
 - o specific management decision points based upon protecting the minimum desired environmental conditions (thresholds) in the project area, which would trigger action;
 - o management alternatives and mitigation measures that would be implemented should a threshold be exceeded;

The NEPA document should include, but not be limited to, details on mitigation measures for water quality, stream morphology and aquatic life impacts.

Corr. ID: 67

Organization: U.S. Environmental Protection Agency Region 8

Comment ID: 341976 **Organization Type:** Federal Government
Representative Quote: -What, if any management actions or changes have already occurred, why and what effect they are having;

- Identification of FWS recommendations including any related design criteria, mitigation and monitoring requirements to reduce potential impacts to TES species from the proposed project; and
- Adequate design criteria, restoration/mitigation and monitoring measures, developed in coordination with the FWS and State, to ensure the proposed project and resulting development do not negatively impact habitat for migratory birds, bald eagles, or other



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

species.

Corr. ID: 70

Organization: Ameren Corporation

Comment ID: 341609 **Organization Type:** Business

Representative Quote: 9. To the extent latitude within the law and/or regulations creates some type of impact to social/economic/stakeholder interests, and impacts to that interest can be mitigated with time through some type of reasonable action, we believe that interest should be afforded those timing considerations within the final decision/adaptive management process to avoid Harm.

PN3000 - Purpose And Need: Scope Of The Analysis

Concern ID:

49605

CONCERN STATEMENT:

One commenter asked how the health of the Missouri River has changed in the last 10 to 20 years.

APPROACH:

The purpose and need chapter of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will describe the changes to the Missouri River ecosystem that have led to the existing status of the pallid sturgeon, least tern, and piping plover to the extent necessary to describe the need for the proposed action.

Representative Quote(s):

Corr. ID: 29

Organization: *Not Specified*

Comment ID: 337448 **Organization Type:** Unaffiliated Individual
Representative Quote: In order for the public to make an informed comment, what is the overall health of the Missouri River now that impacts the two to three species you identified compared to maybe ten to twenty years ago?

Concern ID:

49629

CONCERN STATEMENT:

Commenters made suggestions or inquiries regarding the geographic scope of the study. One commenter asked if the area upstream of Fort Peck Lake was included. Another commenter urged the consideration of other areas along the mainstem of upper basin states be considered for recovery efforts. Two commenters recommended inclusion of tributaries in the scope of the Management Plan. Two commenters also recommended inclusion of the Middle Mississippi River in the scope of the study.

APPROACH:

The geographic scope of the plan includes the Missouri River mainstem and its meander belt from the headwaters of Fort Peck Lake in northeast Montana to its confluence with the Mississippi River near St. Louis, Missouri. Although actions under the proposed plan would only occur within the geographic scope of the plan, if those actions have the potential to affect areas outside of the plan's



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

geographic scope, those areas would be described in the affected environment chapter and impacts to resources within those areas would be described in the environmental consequences chapter.

Representative Quote(s):

Corr. ID: 6 **Organization:** *Not Specified*

Comment ID: 337676 **Organization Type:** Unaffiliated Individual
Representative Quote: Is recovery planned upstream from Fort Peck Lake?

Corr. ID: 20 **Organization:** *Not Specified*

Comment ID: 337756 **Organization Type:** Unaffiliated Individual
Representative Quote: Failure to include the impacts of the Missouri on the free flowing segment of the Mississippi River and the inverse ignores the direct connection of these water courses.

Corr. ID: 20 **Organization:** *Not Specified*

Comment ID: 338244 **Organization Type:** Unaffiliated Individual
Representative Quote: Since the biological opinion includes flow releases, will the impact on the Mississippi segment be analyzed?

Corr. ID: 30 **Organization:** *Not Specified*

Comment ID: 337449 **Organization Type:** Unaffiliated Individual
Representative Quote: Will tributaries and the role they play be considered when developing the alternatives?" "Didn't Section 5018 of WRDA 2007 give the Corps and Fish and Wildlife Service the authority to work in the tributaries?"

Corr. ID: 34 **Organization:** *Not Specified*

Comment ID: 337460 **Organization Type:** Unaffiliated Individual
Representative Quote: Will the water quality of the tributaries be part of the analysis?

Corr. ID: 50 **Organization:** Izaak Walton League

Comment ID: 337752 **Organization Type:** Non-Governmental
Representative Quote: The League also urges the ACE to consider other areas along the mainstem, as authorized in Section 3176 of WRDA 2007, in the upper basin states for possible recovery efforts. We believe this will improve recovery opportunities for the species by putting recovery projects across a wider geographic area and also increase public support of the recovery program by having projects on the ground in multiple states rather than having them clustered in just one area.

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339249 **Organization Type:** Federal Government
Representative Quote: The appropriate scope of the recovery plan is important to the successful achievement of species recovery goals and the improvement of the Missouri River's ecological and hydrological function. The scope of the plan should not be limited to the main stem of the River. It should be recognized that the tributaries to the main stem are important habitat that is integral to



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

the habitat along the Missouri River and landscape factors affect the river as well. Tributary influences, floodplain connectivity, and other basin-wide factors that affect the riverine environment should be addressed in the river recovery plan.

Corr. ID: 64 **Organization:** U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339371 **Organization Type:** Federal Government

Representative Quote: Although intended by the Corps to be "narrower than the scope and purpose of the study from section 5018(a) of the Water Resources Development Act of 2007," known as the Missouri River Ecosystem Restoration Plan, the assessment under NEPA should include all geographical areas contributing to the objectives identified for the Management Plan. That is, although the final Management Plan might prescribe actions to be implemented only within the mainstem river using existing authorities, the NEPA documentation supporting the development and selection of a preferred alternative which would serve as the Management Plan should be more comprehensive and not be restricted in its analysis and assessment of the existing environment and the relationship between tributaries, floodplains and channel. To the extent that both active and inactive floodplains (e.g., meander belt) and tributaries affect the river mainstem's ability to support listed species and sustain ecologically important habitat, those Geographical areas should be included in the EIS assessment. The EIS is not the Management Plan, but the support documentation for that Plan, and its comprehensiveness should not be limited by existing authorities, policy or past practice which might ultimately shape the selection of an alternative as the Management Plan.

The EIS should include the effects and influences of major tributaries and the bluff-to-bluff floodplain of the mainstem river. Actions taken under the Management Plan might be limited to a defined main channel environment, but the assessment under NEPA must be more comprehensive to satisfy NEPA and CEQ implementing regulations.

Corr. ID: 64 **Organization:** U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339373 **Organization Type:** Federal Government

Representative Quote: Resource Scope

In a similar fashion, the final design of the Missouri River Recovery Management Plan should result from a comprehensive assessment (i.e., EIS) of all factors contributing to the decline and recovery of ESA-listed species and the loss and restoration of riverine habitat within the river and floodplain. Flow management of the Missouri River reservoir system and contributions from major tributaries of flow and sediment should be described and evaluated in the context of species needs and habitat development and sustainability within the mainstem river, i.e., channel and active floodplain. For example,



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

this might include the regulated and unregulated contributions from the Platte and Kansas Rivers to the mainstem physical and biological system.

Corr. ID: 69 **Organization:** Missouri Levee & Drainage District Association

Comment ID: 341612 **Organization Type:** Civic Groups

Representative Quote: Toward the end of directing scarce resources to reasonable alternatives, we request that the U.S. Army Corps of Engineers and the U.S. Fish & Wildlife Service expand the scope of the EIS and the amended biological opinion for the Management Plan to include the Middle Mississippi River. We believe that such an expanded scope is necessary to avoid alternatives whose implementation is remote and speculative and that have little chance of aiding the recovery of the pallid sturgeon.

Our request to expand the scope of the EIS to include the Middle Mississippi River mirrors the findings of the Missouri River Recovery Program Independent Science Advisory Panel (ISAP), in its Final Report on Spring Pulses and Adaptive Management, dated November 30, 2011 (11-STRI-1482), page 51:

Recovery of pallid sturgeon in the lower Missouri River ultimately might not depend on successful recruitment below Gavins Point Dam. Given the minimal extent of low-velocity habitat that exists downriver from Gavins Point Dam, pallid sturgeon larvae may be transported downstream at rates proportional to discharge, and exit the lower Missouri River. Such potential contributions of larval pallid sturgeon to the middle Mississippi River suggests that the importance of conservation efforts on the lower Missouri River may be realized in sustaining pallid sturgeon in a greater geographic context. Recruitment in areas where pallid sturgeon are known to spawn below Gavins Point Dam likely needs to be inferred from sampling an extensive area of the Missouri and Mississippi river basins.

Corr. ID: 69 **Organization:** Missouri Levee & Drainage District Association and MRRIC

Comment ID: 341613 **Organization Type:** Civic Groups

Representative Quote: In addition, at page 58, the Final Report on Spring Pulses and Adaptive Management goes on state that the three listed species (pallid sturgeon, interior least tern and piping plover) would benefit from review and integration of data and recovery efforts in an expanded geographic area:

The ISAP recognizes that the demographic units of the three listed species, located on the lower Missouri River below Gavins Point Dam, constitute a limited portion of the populations (or metapopulations) in the greater Missouri River system, and that each ecologically interact with conspecific individuals in other areas occupied by the species. For that reason, and to better facilitate the



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

recovery of the listed species, any adaptive management program that includes actions on the lower Missouri River should be integrated with conservation efforts elsewhere in the system, and supported by a synthetic program of data acquisition and analyses that takes advantage of information derived from studies undertaken beyond the focal area considered in this report.

This logic supports the expansion of the EIS for the Management Plan to include the Middle Mississippi River.

Concern ID:
CONCERN STATEMENT:

49630
Comments were received regarding the temporal scope of the Management Plan. One commenter asked if the plan would include 2011. Another commenter suggested that 50 years was too long of a temporal scope for the plan and a shorter temporal scope for the EIS should be considered.

APPROACH:

The Corps has determined a period of analysis of 50 years is appropriate. CorpsThe Corps planning policy states that the period of analysis shall be the time required for implementation and for a period of time over which any alternative plan would have significant or adverse effects.

Representative Quote(s):

Corr. ID: 14 **Organization:** *Not Specified*

Comment ID: 337684 **Organization Type:** Unaffiliated Individual
Representative Quote: Will you include the flood of 2011 in your study?

Corr. ID: 70 **Organization:** Ameren Corporation

Comment ID: 341980 **Organization Type:** Business
Representative Quote: 6. In conversations associated with the development of MRRIC "human consideration topics, the Corps identified the temporal scope of the EIS as 50 years. It seems presumptive and impractical for the agency to consider a time frame of this magnitude due to the current lack of understanding necessary to recovery the species, the need to develop additional scientific data to support recovery, and the difficulty, or impossibility, of the Corps ability to accurately assess social and economic consequences within this extended time frame. The Corps should adopt a shorter temporal scope for the EIS so as to avoid the potential for flawed analysis that will not serve the need of the species, or potentially create unanticipated impacts to other stakeholders interests.

Concern ID:
CONCERN STATEMENT:

49633
Several comments were received regarding the substantive scope of the Management Plan and EIS. One commenter asked if recreational access was a part of the Recovery efforts. Two



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

commenters encouraged the inclusion of ecosystem restoration and looking at the health of the river itself. A commenter encouraged a sincere effort to analyze the ecological needs and conditions of the river. A commenter also recommended the process not give deference to any particular authorized purpose or the Endangered Species Act. Another commenter asked how the Management Plan differed from the Missouri River Ecosystem Restoration Plan. A commenter stated that the Management Plan should consider oil and gas development. A commenter asked what would be done if the science indicates ecosystem restoration is needed to recover endangered species since ecosystem restoration is not part of the project scope.

APPROACH:

The scope of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to identify a suite of actions that removes or precludes jeopardy status for the piping plover, the interior least tern, and the pallid sturgeon within authorization requirements including acquisition and development of land needed for creation of habitat for listed species using authority provided by section 601(a) of Water Resources Development Act (WRDA) of 1986, as modified by section 334(a) of WRDA 1999, and further modified by section 3176 of WRDA 2007.

Representative Quote(s):

Corr. ID: 5 **Organization:** *Not Specified*

Comment ID: 337674 **Organization Type:** Unaffiliated Individual
Representative Quote: How is the study different than MRERP, referring to the Missouri River environmental restoration?

Corr. ID: 8 **Organization:** *Not Specified*

Comment ID: 337678 **Organization Type:** Unaffiliated Individual
Representative Quote: Are impacts of authorized purposes on the system operation going to be scoped (Missouri River Authorized Purposes Study).

Corr. ID: 16 **Organization:** *Not Specified*

Comment ID: 337686 **Organization Type:** Unaffiliated Individual
Representative Quote: Completion of the plan will be critical for the recovery of the species.

Corr. ID: 19 **Organization:** Mo Valley Waterfowler Association

Comment ID: 338241 **Organization Type:** Unaffiliated Individual
Representative Quote: Is recreational access a part of the whole restoration recovery part of the lower Missouri River?

Corr. ID: 21 **Organization:** *Not Specified*

Comment ID: 337441 **Organization Type:** Unaffiliated Individual
Representative Quote: Recreation is an authorized use, and management actions on the Iowa/Nebraska reach to support this use needs to be in the management plan.

Representative Quote(s):

Corr. ID: 28 **Organization:** *Not Specified*

Comment ID: 337446 **Organization Type:** Unaffiliated Individual

Representative Quote: The federal register notice for this EIS specifies the limit that this EIS will not look at ecosystem restoration. What will the Army Corps and Fish and Wildlife Service do if the science inputs to adaptive management indicate that ecosystem restoration is exactly what is needed to recover the endangered in the 51 of 67 other Missouri River fish species that are rare or in decline, as many of us believe to be the case?

Corr. ID: 31 **Organization:** *Not Specified*

Comment ID: 337450 **Organization Type:** Unaffiliated Individual

Representative Quote: With pressure from the energy industry to use Missouri River water for fracking, why isn't the Army Corps taking a more proactive approach in this study to address ecosystem restoration?

Corr. ID: 37 **Organization:** *Not Specified*

Comment ID: 337471 **Organization Type:** Unaffiliated Individual

Representative Quote: In view of the fact that certain interests, such as navigation, agriculture, intake, interests, and the state of Missouri, are powerful lobbyists who oppose any change in the river, is there going to be a sincere effort to analyze the ecological needs and conditions, and develop an alternative that will truly help the species and ecosystem, or is the Corps going to once again accommodate those powerful interests and produce a no action alternative with the rationale that what they have been doing is enough to preclude jeopardy? In the end, will there actually be any improvement for fish and wildlife, the T&E species, or will it once again be the status quo and another generation before any effort is made to improve the Missouri River?"

Corr. ID: 40 **Organization:** Coalition to Protect the Missouri River

Comment ID: 337698 **Organization Type:** Non-Governmental
Representative Quote: The U.S. Army Corps of Engineers (Corps) MRRMP problem statement provides an initial step toward a balanced approach leading to MRRP success.

Corr. ID: 40 **Organization:** Coalition to Protect the Missouri River

Comment ID: 337942 **Organization Type:** Non-Governmental

Representative Quote: Finally, I strongly urge the Corps to not succumb to the temptation to turn the MRRMP-EIS into a Missouri River Recovery Ecosystem Restoration Plan (MRERP) or Missouri River Authorized Purposes Study (MRAPS) by extension. By defunding these studies, Congress has shown there is no interest in the studies proceeding. It has been stated by Corps staff that the MRRMP-EIS is not to include the MRERP or MRAPS. Our stakeholders appreciate that position and urge the Corps to maintain it throughout the MRRMP-EIS process despite pressure to do otherwise.

Corr. ID: 55 **Organization:** *Not Specified*

Comment ID: 339109 **Organization Type:** Unaffiliated Individual



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Representative Quote: The proposed Missouri River Recovery Management Plan is based on an unscientific assumption that federal efforts can return the threatened and endangered species to a viable condition without addressing the health of the river itself. The Missouri River is the longest and most industrialized river in the nation. Ignoring the impact of past federal actions will produce three wasted years spent in preparing a narrow management plan that goes through the motions (the NEPA process) without any outcome different than what is operating today, 2013.

Corr. ID: 55 **Organization:** *Not Specified*

Comment ID: 339112 **Organization Type:** Unaffiliated Individual

Representative Quote: For example, the charge to the team preparing the Environmental Impact Study/Statement does not include a major and recent development affecting species and river recovery. The oil and gas industry has moved into the basin en masse in efforts to turn the basin into a Saudi Arabia on the American continent. The Army Corps reluctance to take the steps needed to protect native fish and their habitat from the tens of thousands of fracking wells that have invaded the basin in the last six years is clear testimony that the proposed management plan will be addressing 20th century problems, not 21st century problems. (See 2013, Diana M. Papoulias and Anthony L. Velasco) In the past Oil and gas played a small role in the basin, but they are now the thirstiest players in the region. What they do with the reservoir water is quite different than what hydropower does. The Oil and Gas industry must inject their polluted waters deep into the earth; no one else can use that water. Hydropower releases relatively clean water back into the system. While the states can assist in addressing the fracking invasion, it will be the leadership of the Corps that can demand water quality initiatives that are used throughout the basin.

Corr. ID: 59 **Organization:** U.S. DOI National Park
Service Midwest Region

Comment ID: 339250 **Organization Type:** Federal Government

Representative Quote: The Missouri River Recovery Plan needs to address these questions: What is the most ecologically dynamic state possible and how will this condition be achieved? How has the operation of the dams affected bio complexity, disturbance regimes, natural heterogeneity or non-equilibrium conditions, nutrient cycling, the role of large wood in rivers, and trophic interaction in aquatic ecosystems?

Corr. ID: 64 **Organization:** U.S. EPA Region 7,
Environmental Services Division

Comment ID: 339387 **Organization Type:** Federal Government

Representative Quote: Increasingly within the last five years, navigational interests outside the Missouri River basin have urged greater consideration for the management of Missouri River flows to support the operational needs of the Mississippi River, particularly from St. Louis to the confluence with the Ohio River. Pressure to restrict operational alternatives for the Missouri River in the future



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

could affect Management Plan outcomes. The EIS should recognize this factor in the assessment of the effects of alternatives and selection of the preferred alternative.

Corr. ID: 70 **Organization:** Ameren Corporation

Comment ID: 342042 **Organization Type:** Business

Representative Quote: 7. The scope of the "adaptive management" process shall be limited only to those alternatives specifically assessed as part of the EIS process. This will preclude events that may significantly impact social and economic interests beyond those evaluated.

8. Sideboards to establish boundary conditions of the adaptive management process shall be clearly defined as part of the final decision to prevent circumvention of congressionally "authorized purposes".

Corr. ID: 70 **Organization:** Ameren Corporation

Comment ID: 341606 **Organization Type:** Business

Representative Quote: 1. The process should recognize existing congressionally "authorized purposes" of the Missouri River System and obligations of the BSNP in addition to ESA considerations.

Concern ID:

49634

CONCERN STATEMENT:

Commenters suggested the Management Plan and EIS include the updated Principles and Standards by the Council on Environmental Quality.

APPROACH:

The process will be guided by the 1983 U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies, dated March 10, 1983 (P&G). The P&G describes four *accounts* established to facilitate evaluation and display the consequences of management actions or alternative plans. The national economic development (NED) account displays changes in the economic value of the national output of goods and services expressed in monetary units. The environmental quality (EQ) account displays nonmonetary consequences on significant natural and cultural resources. The regional economic development (RED) account registers changes in the distribution of regional economic activity. The other social effects (OSE) account registers plan effects from perspectives that are relevant to the planning process, but are not reflected in the other three accounts. In a general sense, the OSE account refers to how the constituents of life that influence personal and group definitions of satisfaction, well-being, and happiness are affected by some condition or proposed intervention.

Representative Quote(s):

Corr. ID: 61

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339296 **Organization Type:** Federal Government



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Representative Quote: The March 2013 "Principles and Requirements for Federal Investments in Water Resources" updated the national framework for water development projects across the country. That framework identifies six guiding principles which we believe are directly relevant to this effort. Those are:

1.) Healthy and Resilient Ecosystems- Federal investments in water resources should protect and restore the functions of ecosystems and mitigate any unavoidable damage to these natural systems.

2.) Sustainable Economic Development - Federal investments in water resources should encourage sustainable economic development through sustainable use and management of water resources ensuring both water supply and water quality.

3.) Floodplains - Federal investments in water resources should avoid the unwise use of floodplains and flood-prone areas and minimize adverse impacts and vulnerabilities in any case in which a floodplain/flood-prone area must be used. Unwise use includes actions or changes that have unreasonable adverse effects on public health and safety, or are incompatible with or adversely affect one or more floodplain functions that lead to a floodplain that is no longer self-sustaining.

4.) Public Safety -Threat to people from natural events should be assessed in both existing and future conditions, and ultimately in the decision-making process. Alternative solutions must avoid, reduce, and mitigate risks to the extent practicable and include measures to manage and communicate these risks.

5.) Environmental Justice - Agencies should ensure Federal actions identify any disproportionately high and adverse public safety, human health, Or environmental burdens of projects on Minority, Tribal or low-income populations. Alternatives should seek to avoid adverse effects to these communities, and include effective public participation throughout both project planning and decision-making.

6.) Watershed Approach - A watershed approach to analysis and decision-making facilitated evaluation of a more complete range of alternatives and is more likely to identify the best means to achieve multiple goals over the entire watershed. A watershed approach aides the proper framing of a problem by evaluating it on a system level to identify root causes and their interconnectedness to problem symptoms.

Corr. ID: 61

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Comment ID: 339297 **Organization Type:** Federal Government



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Representative Quote: The planning process should include these overarching principles in framing the purpose and need, formulating alternatives, developing impact assessment methods, and selecting a preferred plan or series of plans that best address the needs of the three federally listed species and fulfill the Corps' mitigation obligation.

Corr. ID: 65

Organization: Nebraska Game and Parks Commission

Comment ID: 340197 **Organization Type:** State Government

Representative Quote: When the 1983 Principles and Standards were updated in 2013 by the Council on Environmental Quality they changed the national framework for water development projects across the country (CEQ 2013). This framework identified six guiding principles which are directly relevant to the Missouri River mitigation work. They are:

1.) Healthy and Resilient Ecosystems- Federal investments in water resources should protect and restore the functions of ecosystems and mitigate any unavoidable damage to these natural systems.

2.) Sustainable Economic Development- Federal investments in water resources should encourage sustainable economic development through sustainable use and management of water resources ensuring both water supply and water quality.

3.) Floodplains- Federal investments in water resources should avoid the unwise use of floodplains and flood-prone areas and minimize adverse impacts and vulnerabilities in any case in which a floodplain/flood-prone area must be used. Unwise use includes actions or changes that have unreasonable adverse effects on public health and safety, or are incompatible with or adversely affect one or more floodplain functions that lead to a floodplain that is no longer self-sustaining.

4.) Public Safety - Threat to people from natural events should be assessed in both existing and future conditions, and ultimately in the decision-making process. Alternative solutions must avoid, reduce, and mitigate risks to the extent practicable and include measures to manage and communicate these risks.

5.) Environmental Justice- Agencies should ensure Federal actions identify any disproportionately high and adverse public safety, human health, or environmental burdens of projects on Minority, Tribal or low-income populations. Alternatives should seek to avoid adverse effects to these communities, and include effective public participation throughout both project planning and decision-making.

6.) Watershed Approach- A watershed approach to analysis and



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

decision-making facilitated evaluation of a more complete range of alternatives is more likely to identify the best means to achieve multiple goals over the entire watershed. A watershed approach aides the proper framing of a problem by evaluating it on a system level to identify root causes and their interconnectedness to problem symptoms.

Corr. ID: 65 **Organization:** Nebraska Game and Parks Commission

Comment ID: 340199 **Organization Type:** State Government
Representative Quote: The MRRMP and EIS process should include these overarching principles in framing the purpose and need, formulating alternatives, developing impact assessment methods, and selecting a preferred plan or series of plans that best address the needs of the three federally-listed species and fulfill the Corps' mitigation obligation.

Corr. ID: 73 **Organization:** The Nature Conservancy

Comment ID: 343621 **Organization Type:** Conservation/Preservation

Representative Quote: Our country has reached a critical point in how we plan and manage investments in our nation's water resources. On the one hand, changing demands for water and the impacts of changing weather patterns are making sound water management more important than ever. At the same time, fiscal limitations and the large backlog of authorized funding for projects require more efficient and effective approaches to selecting, designing, funding and implementing water resource investments. These approaches should use good science and a watershed-scale perspective to balance the multiple missions of the Army Corps of Engineers and should take advantage of the power of natural systems to meet the nation's water resource needs in the most cost-effective manner.

The Nature Conservancy believes the best way to achieve this efficient and effective approach is to apply the six "Guiding Principles" captured in the March 2013 updated framework for "Principles and Requirements for Federal Investments in Water Resources" to the MRRMP and EIS. The Conservancy recognizes application of these principles at this time is not possible given interagency guidance is in draft form and prohibition of implementation through appropriations, but given the extended timeline for these effort we would encourage their application at the earliest phase of planning possible.

Concern ID:
CONCERN
STATEMENT:

49812

One commenter expressed concern about the amount of funds being expended towards interior least tern recovery efforts on the Missouri River. Another commenter expressed concern about the funding of the Yellowstone Intake diversion dam given the potential ongoing threats of oil and gas development.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

APPROACH:

Annual funding for the Missouri River Recovery Program is made through appropriations by Congress. The Corps executes funds to accomplish the least tern reasonable and prudent alternatives as documented in the U.S. Fish and Wildlife Biological Opinion.

The Corps is a joint lead agency with the Bureau of Reclamation (BOR) for the Intake Dam Modification Project. Section 3109 of the 2007 Water Resources Development Act authorizes the Corps to participate in this project with the BOR.

Representative Quote(s):

Corr. ID: 49

Organization: American Bird Conservancy

Comment ID: 337718 **Organization Type:**

Conservation/Preservation

Representative Quote: Currently, programs on the Missouri River for the 3 listed species considered for CEM development are so costly that these 3 species are regularly in the top 10 endangered species nationwide for federal expenditures and this ranking is driven by Corps expenditures on the Missouri River. For Interior Least Terns, this expenditure is in no way scaled to their degree of imperilment. While the reasons for these expenditures may be clear to program administrators on the Missouri River, it is confusing to conservation professionals from outside the Missouri basin, or the general public, to see USFWS expend this kind of effort and resources (through the Corps of course) on an endangered species that is doing quite well when species that are in much greater need of conservation attention are so starved for resources. This type of imbalanced attention and spending directed towards a small number of taxa runs the risk of making ESA implementation appear "arbitrary and capricious" or as if the Act is being used as a regional-job creation program. These perceptions do not strengthen public support for the ESA or in Congress. Over the next few years, in response to lawsuits forcing listing decisions, several new species that are truly imperiled will be added to the endangered species list. Against this backdrop, it will seem even more bizarre to be tipping federal expenditures towards the Missouri River for a species like Interior Least Tern, where the listed population is in much better shape than many other species (both on and off the list), and when a very small fraction of its population occurs on the Missouri River.

Corr. ID: 55

Organization: *Not Specified*

Comment ID: 339111 **Organization Type:** Unaffiliated Individual

Representative Quote: Why spend tens of millions of dollars on the Yellowstone River fish passage and then forego a regulatory regime that protects fish in the Williston Reach of the Missouri River.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Concern ID: 49815
CONCERN STATEMENT: One commenter suggested a greater focus on culturally significant species along the Missouri River.

APPROACH: The scope of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) is to identify a suite of actions that would comply with the Biological Opinion and avoid jeopardy of the three listed species. Culturally significant species would be considered in the MP-EIS to the extent that they have potential to be affected by any alternatives identified for consideration.

Representative Quote(s): **Corr. ID:** 47 **Organization:** Three Affiliated Tribes
Comment ID: 337708 **Organization Type:** Tribal Government
Representative Quote: Another question I have, we talk about, you know, the T and E season and everyone says, you know, the plover and the tern and the sturgeon, but what about the culturally significant species? Is there anything in the future to actually get those species from tribes and to try and work more with those? Because I -- I understand, you know, the T and E species are federally listed, but there are a lot of culturally significant species along the river that are important to the tribes and I would like just to see more involvement with those because a lot of those species -- they don't get any recognition, you know, and the habitat is being destroyed. Like we had a lot of cottonwoods back, you know, historically. We don't have any of those anymore. Those -- our bald eagles are there, our bald eagle habitat and all of that and there's a lot of edible plants that our tribes use that aren't there.

Concern ID: 49827
Representative Quote(s): **Corr. ID:** 47 **Organization:** Three Affiliated Tribes
Comment ID: 337706 **Organization Type:** Tribal Government
Representative Quote: What I'm saying here, I was down in Pierre after that, you know, and there was this -- right under the bridge between Pierre and Fort Pierre there was this huge sandbar that was a wildlife refuge and it was gone. Did that affect any of the habitat and/or well-being of the plover and all of that? Did that do anything to that? Did that affect the plovers and all? Is that the reason why the opinion was amended?

That was really a nice little habitat area there. My wife goes with me when we travel, and she'd always go down there when we were in Pierre, and she was going to go check the refuge out and it was gone. You know, she was freaked out.

PN5000 - Purpose And Need: Regulatory Framework
Concern ID: 49451



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

CONCERN STATEMENT:

Commenters suggested the EIS include all federal and state programs that affect the Missouri River and describe their effects on species and habitat.

APPROACH:

Other programs affecting the resource topics identified during the scoping process will be included in the cumulative consequences analysis for the alternatives identified for consideration.

Representative Quote(s):

Corr. ID: 64 **Organization:** U.S. EPA Region 7, Environmental Services Division
Comment ID: 339377 **Organization Type:** Federal Government
Representative Quote: The EIS should describe all existing Federal and State programs affecting river resources and the current effect of these programs on ESA-protected river species, native species and river habitat. Further, the EIS should describe how these existing programs might shape the effectiveness of the Management Plan itself. How well this Management Plan achieves the objectives identified and incorporated within 'project purpose' is critically dependent upon the regulatory and resource management milieu created by these existing other programs and authorities.

Concern ID:
CONCERN STATEMENT:

49736
One commenter inquired if the implementation of an alternative management strategy was possible given the legal standing of the current BiOp and its highly prescriptive RPAs for jeopardy avoidance.

APPROACH:

Implementation of certain elements of the reasonable and prudent alternative included within the U.S. Fish and Wildlife Service's (USFWS's) 2000 Biological Opinion and 2003 Amendment to the 2000 Biological Opinion constitute federal actions that require compliance with the National Environmental Policy Act (NEPA). In accordance with 40 CFR 1502.4 (c), the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) will evaluate all proposals or parts of proposals similar in nature such that, in effect, they represent a single course of action. The MP-EIS will assess and, where appropriate, supplement or update prior NEPA analysis made pursuant to the requirements listed above. The MP-EIS will assess the cumulative effects and alternatives to accomplish the purposes of the USFWS BiOp to avoid jeopardy of the pallid sturgeon, least tern, and piping plover.

The Corps and the USFWS will continue the Section 7 process informally until such time that formal consultation is required and appropriate.

Representative

Corr. ID: 49 **Organization:** American Bird Conservancy



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Quote(s):

Comment ID: 337722 **Organization Type:**
Conservation/Preservation

Representative Quote: Finally, while there are many potential paths to "jeopardy avoidance," the current USFWS' BiOp contains a set of highly prescriptive "means objectives" for jeopardy avoidance on the Missouri River, codified as very specific Reasonable and Prudent Alternatives (RPAs). Some of these RPAs (e.g., sandbar creation, shallow-water habitat creation) are quite costly and have massive footprints (in fact, the Sandbar Habitat Creation RPA required its own Programmatic Environmental Impact Statement [Corps 2011]). Given the high costs of existing RPAs and the legal obligation to implement them under Section 7(a)(2), these particular management actions have dominated Corps management strategies on the Missouri River over the past decade. While I believe that much more effective and cost-effective management plans could be developed if these constraints were lifted, it is my understanding that they have not been (e.g., the Corps is still operating under jeopardy BiOp for all 3 species). Is the implementation of an alternative management strategy really possible given the legal standing of the current BiOp?

Concern ID:
CONCERN
STATEMENT:

49737
[One commenter recommended looking into the applicability of the Gulf Coast Restore Act.](#)

APPROACH:

[The applicability of the recommended reference will be reviewed and considered during the preparation of the Missouri River Recovery Management Plan and Environmental Impact Statement \(MP-EIS\).](#)

Representative
Quote(s):

Corr. ID: 51 **Organization:** Mo Valley Waterfowlers Association

Comment ID: 338237 **Organization Type:**
Conservation/Preservation

Representative Quote: Review Vanishing Paradise Int. Gulf Coast Restore Act.

Corr. ID: 51 **Organization:** Mo Valley Waterfowlers Association

Comment ID: 338239 **Organization Type:**
Conservation/Preservation

Representative Quote: 5. Are there other efforts ongoing or planned that should be considered when developing the Management Plan and Environmental Impact Statement?

Answer: Gulf Coast Restore Act, Vanishing Paradise Int.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Concern ID: 49743
CONCERN STATEMENT: A commenter expressed support for the efforts of the Corps and USFWS on Missouri River recovery stating that their objectives are consistent with those of the Clean Water Act. Another commenter suggested the EIS include human considerations in alternatives development and balance both human and species interests.

APPROACH: The Corps has been coordinating with the Missouri River Recovery Implementation Committee (MRRIC) to include human considerations into the process. The Corps has also been coordinating with state and federal agencies as well as Tribes. The human considerations topics include the authorized purposes. These resources will be described in the affected environment chapter of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) and consequences will be described in the environmental consequences chapter.

Representative Quote(s): **Corr. ID:** 40 **Organization:** Coalition to Protect the Missouri River

Comment ID: 337478 **Organization Type:** Non-Governmental

Representative Quote: The MRRIC has recognized that addressing species needs and maintaining all authorized purposes cannot be a mutually exclusive endeavor. Though the impetus of the MRRIC is on recovery-related issues, the committees charter clearly articulates their belief in a balanced approach to species recovery through the following language...MRRICs wisdom regarding a balanced approach to species recovery is paramount to ongoing support for the MRRP. Human considerations must be extensively taken into account as alternatives are identified in this process. The success of the MRRP will be determined by the degree to which human and species interests are balanced. Win-win alternatives are strongly encouraged in order that all interests are best able to support future management actions...

Stewardship of this planet is the responsibility of all people. Environmental, social, economic and cultural stewardship is possible while using a multi-lateral approach subject only to win-win alternatives. Consequently, while species objectives are considered, I strongly urge the Corps to follow through with the intent of their problem statement by carefully analyzing and accounting for all human considerations brought to their attention during this process.

Corr. ID: 64 **Organization:** U.S. EPA Region 7, Environmental Services Division

Comment ID: 339368 **Organization Type:** Federal Government

Representative Quote: The EPA has and continues to support the efforts of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service and its other Federal and State partners in



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

reconnecting the Missouri River and its tributaries to their floodplains, restoring a more natural river hydrology, creation of critical habitat necessary to the recovery of threatened and endangered species, restoring native aquatic species, reducing invasive species impacts and comprehensively creating a sustainable Missouri River environment. These objectives are consistent with the sole objective of the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The complex nature of a floodplain river and its many unique biological, hydrological and geomorphologic components requires regulatory approaches which challenge government's ability to balance benefits and impacts. However, the sustainable management of the nation's natural resources for the benefit of future generations should be the only measure of our success.

RF1000 - References: General Comments

Concern ID: 49455

CONCERN STATEMENT: Commenters provided a number of references for inclusion in the study.

APPROACH: As applicable, the recommended references will be reviewed for use during the planning process and utilized as appropriate. The references become a part of the administrative record for this Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS).

Representative Quote(s):

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337744 **Organization Type:** Conservation/Preservation

Representative Quote: References (continued)

U.S. Army Corps of Engineers (USACE). 2003a. Missouri River Fish and Wildlife Mitigation Project Final Supplemental Environmental Impact Statement and Record of Decision. Kansas City and Omaha Districts.

U.S. Army Corps of Engineers (USACE). 2004. Missouri River Master Water Control Manual Review and Update Final Environmental Impact Statement (FEIS). Northwest Division, Omaha District.

U.S. Army Corps of Engineers (USACE). 2004a. 2004 Annual Shallow Water Habitat Report, Environmental Assessment and Finding of No Significant Impact. Kansas City District.

U.S. Army Corps of Engineers (USACE). 2005. Cumulative Environmental Impact Statement for Bank Stabilization. Appendix C:



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Bank Stabilization Analysis: Draft Report. Northwestern Division. Omaha District.

U.S. Army Corps of Engineers (USACE). 2007. Missouri River mainstem reservoir system: system description and regulation. Page 54 pp.

U.S. Army Corps of Engineers (USACE). 2010. Cottonwood Management Plan/Programmatic Environmental Assessment Proposed Implementation of a Cottonwood Management Plan Along Six Priority Segments of the Missouri River. Omaha District.

U.S. Army Corps of Engineers (USACE). 2011. Final Programmatic Environmental Impact Statement for the Mechanical and Artificial Creation and Maintenance of Emergent Sandbar Habitat in the Riverine Segments of the Upper Missouri River (May 2011)

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337743 **Organization Type:**
Conservation/Preservation

Representative Quote: References

Akçakaya, H. R., J. L. Atwood, D. Breininger, C. T. Collins, and B. Duncan. 2003. Metapopulation dynamics of the California least tern. *Journal of Wildlife Management* 67:829-842.

Buenau, K. E., T. L. Hiller, and A. J. Tyre. 2013. Modelling the Effects of River Flow on Population Dynamics of Piping Plovers (*Charadrius Melodus*) and Least Terns (*Sternula Antillarum*) Nesting on the Missouri River. *River Research and Applications*: published online, July 26, 2013.

Lott, C. A., and R. L. Wiley. 2012. Effects of dam operations on Least Tern nesting habitat and reproductive success below Keystone Dam on the Arkansas River. Page 113. US Army Corps of Engineers, Engineer Research and Development Center, Dredging Operations and Technical Support Program. ERDC/EL CR-12-4.

Lott, C.A., R.L. Wiley, R.A. Fischer, P.D. Hartfield, and J.M. Scott. 2013. Interior Least Tern (*Sternula antillarum*) breeding distribution and ecology: implications for population-level studies and the evaluation of alternative management strategies on large, regulated rivers. *Ecology and Evolution* 3(10): 3613-3627.

U.S. Army Corps of Engineers (USACE). 1978. Missouri River Bank Stabilization and Navigation Project, Final Environmental Statement, Continuing Construction and Maintenance. Missouri River Division, Omaha, Nebraska.

U.S. Army Corps of Engineers (USACE). 1981. Missouri River Bank Stabilization and Navigation Project Final Feasibility Report and Final



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Environmental Impact Statement for the Fish and Wildlife Mitigation Plan. Kansas City District.

U.S. Army Corps of Engineers (USACE). 1987. Missouri River Fish and Wildlife Mitigation Project Final Environmental Impact Statement and Record of Decision. Kansas City and Omaha Districts.

USFWS. 2003. Amendment to the 2000 Biological Opinion on the operation of the Missouri River main stem reservoir system, operation and maintenance of the Missouri River bank stabilization and navigation project, and operation of the Kansas River reservoir system. Page 321 pp.

Corr. ID: 59 **Organization:** U.S. DOI National Park Service Midwest Region

Comment ID: 339262 **Organization Type:** Federal Government

Representative Quote: 17. Include information from the Government Accountability Office (GAO) report (GAO-09-224R Missouri River Navigation)

Corr. ID: 66 **Organization:** Missouri River Dredgers Group

Comment ID: 340222 **Organization Type:** Business

Representative Quote: The members of the Dredgers Group, consistent with the requirements under NEPA as directed by the Corps of Engineers, paid for an EIS to be carried forward by the Corps of Engineers which was completed in 2011. That document addressed numerous issues relating to the lower BSNP and should be a worthy reference document relating to this EIS effort and Management Plan.

Corr. ID: 68 **Organization:** Law Offices of Robert J. Vincze

Comment ID: 341604 **Organization Type:** Business

Representative Quote: Footnotes:

1 See Coastal and Hydraulics Laboratory, Engineer Research and Development Center (ERDC), at CHL-Info@erdc.usace.army.mil; see also <https://swwrp.usace.army.mil>.

2. Recovery Plan for the Pallid Sturgeon (*Scaphirhynchus a/bus*), USFWS, November 7, 1993.

3. Turbidity levels where pallid sturgeon have been found in South Dakota range from 31.3 Nephelometric turbidity units (NTU) to 137.6NTU (J. Erickson, pers. comm. 1992); Recovery Plan at page 8.

4 The Recovery Plan sets out the detriments of reduced turbidity to the pallid sturgeon:

The turbidity caused by suspended sediment also provided the pallid



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

sturgeon and other native fish, adapted to living in a nearly sightless world, with cover while moving from one snag or undercut bank to another. Today, water clarity has increased dramatically, and this essential cover is gone. Under such conditions, predation by sight ending predators, such as northern pike (*Esox lucius*), walleye (*Stizostedion vitreum*), and smallmouth bass (*micropterus dolomieu*), can be expected to significantly impact native species not equipped by evolution with good eyesight.

It is also suspected that increased clarity of the Missouri River affected food availability by changing species composition and by making it more difficult for pallid sturgeon, and other native species, to capture prey in the clearer water environment. In the Missouri River, pelagic planktivores and sight-feeding carnivores have increased abundance, whereas species specialized for life in the turbid, predevelopment river (like the pallid sturgeon) have decreased in abundance (Pflieger and Grace 1987). This change in community structure is less apparent where changes in the natural hydrograph, temperature regime, and turbidity are less pronounced. Recovery Plan, page 12.

Concern ID: 49729
CONCERN STATEMENT: Commenter recommended referencing the USFWS Interior Least Tern 5-year review in alternatives development.

APPROACH: The suggested reference will be considered in development of the effects Analysis for the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS).

Representative Quote(s): **Corr. ID:** 59 **Organization:** U.S. DOI National Park Service Midwest Region
Comment ID: 341993 **Organization Type:** Federal Government
Representative Quote: 11. Include USFWS Interior Least Tern 5-year Review results in alternatives

TC1000 - Resources of Concern - Tribal

Concern ID: 49458
CONCERN STATEMENT: A commenter provided information about resources of concern that should be considered in the Management Plan and EIS, including the locations of burials and graves along the Missouri River.

APPROACH: The existing conditions of tribal resources will be described with enough detail within the affected environment chapter of the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) to adequately address consequences in the environmental consequences for the range of alternatives considered. Specific details provided during scoping will be



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

considered in development of the affected environment chapter.

Representative Quote(s):

Corr. ID: 47

Organization: Three Affiliated Tribes

Comment ID: 337704 **Organization Type:** Tribal Government

Representative Quote: Well, I guess what I'm getting at here -- I guess I'm kind of going at it in a roundabout way here -- you say that there's going to be creation of habitat north of Gavin's Point Dam and is that in the progress right now or is it proposed?

Yeah. What I'm getting at here is, you know, from Fort Peck all the way down to Sioux City, you know, the Three Affiliated Tribes has got graves all along that riverbank, you know, some that are known, some that are not known. And when you're talking about creation of habitat, heavy equipment, ground disturbance and all of that, my concern is graves. You're going to turn up some graves and stuff, you know, along that, because -- Wait a minute -- our graves are not just confined to the reservations. They're all the way along.

Okay. Now, if you've done that to the north where the river has -- like let's say just above Gavins Point and all of that, the river, of course, is a lot wider than the original channel was simply because of the dams and the backup. Now you're doing that in the middle. The original riverbanks are in the middle. There are burials along those original riverbanks under the water. So that's a concern there, too, for us. Who knows, you might -- if you're dredging, you might bring somebody up out in the mid channel where the old channel was.

TC4500 - Tribal involvement in project

Concern ID:

49464

CONCERN STATEMENT:

Commenters suggested Corps communicate with staff rather than Tribal leadership exclusively because of changes in leadership due to elections.

APPROACH:

The Corps will offer opportunities for Tribes and members to participate in the Missouri River Recovery Management Plan and Environmental Impact Statement (MP-EIS) process.

Representative Quote(s):

Corr. ID: 43

Organization: Crow Tribe

Comment ID: 337545 **Organization Type:** Tribal Government

Representative Quote: One thing to keep in mind with the -- I don't know how it is in other tribes, but in our tribe, when there's an administration change, a lot of information don't get passed on. Because I know the guys that used to work in the Cultural, I've worked with them before on making maps for them. It sounds like it didn't get passed on to Emerson, so...Burdick. Do you guys know

Burdick Two Leggins? He was the last administration. A lot of his stuff probably didn't get passed on.

Corr. ID: 44 **Organization:** Kickapoo Tribe

Comment ID: 337553 **Organization Type:** Tribal Government

Representative Quote: Our tribe leadership changes hands a lot. We have an election every year. And service on tribal council is two years.- So it's difficult to maintain political integrity.- Even if you do contact somebody that person may not be - the next person might be very interested but never got the letter.- So it's a challenge.- The tribal has its government set up that way. We have an election coming up in October. Could have a dramatic impact on the issue. The chairman is only chosen by the tribal council once they are seated. So it's not -- I think that's how all the offices -- they are chosen by the tribal council so they run as council members.- The general council puts them in, and between them they decide who does what.- Our current tribal chairman is up for reelection.- If he doesn't make it back in we would obviously have a change. Yeah. It's been a challenge for planning issues as well because we have one council come in and do planning documents and things like that, say we're going to do something this way and then the election, the new council comes in, we don't want to follow that.- So all the effort and planning is put on the shelf.- We have that kind of challenge. Sometimes it's good to almost be connected to tribal staff for consistency. Now staff changes.-But administrations too. Sometimes to maintain the consistency with a tribe like ours which has so much turnover and leadership -- basically you would be coming back every year so just introduce yourself to the council.

Z1000 - CEM and Objectives Comments

Concern ID: 49754

CONCERN STATEMENT: Comments ranged from requesting clarification on the review process, the models and narratives to clarification of terms used in the narrative.

APPROACH: Comments received were provided to an effects analysis team for their consideration. All input will be evaluated and considered in development of the models, objectives, and other effects analysis products.

Representative Quote(s): **Corr. ID:** 26 **Organization:** *Not Specified*

Comment ID: 337442 **Organization Type:** Unaffiliated Individual
Representative Quote: Please explain the note on the pallid sturgeon objectives document. Why is there an emphasis on jeopardy avoidance and not recovery? What does the Corps view as its full responsibility in this regard?"

Corr. ID: 35 **Organization:** *Not Specified*

Comment ID: 337461 **Organization Type:** Unaffiliated Individual

Representative Quote: The pallid sturgeon species objectives does not mention shallow water habitat needs, though Emergent Sandbar Habitat is mentioned in the objectives for both of the birds. Are the shallow water habitat target requirements specified in the 2000 BiOp and amended 2003 BiOp assumed to have as much importance as maintaining all congressionally authorized purposes? It is difficult to know without the CEM and ecological requirements narrative docs being placeholders only for pallid sturgeon.

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337601 **Organization Type:** University/Professional Society

Representative Quote: Data Sources comment line #57 (under Egg-Chick survival, RPA-Flow Manipulation): "But earlier it was said that this data could lead to 'biases' right? Why not here? Now that there is no monitoring of take in certain regions, is this really an ongoing data source? For that matter, where is the description of what constitutes a 'Data Source' is it past, present, or future?"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337587 **Organization Type:** University/Professional Society

Representative Quote: Description comment line #42 (under Predation, Adult survival): "TBD? In the description of the mechanism?"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337597 **Organization Type:** University/Professional Society

Representative Quote: Notes comment line #51 (under Invertebrate Prey Availability, agonistic behavior): "Since the reviewers were not present in the room while this discussion was happening, these notes are particularly confusing. I'm sure they made sense to you but its not clear to me.

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337583 **Organization Type:** University/Professional Society

Representative Quote: Key Variables/Metrics comment line #40 (under Predation, Transition from egg to chick): "Number of eggs taken by predators? I don't know why this is TBD"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337584 **Organization Type:** University/Professional Society

Representative Quote: Importance comment line #40 (under Predation, Transition from egg to chick): "So importance to what? The overall process, demography? That is really not clear. Nest loss has little to do with the overall demography of these populations - see the NUMEROUS PVAs that have been done on the subject. If you mean it's importance in the direct connection, then I would argue that natural nest loss is almost always attributable to predation, regardless of the size of the population"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337572 **Organization Type:** University/Professional Society

Representative Quote: Data Sources comment #26 (under ecological response - Area of Suitable Nesting Habitat, immigration/emigration): Why is there a question mark here. VT has been collecting demographic data and providing estimates of emigration and immigration in relationship to available habitat for 10 years. Not to mention, you cited papers that certainly have this data.

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337570 **Organization Type:** University/Professional Society

Representative Quote: Data Sources comment line #25 (under ecological response - Area of Suitable Nesting Habitat, nest density): "Biased how?"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337592 **Organization Type:** University/Professional Society

Representative Quote: Notes comment line #46 (under Agonistic Behavior, No. chicks): "Does this mean move the entire node within Chick survival? Unclear. If that is the case it's likely ok to do that. Agonistic behavior is probably an unimportant factor regardless of the population size. The number of chicks that were found dead"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337596 **Organization Type:** University/Professional Society

Representative Quote: Data Sources comment line #49, Excel line #56 (under Invertebrate Prey Availability, No. adults): "What does a '?' mean in data sources?"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337557 **Organization Type:** University/Professional Society

Representative Quote: 3. With the exception of 'Importance,' nowhere was it described to me what the definitions of these columns are. 'The Reviewers_Message ver6-2' does not define them (again, with the exception of Importance). I was often very confused how the Uncertainty was defined as one or the other value, the same was true of References and Data Sources. What constitutes a reference? Sometimes it was published literature (a lit cited would help me to evaluate also), but sometimes just a name? Is that a personal communication or was it an incomplete citation (of which there were many in this spreadsheet). Perhaps this is a typical format used for other government exercises, but I am not particularly familiar with it. There was some description of the final product, but not enough for me to really see what my role in this process was.

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337590 **Organization Type:** University/Professional Society

Representative Quote: Direction of Change comment line #43 (under Predation, RPA-Vegetation Management): "Do you have any



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

citation for this?"

Corr. ID: 62

Organization: Bureau of Reclamation Great Plains Regional Office

Comment ID: 338990 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N3): General:

"Least Tern Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System."

Corr. ID: 62

Organization: Bureau of Reclamation Great Plains Regional Office

Comment ID: 338999 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N1): General:

"Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System."

Corr. ID: 62

Organization: Bureau of Reclamation Great Plains Regional Office

Comment ID: 339000 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N2): General:

"Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Corr. ID: 62

Organization: Bureau of Reclamation Great Plains Regional Office

Comment ID: 338991 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N4): "General:

"Least Tern Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to."

Corr. ID: 62

Organization: Bureau of Reclamation Great Plains Regional Office

Comment ID: 343180 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N3): General:

"Piping Plover Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System."

Commenter's Notes (Line N4): General: "Piping Plover Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Corr. ID: 62

Organization: Bureau of Reclamation Great Plains Regional Office

Comment ID: 338988 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N1): "Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on mainstem dam operations."



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339002 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N3): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 2. Sub-objective 1: Close coordination between the Missouri River system and the Mississippi system is explicitly mentioned, but tributaries will not be evaluated. An explanation of the Corp's decision to exclude the Yellowstone River system (specifically, ongoing activities at the Intake Diversion Dam) would be helpful in understanding the rationale to limit the scope of the plan/analysis.

Corr. ID: 63 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339324 **Organization Type:** Federal Government

Representative Quote: 2. Piping Plover Objectives for the Missouri River Recovery Program

- Page 1. Paragraph 3. Bullet 2:

Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System."

- Page 1. Paragraph 3. Bullet 4:

Request clarification on what this objective refers to.

Corr. ID: 63 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339321 **Organization Type:** Federal Government

Representative Quote: - Upper Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects Models- all life stages:

"Mainstem Dam Operation and Placement" is identified as a "Driver."

Please provide further information on why the "placement" of mainstem dams is considered a driving factor. Suggest deletion of "placement" from the driver heading description.

Corr. ID: 63 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339322 **Organization Type:** Federal Government

Representative Quote: - Lower Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects

Models- all life stages: "Mainstem Dam Operation and Location" is identified as a "Driver." Please provide further information on why the "location" of mainstem dams is considered a driving factor. Suggest deletion of "location" from the driver heading description.

Corr. ID: 63 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339318 **Organization Type:** Federal Government

Representative Quote: 1. Pallid Sturgeon Objectives (Upper and Lower Basin) for the Missouri River Recovery Program

- Page 1. Paragraph 3. Bullet 2: Request clarification on this

objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System."



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

- Page 1. Paragraph 3. Bullet 4:
Request clarification on what this objective refers to.
- Page 2. Sub-objective 1: Close coordination between the Missouri River system and the Mississippi system is explicitly mentioned, but tributaries will not be evaluated. An explanation of the Corp's decision to exclude the Yellowstone River system (specifically, ongoing activities at the Intake Diversion Dam) would be helpful in understanding the rationale to limit the scope of the plan/analysis.

Concern ID: 49759
CONCERN STATEMENT: Commenters provided recommendations and suggestions on how to improve model elements, strategy and content of models. Some comments identified concerns about components and level of detail included in the models.

APPROACH: Comments received were provided to an effects analysis team for their consideration.

Representative Quote(s):

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337594 **Organization Type:** University/Professional Society

Representative Quote: Notes comment line #48 (Under Immigration/Emigration, number of adults): "Saying that there are too many unbanded birds to determine immigration is categorically false. See Cohen et al. 2009, Wilcox, etc. for studies that managed to determine immigration through mathematical means. Also, VT has repeatedly presented estimates of immigration over the years."

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337567 **Organization Type:** University/Professional Society

Representative Quote: Uncertainty comment line #23 (related to Flows - area of suitable foraging habitat): "For the same reasons I mentioned above" (Note: referring to previous comment: "If you raise the water, there are less birds on the reservoir, if you lower there are more. You have 25 years of data showing thing. I think this is anything but uncertain. How many birds did you have on Oahe and Sak in 2011?")

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337568 **Organization Type:** University/Professional Society

Representative Quote: Uncertainty comment line #25 (under ecological response - Area of Suitable Nesting Habitat, nest density): "How is the relationship between area and density uncertain ever? Density = N/area, regardless of N, density is affected by area."

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337573 **Organization Type:** University/Professional Society

Representative Quote: Data Sources comment line #28 (under ecological response - Area of Suitable Nesting Habitat, RPA-ESH Construction): "Again, I don't deny it might be biased, but it's not at all informative to just say that. You need to provide reasons why."

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337586 **Organization Type:** University/Professional Society

Representative Quote: Importance comment line #41 (under Predation, Transition from chick to fledgling): "See above, just because predation isn't high when density is low, doesn't make predation of low importance to the transition from a chick to a fledgling" (Note: Referring to Importance comment on line #40: "So importance to what? The overall process, demography? That is really not clear. Nest loss has little to do with the overall demography of these populations - see the NUMEROUS PVAs that have been done on the subject. If you mean it's importance in the direct connection, then I would argue that natural nest loss is almost always attributable to predation, regardless of the size of the population")

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337576 **Organization Type:** University/Professional Society

Representative Quote: Uncertainty comment line #31 (under Areas of Suitable Foraging Habitat, nest density): "Again, how can a direct relationship have a high uncertainty?"

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337555 **Organization Type:** University/Professional Society

Representative Quote: 2. I realize that you were hoping for external review to provide you with some of the pertinent literature, but much of this document ignored fairly easily accessed literature on piping plovers. I think it is incumbent on your expert panel to provide a strong basis for the model you are presenting, and that was clearly lacking from this document. I don't think it is appropriate to ask outside reviewers to be your research librarians. Without a basis in the literature, it was very difficult for me to evaluate the rankings of importance and uncertainty in this model. One of the purposes of this review was 'To ensure we have gathered the complete body of available science', and I think in that respect this model has failed. I know there are numerous resources out there for the team to use. For one, I believe that the USACE contracted a compendium of literature in the last 10 years, it would seem that would be a good place to start looking for some of this literature. I realize that some of the piping plover literature deals with population off of the Missouri River, but I think it is incumbent on your team to synthesize that literature here, and to apply what can be applied (for example, there is a great deal known about the relationship between food and productivity - that relationship should not be drastically different on the river though the specific mechanism are). Leaving the references

area blank suggests that nothing is known about the subject, not just that nothing is known specific to the river. There is not a single reference in the 'Species Performance' section of the model and yet the uncertainty is 'low' across the board - There is plentiful literature on the subject, and it's likely why the uncertainty was low, but why no citations if you are so certain?

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337566 **Organization Type:** University/Professional Society

Representative Quote: References comment line #22 (related to Flows - area of suitable nesting/brood-rearing habitat): "How are you qualifying a reference? If it's not available, isn't it a potential data source? This goes to times when people's names are placed in the reference section - what does that mean exactly?"

Also - why aren't you referencing all of the documentation of nest numbers for the last quarter century that were collected by the Corps?"

Corr. ID: 49

Organization: American Bird Conservancy

Comment ID: 337731 **Organization Type:**

Conservation/Preservation

Representative Quote: Management actions must be defined explicitly to understand effects of management on species
Greater specificity is needed to link specific management actions to specific effects on endangered species. For example, the model component "dam operations" does not sufficiently represent the variety of operational scenarios that occur regularly and are codified in rule curves that balance multiple use objectives. Additionally, not all dams are operated the same way, which results in a different range of operational modes for different dams and two dams may have different operational strategies under similar circumstances. Vague categories of effects like "dam operations" should be broken down into discrete operational modes for effects assessment (e.g., daily hydropower releases, flood control releases, flood control retention within the pools, navigation maintenance releases, etc.). Each of these modes of operation have different effects on pool elevations, discharge rates from different dams, sediment transport, and consequently, on physical habitat conditions, ecological responses, or species performance variables.

I would suggest that each person working on this conceptual model take an afternoon to read USACE (2007), a short and clearly articulated document written by USACE water control personnel that describes each of the major components of dam operations in detail. This document distills much of the information in the Master Water Control Manual EIS, which most regulators should at least be familiar with (USACE 2004). The specific operational modes and water control actions that are articulated in this document should replace the oversimplified category of "dam operations." The CEM must have this level of detail for the analysis to be specific enough to suggest

specific changes in dam operations that might be made to benefit species and then to evaluate the expected consequences of these changes in a modeling environment. I'm not sure if similar summary documents to USACE (2007) are available to describe in-channel engineering actions, but these actions have been described in detail in the EIS for the bank stabilization project (USACE 2005) and the PEIS for the ESH creation program (USACE 2011). In order to utilize the best available information, modelers and species biologists should become more familiar with these documents and the important details therein.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337735 **Organization Type:**
Conservation/Preservation

Representative Quote: Clearly, in terms of understanding the effect of dam operations, particularly releases that result in high flows, the elevation of nesting habitat where ILT and PIPL occur is far more important than the acreage of ESH counted based on 2-D photo imagery analysis (which tends to encompass a wide range of elevations, many of which are too low to be selected for nesting by either bird species). The fact that these conceptual models continue to list acres of ESH as the primary target for understanding habitat-related effects on bird reproductive performance, or to demonstrate the effects of dam operations on habitat availability illustrates a failure of adaptive management, where the goal is to learn and then adjust conceptual models based on what has been learned. We hope that the CEM development process will take the time to challenge the doggedly persistent notion that acreage of ESH is driving ILT or PIPL reproductive performance. Refining the vague 2-D concept of "ESH" to a definition of sandbar nesting habitat that explicitly consider elevation, proximity to gallery forest, and geographic distribution within a landscape allows for richly-informative analyses (USACE 2011, Lott et al. 2013).

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 343122 **Organization Type:**
Conservation/Preservation

Representative Quote: Note: This means that those involved with CEM development, effects analysis, and management plan development should read, understand, and assimilate the comprehensive analysis of the Omaha District's bird and habitat monitoring data from 1998 to 2006 in Appendix B of the Programmatic EIS for Emergent Sandbar Habitat Creation (USACE 2011). The insights to be gained from engaging with this document have been inexplicably absent in USFWS or USACE documents related to the effects analysis. To avoid this material is to avoid an extremely important piece of the best available scientific information at the District's disposal to inform adaptive management.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337726 **Organization Type:**
Conservation/Preservation

Representative Quote: In light of these suggestions, the draft CEMs do not make direct enough links between specific USACE management actions on the Missouri River and specific species responses (that can be quantified directly via monitoring metrics sensitive to the specific action). For the development of a management-based monitoring program and adaptive management plan, species objectives should be scaled in space and time to the Missouri River and the breeding season.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337734 **Organization Type:**

Conservation/Preservation

Representative Quote: Current CEMs do not include the appropriate physical habitat response variables Lott et al. (2013) discussed the difference between suitable nesting habitat and the poorly defined concept of Emergent Sandbar Habitat (ESH), which provides an inadequate surrogate for the biologically-relevant metric of suitable nesting habitat. The meaning of the vague term "ESH" hasn't been defined, or measured, with enough resolution to provide insight on effects of USACE operations on tern and plover nesting habitat (particularly temporal resolution across a range of flows in a breeding season). More importantly, a strong relationship between the amount of "ESH" that has been present at various times on the Missouri River and ILT or PIPL reproductive performance has never been convincingly demonstrated.

What has been shown is that when a large proportion of the regional nesting population becomes concentrated into a small number of sites, site-specific predator mortality can have severe effects on a large fraction of the regional population. This strong interaction between habitat availability, predators, and bird reproductive performance is not directly related to acreage, only the number and geographic distribution of potential nesting sites with particular river segment. I would suggest that the number of sites with suitable nesting habitat (however poorly defined and inconsistently measured) that are available, given typical reservoir operations, might be a more informative metric to evaluate habitat/bird population interactions than acreage. Both the PEIS on ESH creation (USACE 2011) and Lott and Wiley (2012), which examined the effects of Keystone dam operations on the Arkansas River, illustrated that ILT reproductive performance can remain high as acreage of ESH declines, as long as some quantity of high-quality, high-elevation nesting habitat are geographically distributed across the landscape, allowing birds to spread out among a large number of sites with low flooding and predation risk.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337733 **Organization Type:**

Conservation/Preservation

Representative Quote: The conceptual model in Figure 1 recognizes that the primary driving variable of weather, combined

with a number of large economic drivers (e.g., energy demand, flood protection, floodplain development, navigation demand) affect both initial reservoir levels and dam releases. It also recognizes that river flows are the consequence of both dam releases and uncontrolled runoff. By making the conceptual model explicit about the major drivers that affect and constrain dam operations, and by identifying specific dam operations to investigate for their effects on endangered species, any potential management solutions will be forced to occur within a framework that is both realistic and possible given current Congressionally-directed project purposes, Records of Decisions (and court cases) related to the Master Manual EIS, BSNP Construction and Operation, BSNP Mitigation EIS (shallow water habitat and cottonwood management), and the Programmatic EIS for the Emergent Sandbar Habitat Creation Program.

Similarly, more than one driver and/or controlling factor culminates in master variables related to sediment transport. Geomorphologists could probably create a conceptual model for this topic with similar detail to Figure 1. Clearly, master ecological variables (e.g., grain size distributions, sediment transport rates) have their own sets of "controlling factors" related to sediment entrapment behind dams, current channel form, engineering structures, and so on. The point of branching out this far on the left side of the conceptual model is to illustrate that master variables like flow and sediment are not simply the result of USACE "operations", but rather, the culmination of a number of ecological processes, all affected by both ecological and societal drivers. To ignore that Missouri River operations exist within this context fails to put the effects of dam operations in proper context and fails to include the factors that truly constrain ecosystem or species recovery. Without recognition of these constraints, management planning for endangered species, including conceptual and numerical models, is of little value to the decision makers.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337730 **Organization Type:**

Conservation/Preservation

Representative Quote: Before reviewers put much effort into generating information about relationships between boxes in the proposed CEMs (e.g., filling in the "narrative spreadsheets" that were sent for review, I think there should be some major revisions to the content and order of the model's major compartments (the boxes themselves). As currently depicted, the major model components are not sufficiently detailed for the CEM to be appropriate for analyzing the effects of USACE actions on endangered species. As a result, achieving the stated goal of developing an adaptive management plan tied to actual management strategies, habitat, and species responses cannot be realized using the existing model components.

Any conceptual model is a balance between simplicity and complexity, but when translating the conceptual model into a numeric

model, additional complexity is often required. Being more explicit about relationships will add complexity to the CEM (the model may no longer fit on one page), but it will force managers, regulators, stakeholders, and modelers to more clearly articulate system relationships. Once a more appropriately detailed conceptual model is established, a quantitative effects analysis could be developed that would allow model users to ask and answer specific questions about the effects of specific USACE operations on endangered species and their habitats. As CEMs are revised, I suggest a 1:1 relationship between each "relationship" line in the graphical models and spreadsheets records that solicit reviewer comments about specific relationships. Review would be facilitated if each line in the graphic models was numbered and referenced a specific value in a "relationship number" field in spreadsheets.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337732 **Organization Type:**
Conservation/Preservation

Representative Quote: Figure 1 (below) is an alternative conceptual model, based on the ones that were sent for review, that describes in more detail how multiple drivers combine with multiple controlling factors or "constraints" to influence reservoir operations. It then illustrates how reservoir operations combine with uncontrolled runoff to produce a number of flow variables (e.g., master variables) that may be useful as inputs to effects assessment models. Importantly, this model treats dam operations as a "controlling factor" and not a "driver", since a number of different drivers can affect dam operations (see Fig. 1) and far more than just dam operations affect flows. For example, the driving variable of "weather" (e.g., rain, snow, and temperature) affects hydrologic processes like runoff and ground water flow that mediate water inputs into river systems. Some, but not all, runoff goes into storage in reservoirs. Additional runoff occurs as uncontrolled hill-slope or tributary runoff that feeds into river reaches below dams. In other words, the driving variable of weather and the controlling hydrologic processes of runoff and groundwater flow set the stage for which dam releases will occur.

Dam releases are explicitly and legally governed by rule curves that are formalized in the Master Water Control Manual and codified in the Record of Decision on the Master Manual EIS. Rule curves balance multiple congressionally authorized purposes, given a large number of stakeholder inputs, only some of which relate to endangered species. Current rule curves reflect court rulings and NEPA documents that set constraints on how much "flexibility" there can be for wildlife-specific flow management and/or other stakeholder needs. Rule curves are designed to handle a wide range of weather scenarios at various temporal scales, GIVEN a starting point of reservoir storage. While each reservoir has optimal seasonal pool level levels for multiple use; real pool levels may be low during drought periods or high during wet periods, which affects the starting

point (reservoir pool level), which makes some rule curve adjustments impossible. In other words, initial storage, which is the function of weather and reservoir management, is always a hard constraint on the types of dam releases that can occur in any given year.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 343123 **Organization Type:**
Conservation/Preservation

Representative Quote: Note: a large number of metrics can be used to evaluate "species condition" that can be more directly linked to specific USACE operations than integrative demographic parameters like "fledge ratios" no matter how well or poorly they are measured.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337747 **Organization Type:**
Conservation/Preservation

Representative Quote: 3) "Maintain a geographic distribution of terns in the river and reservoirs in which they currently occur". This objective ignores one of the most fundamental life history traits of both bird species, which allows them to disperse, both within and between breeding seasons, to take advantage of changing habitat conditions. As with most early-successional species that are disturbance-dependent, one should not expect stable geographic distributions. Rather, these should shift in response to shifting habitat availability, which has clearly occurred across the entire monitoring period on the Missouri River. Qualitatively, perhaps a more appropriate distribution-related metric, at the scale of the entire Missouri River system, would be to maintain a diversity of suitable breeding locations within the program area that are accessible to terns and plovers, given pool levels and river releases, in a large proportion of years. Actual quantitative objectives of this nature could be perhaps set for the number of sites and frequency of their availability via modeling.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337739 **Organization Type:**
Conservation/Preservation

Representative Quote: One final comment on physical habitat variables: I would be very reluctant to include acres of suitable foraging habitat as a primary habitat variable in the CEU until: 1) a clear definition can be provided of what suitable foraging habitat actually is; 2) a clear set of methods are proposed for how it might be measured across the range of flows that occur on the Missouri River; and 3) compelling evidence can be presented that food availability may be limiting tern or plover populations.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 343162 **Organization Type:**
Conservation/Preservation

Representative Quote: From the set of recommendations above it seems critical to:

1) Define the spatial and temporal extent of the full range of USACE management actions (whether these are carried out by the District, subcontracted, or simply permitted) that will be evaluated for their effects on endangered species.

2) Define evaluation metrics for the collection of monitoring data relative to these actions that can provide feedback for planning of future management actions.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337740 **Organization Type:**

Conservation/Preservation

Representative Quote: Clearly, a number of changes are necessary to develop CEMs that will be useful to inform quantitative effects analyses to better understand effects of USACE operations on endangered species and to explore alternative management strategies to improve endangered species baselines. Until CEMs and effects analyses are de-coupled from the BiOp/NEPA process, it will be very difficult to realistically explore these issues across the full range of alternatives that might be considered given the full range of USACE authorities for river management (as opposed to the narrowly constrained management alternatives that were developed in the most recent BiOp). I would be very interested in reviewing revised CEMs if they move this direction. I think there is much more to be achieved via Section 7(a)(1) than Section 7(a)(2) on the Missouri River.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337736 **Organization Type:**

Conservation/Preservation

Representative Quote: I remain perplexed by the lack of demonstrable knowledge of the contents of the Corps' PEIS on Emergent Sandbar Habitat Creation reflected in the draft CEM. Although I have never seen the PEIS on a "suggested reading list" to inform decision-making on the Missouri River, two appendices to the PEIS for Emergent Sandbar Habitat Creation (USACE 2011, Appendices B and C) provide the most detailed evaluation of interactions between ILT and PIPL and aspects of nesting habitat, and the most cogent analysis of the relevance of USACE bird monitoring data that has been published to date. The fact that this information has not been acknowledged, described, or apparently considered within the ILT/PIPL management community on the Upper Missouri River appears at times like a concerted effort to avoid its content. These analyses remain an important example of how adaptive management should function and the process of learning from data. For example, despite a Record of Decision document in the federal register (based on the analyses in this PEIS) that suggested creating or maintaining a much lesser amount of ESH that was required in USFWS (2003), we continue to see massive acreage goals in planning documents. The NEPA process illustrated very clearly that these massive acreages are not necessary to sustain ILT and PIPL population on the Missouri River. More

importantly, the mechanical creation of massive acreages of ESH, as recommended by USFWS (2003), was shown to very strongly negatively affect both the natural and human environment on the Missouri River (USACE 2011). The findings of this document should be clearly reflected in revised CEMs.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 343121 **Organization Type:**
Conservation/Preservation

Representative Quote: A well informed conceptual model and effects analysis that explicitly defines management actions and the relationship of these actions to endangered species will provide much more useful direction for objective setting.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337742 **Organization Type:**
Conservation/Preservation

Representative Quote: Finally, I suggest that some of the most common truisms on the Missouri River (e.g., that the abundance of emergent sandbar habitat may limit tern and plover population growth, the abundance of shallow-water habitat may limit Pallid Sturgeon population growth) should be treated as HYPOTHESES in models, that should be carefully evaluated relative to data. By never subjecting these core assumptions to scrutiny via analysis, and by poorly developing a range of alternative hypotheses that could be tested with data, the scope of monitoring and research on the Missouri River has been limited a priori to hypotheses that have generated limited support across the past decade. I suggest that the top-down nature of objective setting from USFWS (as evidenced by the objectives document circulated along with CEMs for review) should be replaced by the collaborative process of developing and testing alternative hypotheses via CEMs and quantitative effects analyses that focus on metrics that can truly document effects of USACE actions (as opposed to metrics like total population size or lambda, which are affected by all kinds of occurrences outside of the USACE project area).

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337738 **Organization Type:**
Conservation/Preservation

Representative Quote: Figure 1. Conceptual model for drivers and controlling processes culminating in river flows. Reservoir operations are only part of this picture and have socio-economic drivers of their own. (Entry note: Graphic did not copy into PEPC. Refer to attached document for Figure 1.)

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337716 **Organization Type:**
Conservation/Preservation

Representative Quote: For adaptive management to be effective, the term "management" can't be referred to in the abstract. For example, the current CEMs include a box that represents "dam operations" as a driver of endangered species habitat and population



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

dynamics. The general term "dam operations" encompasses a large number of very different operational modes that occur for specific reasons, in various frequencies, with very different effects on endangered species and their habitats. These specific operational modes must be described explicitly to have any hope at evaluating: a) their effects on endangered species and b) any specific changes that might be made to minimize negative effects or provide benefits to endangered species. Descriptions of management actions should include details about the spatial and temporal extent of their impacts. This can then be followed by a clear presentation of competing hypotheses (preferably supported by data) for how these specific actions might affect endangered species (which will clarify monitoring metrics for evaluation). This allows for discussion of how specific management actions might be altered to minimize negative impacts (or provide benefits) to endangered species (while still achieving their primary objectives, in this case, hydropower generation). This level of detail can then lead to an adaptive management program for evaluating species responses to specific management actions based on the collection of targeted monitoring metrics that can be practically collected at relevant spatial and temporal scales for evaluation.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337715 **Organization Type:**
Conservation/Preservation

Representative Quote: The CEMs state up front that the USACE and USFWS are working together to develop a programmatic management plan for endangered species. Then, "species objectives" are "provided" to USACE by USFWS in a top-down manner. Why is this? The USFWS objectives are far too abstract to inform the development of an effects analysis or adaptive management program to address specific Missouri River management issues. The collaborative development of objectives, including input from USACE engineers, water control personnel, and on-the-ground program managers, would help to keep objectives focused on tangible management actions to be evaluated in an effects analysis and then monitored and adjusted via adaptive management.

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339004 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N5): General: Column headings are quite vague. A description of each column heading would reduce ambiguity. For instance, the headings "Direction of Change," "Importance," and "Predictability" could be interpreted in multiple ways, each of which would change the function of the column.

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 338998 **Organization Type:** Federal Government



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Representative Quote: Model Component, Mainstem Dam Operation and Placement (Line 3): "Mainstem Dam Operation and Placement" is identified as a "Driver." Please provide further information on why the "placement" of mainstem dams is considered a driving factor. Suggest deletion of "placement" from the driver heading description.

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 343196 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N3): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 2. Sub-objective 1: Close coordination between the Missouri River system and the Mississippi system is explicitly mentioned, but tributaries will not be evaluated. An explanation of the Corp's decision to exclude the Yellowstone River system (specifically, ongoing activities at the Intake Diversion Dam) would be helpful in understanding the rationale to limit the scope of the plan/analysis.

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 338987 **Organization Type:** Federal Government

Representative Quote: Model Component (Line N1): "Socio-, politico-, economic-, and legal factors"

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339018 **Organization Type:** Federal Government

Representative Quote: Model Components, Drought/Flood Extreme Events (Line 6): Suggesting changing "Drought/Flood Extreme Events" to "Climate/Geology/Land Use."

Model Component (Line N1): "Socio-, politico-, economic-, and legal factors"

Model Component (Line N2): ">mainstem dam operations"

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 338989 **Organization Type:** Federal Government

Representative Quote: Model Component (Line N2): ">mainstem dam operations"

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339003 **Organization Type:** Federal Government

Representative Quote: Commenter's Notes (Line N4): General: Reasonable and Prudent Alternatives are noticeably absent from the Ecological Effects Model. To be consistent with the models for least tern and piping plover, the Reasonable and Prudent Alternatives should be incorporated into the pallid sturgeon model.

Corr. ID: 62 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339019 **Organization Type:** Federal Government



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Representative Quote: Commenter's Notes (Line N1): "Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on mainstem dam operations."

Corr. ID: 63 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339323 **Organization Type:** Federal Government
Representative Quote: - Ecological Effects Model Narrative Matrix- all life stages: Column headings are quite vague. A description of each column heading would reduce ambiguity. For instance, the headings "Direction of Change," "Importance," and "Predictability" could be interpreted in multiple ways, each of which would change the function of the column.

Corr. ID: 63 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339325 **Organization Type:** Federal Government
Representative Quote: - Ecological Effects Model: Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on "Mainstem Dam Operations."
- Ecological Effects Model: Suggest changing "Drought/Flood Extreme Events" to "Climate/Geology/Land Use."

Corr. ID: 63 **Organization:** Bureau of Reclamation Great Plains Regional Office

Comment ID: 339320 **Organization Type:** Federal Government
Representative Quote: - Upper and Lower Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects Models- all life stages: Reasonable and Prudent Alternatives are noticeably absent from the Ecological Effects Model. To be consistent with the models for least tern and piping plover, the Reasonable and Prudent Alternatives should be incorporated into the pallid sturgeon model.

Concern ID:

49761

CONCERN STATEMENT:

Commenters identified data or resources not included in the review products (models or narratives). These comments provided additional research data and pertinent references for model components.

APPROACH:

Comments received were provided to an effects analysis team for their consideration. All input will be evaluated and considered in development of the models, objectives, and other effects analysis products.

Representative Quote(s):

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337577 **Organization Type:** University/Professional Society

Representative Quote: References comment line #32 (under Areas of Suitable Foraging Habitat, invertebrate prey abundance): "There are so many papers that show an association between foraging habitat and prey that it is glaring they are all missing here. Wasn't

there a thesis from SDSU looking at this too?"

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337562 **Organization Type:** University/Professional Society

Representative Quote: References comment line #7 (under the Drought/Flood Extreme Events Model Component - mainstem dam operations -- lines 6-20): "There isn't a single citation from #6 to # 20. Does this mean that this is all based on conjecture? Where does it come from? Aren't there any Corps documents to cite here? We have been running this river since the middle of last century, I find it hard to believe there isn't something."

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337600 **Organization Type:** University/Professional Society

Representative Quote: References comment line #54 (No. Eggs): "Particularly from here to the end of the document, there is literature about the general association (and sometimes specific) among these factors either from the river or the Atlantic."

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337564 **Organization Type:** University/Professional Society

Representative Quote: Uncertainty comment line #22 (related to Flows - area of suitable nesting/brood-rearing habitat): Dan Catlin: "If you raise the water, there are less birds on the reservoir, if you lower there are more. You have 25 years of data showing thing. I think this is anything but uncertain. How many birds did you have on Oahe and Sak in 2011?"

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337593 **Organization Type:** University/Professional Society

Representative Quote: References comment line #48 (Under Immigration/Emigration, number of adults): "Several other studies including Cohen et al. 2009 provided information about this."

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337604 **Organization Type:** University/Professional Society

Representative Quote: Data Sources comment line #63 (under Number of Fledglings, population size): "Why no comments on the quality of this data here? Above there were always 'ifs, ands, and buts' associated with using this data. As I said befor, VT has a comprehensive 10-yr data set that has this. We presented all of this information at the last BiOp."

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337575 **Organization Type:** University/Professional Society

Representative Quote: References comment line #29 (under Area of Suitable Nesting Habitat, RPA-Vegetation): "Actually our results showed that habitat modification decreased the use of sandbars by piping plover"

Corr. ID: 46 **Organization:** Virginia Tech
Comment ID: 337599 **Organization Type:** University/Professional Society

Representative Quote: References comment #52 (under Invertebrate Prey Availability, Nest density): "More of this work comes from the Atlantic coast. I don't think that we have shown higher densities of nesting on the river relative to food resources. However, there is much information from the Atlantic Coast."

Corr. ID: 46 **Organization:** Virginia Tech
Comment ID: 337558 **Organization Type:** University/Professional Society

Representative Quote: I did not have much time to look at the other species diagrams and models, but a quick review of the least tern model showed a similar, if less pronounced, incomplete literature review. In general, I hope that these comments help you in the next stages of this draft model compilation. I have added citations of recent work by VT to the end of the document for potential incorporation into the justification structure of the model.

Corr. ID: 46 **Organization:** Virginia Tech
Comment ID: 337563 **Organization Type:** University/Professional Society

Representative Quote: Data sources comment line #14 (under the Flows Model Component-area of suitable foraging habitat): "Our work, which is not cited though available in JWM Feb. 2013 and provided to the Corps and USFWS, has shown that single snapshots of habitat amounts likely belie the effects of flow on plover demography. We did have luck showing that flow could be used as a proxy for habitat availability in this study"

Corr. ID: 46 **Organization:** Virginia Tech
Comment ID: 337603 **Organization Type:** University/Professional Society

Representative Quote: Importance comment line #61 (No. Chicks, number of fledglings): "See Catlin et al. presentation from the 2013 BiOp - this can have profound and long-lasting effects on PIPL fitness. Also see Catlin et al. 2013 showing that it can reduce pre-fledge survival"

Corr. ID: 46 **Organization:** Virginia Tech
Comment ID: 337571 **Organization Type:** University/Professional Society

Representative Quote: References comment line #26 (under ecological response - Area of Suitable Nesting Habitat, immigration/emigration): "Who is T. Grotto?"

Corr. ID: 46 **Organization:** Virginia Tech
Comment ID: 337588 **Organization Type:** University/Professional Society

Representative Quote: References comment line #42 (under Predation, Adult survival): "And NUMEROUS other studies of survival from the Great Lakes, Atlantic coast, etc."

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337591 **Organization Type:** University/Professional Society

Representative Quote: References comment line #44 (under Predation, RPA-Predator Management): "There are numerous studies of the effects of caging on productivity etc. Catlin 2009 cites many of them"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337595 **Organization Type:** University/Professional Society

Representative Quote: References comment line #49 (under Invertebrate Prey Availability, No. adults): "Are you unsure? From 49 on I get the impression that the team was tired of doing this. I assure you that literature exists for many of these questions. Perhaps I can review the model when this is finished?"

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337606 **Organization Type:** University/Professional Society

Representative Quote: Catlin, D. H., J. H. Felio, and J. D. Fraser. 2013. Effects of water discharge on fledging times, growth, and survival of piping plovers on the Missouri River. *Journal of Wildlife Management*, 77: 525-533.

Hunt, K.L., D.H. Catlin, J.H. Felio, and J.D. Fraser. 2013. Effect of capture frequency on the survival of Piping Plover chicks. *Journal of Field Ornithology*, 84(3): 299-303.

Hunt, K.L., N. Taygan, D.H. Catlin, J.H. Felio, and J.D. Fraser. 2013. Demography of Snowy Plovers (*Charadrius nivosus*) on the Missouri River. *Waterbirds* 36(2): 220-224.

Catlin, D.H., J.H. Felio, and J.D. Fraser. 2012. Comparison of piping plover foraging habitat on artificial and natural sandbars on the Missouri River. *Prairie Naturalist* 44(1): 3-9.

Gratto-Trevor, C., D. Amirault-Langlais, D. Catlin, F. Cuthbert, J. Fraser, S. Maddock, E. Roche, and F. Shaffer. 2012. Connectivity in piping plovers: Do breeding populations have distinct winter distributions? *Journal of Wildlife Management* 76: 348-355.

Catlin, D. H., J. D. Fraser, J. H. Felio, and J. B. Cohen. 2011. Piping plover habitat selection, and nest success on natural, managed, and engineered Missouri River sandbars. *Journal of Wildlife Management* 75: 305-310.

Catlin, D. H., J. H. Felio, and J. D. Fraser. 2011. Effect of owl trapping and removal on pre-fledge survival in piping plovers. *Journal of Wildlife Management*, 75: 458-462.

Catlin, D. H., R. Jacobson, M. Sherfy, M. Anteau, J. Felio, J. Fraser,



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

C. Lott, T. Shaffer, and J. Stucker. 2010. Discussion of "Natural hydrograph of the Missouri River near Sioux City and the least tern and piping plover" by Donald Jorgensen. Journal of Hydrological Engineering 15: 1076-1078.

Roche, E. A., J. B. Cohen, D. H. Catlin, D. L. Amirault-Langlais, F. J. Cuthbert, C. L. Gratto-Trevor, J. Felio, and J. D. Fraser. 2010. Range-wide piping plover survival: correlated patterns and temporal declines. Journal of Wildlife Management 74: 1784-1791.

Concern ID:

49762

CONCERN STATEMENT:

Comments were provided regarding interpretation of the Endangered Species Act and agency policy and direction, development and scope of objectives and models, and other more general topics.

APPROACH:

Comments received were provided to an effects analysis team for their consideration in refining the conceptual ecological models and species objectives.

Representative Quote(s):

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337581 **Organization Type:** University/Professional Society

Representative Quote: References comment line #37 (under Nest Density, predation): "I guess I'm not sure why my name without a year refernce is here. Does this mean the dissertation? Or am I supposed to fill in with literature? I really didn't think that was going to be my role and am not inclined to provide an exhaustive literature search for this."

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337582 **Organization Type:** University/Professional Society

Representative Quote: Data Sources comment line #37 (under Nest Density, predation): "Virginia Tech has a 10-year monitoring data-set of nest, chick, adult survival, movement, etc. I find it interesting that it is never cited as a potential data source."

Corr. ID: 46

Organization: Virginia Tech

Comment ID: 337559 **Organization Type:** University/Professional Society

Representative Quote: References column overarching comment: I find it hard to believe that this is all of the literature that you could find that was pertinent to this subject. For example, I put the words 'piping plover' in google scholar and received almost 9000 hits. At first glance, this model seems to be based on very shaky footing since it references very little of the avaiable literature. When it does cite literature, it is unclear what the paper actually is. There is no literature cited, citations lack years, some are just names, such as my name, without much reference. I find it difficult to review your rankings when almost none of them have references, and those that

do, I am unable to necessarily determine the actual source. In some cases there are detailed instructions on the locations of lit, but others frustratingly not so. A lack of transparency in this document as the source of conclusions makes any review exceedingly difficult.

GENERAL COMMENT: I'm not sure this document is ready for review frankly. I will do what I can, but I suggest that you reassemble and create a more complete for external review. This type of review should not be considered formative in that your external reviewers do the heavy lifting of putting together your model, they should be reviewing the model and the logic that went into it. That is not really possible in several cases in this document.

Corr. ID: 46 **Organization:** Virginia Tech

Comment ID: 337579 **Organization Type:** University/Professional Society

Representative Quote: Data Sources comment line #34 (under Areas of Suitable Foraging Habitat, RPA-ESH Construction): "So now you have switched to 'analysis may be affected.' I have no way to evaluate that statement in relationship to your rankings etc."

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337724 **Organization Type:**

Conservation/Preservation

Representative Quote: The review materials make 6 very useful statements about objective-setting (surrounded by less useful statements- see Appendix A) that should guide future efforts. Objectives should:

- 1) "Have a direct relationship with the USACE's effect on the (species) from their operations of the Missouri River System".
- 2) "Be sensitive to actionable threat remediation". Stated more plainly, this means that specific management actions can legally be implemented and their effects on species can be measured.
- 3) "Reflect the latest knowledge of the species life history needs and their current status relative to the form and function of the contemporary Missouri River System."

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337719 **Organization Type:**

Conservation/Preservation

Representative Quote: Some of the fundamental sub-objectives provided by USFWS (e.g., maintain stable or increasing population trends) are strongly affected by population dynamics that occur outside of the Missouri River basin (which includes the entire non-breeding season for both bird species, and a large fraction of both of their breeding ranges). Consequently, it will be impossible to connect specific Missouri River management actions to progress towards such broad objectives (in both space and time). This sort of low payoff information does not meet the needs of a regional adaptive management program. The final bullet of the "species objectives" documents provided some excellent suggestions (following many less useful suggestions throughout the rest of the document) that I highlight here (emphasis mine):



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

"It is important for future reviewers and contributors to understand the origin of and our needs for these objectives, for example:

- The objectives stem from the effect of USACE actions and operations on the species and the legal mandate to avoid jeopardizing continued existence of the species;
- The objectives will be used in an Effects Analysis;
- Assessments of progress toward achieving objectives will be the basis for making the revisions to the Adaptive Management efforts moving forward; and
- For Adaptive Management purposes, objectives must be responsive within a reasonable time frame (i.e., we can't use monitoring results to affect management change if we must wait 30 to 40 year to interpret the results)."

Given this guidance, many of the objectives proposed by USFWS in the "species objectives" documents are inappropriate to satisfy these needs.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337721 **Organization Type:**
Conservation/Preservation

Representative Quote: In introducing fundamental objectives, the USFWS' "species objectives" documents states: "While this objective is consistent with USFWS established recovery goals for the species, it is prepared specifically as a fundamental objective to avoid and prevent jeopardy to the species from the USACE action of operating and maintaining the Missouri River System." There are several problems with this statement. First, meeting recovery plan targets for a portion of a species range will not necessarily result in jeopardy avoidance. No matter what happens on the Missouri River, population trajectories at the scale of the listed population will be driven by what happens throughout their entire range, across their entire annual cycle (and both bird species spend the majority of their annual cycle outside of the Missouri River basin, or even the United States in the case of Least Terns). A corollary to this notion is that, the USACE could diligently implement all aspects of their Missouri River RPAs, adaptive management, and other still unconsidered measures and listed populations could decline on the Missouri River (or at the scale of their breeding range) due to population regulation during the non-breeding season or outside of the Missouri River basin during the breeding season. These declines could take place despite programmatic conservation action or inaction of the USACE on the Missouri River.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337745 **Organization Type:**
Conservation/Preservation

Representative Quote: The draft species objectives documents contain a number of highly counter-productive recommendations for

objective-setting that I recommend ignoring completely, including:

1) "Be consistent with Endangered Species Act required Recovery Plan recovery goals and strategies." Following the prescriptions of these prior documents, which have debatable scientific foundations, is by no means a necessary condition to avoid jeopardizing the continued existence of any of the three species.

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337725 **Organization Type:**

Conservation/Preservation

Representative Quote: 4) "Adaptive management will require the opportunity to observe responses to management actions in a shorter time frame and an ability to link the response to an action". This is a critical design recommendation for both conceptual and numeric models. Management actions must be explicitly defined and adaptive management must be informed by the evaluation of monitoring metrics that directly indicate a species response to explicitly-defined management actions at time-scales that are relevant for adjusting future management actions.

5) "For adaptive management purposes, objectives must be responsive within a reasonable time frame". This argues pretty strongly against objectives based on population trend analyses, which require lengthy time series of counts and cannot be linked to responses to specific management actions as trends are affected by so many factors across a species' entire life-cycle.

6) Understand "critical relationships between USACE operations, external drivers, habitat changes on the Missouri River, and species condition".

Corr. ID: 49 **Organization:** American Bird Conservancy

Comment ID: 337748 **Organization Type:**

Conservation/Preservation

Representative Quote: 4) "Sub-objectives in sum ultimately allow us to achieve the fundamental objective in the long-term." This is true in spirit, but not in letter. For example, there are many different sub-objectives that could be proposed as hypothetical paths towards avoiding jeopardy in the long-term. Regardless of the performance of any of these sub-objectives on the Missouri River, targets like "jeopardy avoidance" or "recovery" are only partially controllable. Speaking hypothetically, what if the most important demographic parameter limiting Interior Least Tern populations is over-winter survival and the most common cause of mortality is due to shooting in wintering areas? No set of breeding season objectives will sum to recovery in this case. The immediate threats to the continuation of the species would be, in fact, outside of the influence of the operation of the Missouri River and outside the ability of the USACE to address. If this mortality cause were known (which it will not be, given the absence of monitoring outside the breeding season) one might argue that Missouri River management does not jeopardize the existence of this species, shooting during winter does. Again, this

example points to the difficulty of evaluating local/regional management actions that occur during a restricted time of year in relation to limiting factors that may occur any time and any place across a migrant's annual cycle. Jeopardy avoidance links local causes of imperilment to local measures that could be implemented to affect the cause of jeopardy; goal setting and evaluation of such grand-scale recovery goals for a wide ranging species like the ILT is not appropriate.

Corr. ID: 49

Organization: American Bird Conservancy

Comment ID: 337746 **Organization Type:**

Conservation/Preservation

Representative Quote: 2) "Maintain a long-term trend in population growth that is at least stable." There are several problems with this objective. The most basic problem is that population trends only document (often poorly) what has happened in the past. In systems that respond strongly to environmental change, past trends do not necessarily predict future population trajectories when conditions during the trend monitoring period do not exactly match future conditions. When count data are variable (as is the case for all listed species on the Missouri), trend estimates are typically imprecise at temporal scales shorter than a decade. Consequently, mean trend estimates have little meaning when confidence intervals are large and overlap zero change. This result is extremely common for species with counts as variable as the three listed species on the Missouri. Also- technically, there is no such thing as a "stable" population trend once count data have been subjected to analysis. There are only significantly positive trends, significantly negative trends, and trends that are not statistically different from zero (again, a very common result). For this latter class, "stability" may only be inferred when trend estimates have very narrow confidence intervals. When confidence intervals are large, power analyses usually indicate the low power of monitoring data to estimate true trends. Finally, regional population trends can be affected by seasonal fluctuations in habitat (i.e., during pluvial or drought periods), immigration and emigration, as well as survival and mortality during the non-breeding period (which takes both bird species outside of the Missouri River for a majority of their life cycle). Consequently, "population trend" is a not a metric that will provide useful short -term, or even long-term, feedback on Missouri River-specific management.



Appendix A – Host Site Locations

Webinar Host Locations

Montana

- Montana Fish, Wildlife & Parks, Fort Peck State Fish Hatchery, 277 Hwy 117, Fort Peck, MT 59223

Wyoming

- State Engineer's Office, 122 West 25th Street, Herschler Building, Fourth Floor East Wing, Cheyenne, WY 82002
- Natural Resources Conservation Service, Douglas Service Center, 911 South Wind River Drive, Douglas, WY 82633

North Dakota

- U.S. Fish and Wildlife Service, North Dakota Field Office, 3425 Miriam Avenue, Bismarck, ND 58501

South Dakota

- U.S. Army Corps of Engineers/National Park Service, Lewis and Clark Visitor Center, adjacent to Gavins Point Dam in Yankton SD located on the south side of the Missouri River, 55245 Nebraska Highway 121, Crofton, NE 68730

Nebraska

- Pappio-Missouri River NRD/Chalco Hills-Wehrspann Lake, 8901 S. 154th Street, Omaha, NE 68138

Iowa

- Natural Resources Conservation Service, 3539 Southern Hills Dr., Suite 3, Sioux City, IA 51106

Kansas

- Environmental Protection Agency, Region 7, 11201 Renner Blvd, Lenexa, KS 66219

Missouri

- Natural Resources Conservation Service, Parkade Center, Suite 232, 601 Business Loop 70 West, Columbia, MO 65203

Appendix B – Coding Structure

Code	Description	Scope	Substantive
AE1000	Affected Environment: Geologic Resources	National	Yes
AE10000	Affected Environment: Rare Or Unusual Vegetation	National	Yes
AE1001	Affected Environment: Issues and Impact Topics Selected for Analyses	Project	Yes
AE11000	Affected Environment: Species Of Special Concern	National	Yes
AE12000	Affected Environment: Wildlife And Wildlife Habitat	National	Yes
AE14000	Affected Environment: Historic Structures	National	Yes
AE15000	Affected Environment: Archeology Resources	National	Yes
AE16000	Affected Environment: Ethnographic Resources	National	Yes
AE18000	Affected Environment: Sacred Sites	National	Yes
AE2000	Affected Environment: Soils	National	Yes
AE20000	Affected Environment: Land Use	National	Yes
AE21000	Affected Environment: Socioeconomics	National	Yes
AE22050	Affected Environment: Recreational Use	Project	Yes
AE24000	Affected Environment: Resource Topics (Tribal)	Project	Yes
AE25000	Affected Environment: Navigation	Project	Yes
AE4000	Affected Environment: Floodplains	National	Yes
AE5000	Affected Environment: Wetlands	National	Yes
AE7000	Affected Environment: Air Quality	National	Yes
AE9000	Affected Environment: Vegetation	National	Yes
AE9500	Affected Environment: Water Quality	Project	Yes
AL3500	Alternatives: Range of Alternatives	Project	Yes
AL4000	Alternatives: New Alternatives Or Elements	National	Yes
AL4500	Alternatives: No Action	Project	Yes
AM1000	Adaptive Management	Project	Yes
AP1000	Authorized Purpose: General (not pertaining to one authorized purpose)	Project	Yes
CC1000	Consultation and Coordination: General Comments	National	Yes
DUP1000	Duplicate Correspondence	Project	No
ED1000	Editorial	National	Yes
GA1000	Impact Analysis: Impact Analyses	National	Yes
GA2000	Impact Analysis: Use Trends And Assumptions	National	Yes
GA3000	Impact Analysis: General Methodology For Establishing Impacts/Effects	National	Yes
MT1000	Miscellaneous Topics: General Comments	National	No
ON1000	Other NEPA Issues: General Comments	National	Yes
OPP1000	Opposition of the Missouri River Recovery Management Plan and EIS	Project	Yes
PN10000	Purpose And Need: Issues Eliminated From Further	National	Yes



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Consideration			
PN2000	Purpose And Need: Park Purpose And Significance	National	Yes
PN3000	Purpose And Need: Scope Of The Analysis	National	Yes
PN3500	Purpose and Need: Scope of the Analysis (Tribal)	Project	Yes
PN5000	Purpose And Need: Regulatory Framework	National	Yes
PN8000	Purpose And Need: Objectives In Taking Action	National	Yes
PN9000	Purpose And Need: Issues And Impact Topics Selected For Analyses	National	Yes
RF1000	References: General Comments	National	Yes
SUP1000	Support for the Missouri River Recovery Management Plan and EIS	Project	Yes
TC1000	Resources of Concern - Tribal	Project	Yes
TC1500	Past Projects - Tribal	Project	Yes
TC2000	Purpose and Need: Scope of the Analysis - Tribal	Project	Yes
TC2500	Water resources: study area - Tribal	Project	Yes
TC3000	Land Use - Tribal	Project	Yes
TC3500	Historic preservation: guiding regulations, policies, laws - Tribal	Project	Yes
TC4500	Tribal involvement in project	Project	Yes
TC5000	Purpose And Need: Issues And Impact Topics Selected For Analyses - Tribal	Project	Yes
TC5500	Affected Environment: Wildlife and Wildlife Habitat - Tribal	Project	Yes
TC6000	Affected Environment: Species of Special Concern - Tribal	Project	Yes
TC6500	Past Studies and References - Tribal	Project	Yes
Z1000	CEM and Objectives Comments	Project	Yes



Appendix C – Public Scoping Comment Summary Report (Comments Organized by Code)

AE1001 Affected Environment: Issues and Impact Topics Selected for Analyses (Substantive)

Correspondence Id: 4 **Comment Id:** 337434 **Coder Name:** NLANGDON

Comment Text: While MOARC interests recognize the importance of responsible river management for the environment and species, the federal government must also recognize the importance of the Human Considerations for which River management is so vital. To focus on species / environmental needs to the exclusion of the human and economic interests would be inconsistent with past efforts of many groups and individuals and the work of the Missouri River Recovery Implementation Committee (MRRIC)...Human Considerations must be extensively taken into account as alternatives are identified in this process. The success of the MRRP will be determined by the degree to which human and species interests are balanced.

Organization: MOARC Association

Commenter: Franklyn W Pogge **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340279 **Coder Name:** NLANGDON

Comment Text: Invasive species The EPA recommends the NEPA document analyze the project's potential to increase the spread of invasive species such as zebra and quagga mussels ((*Dreissena polymorpha* and *D. bugensis*, respectively), the New Zealand mudsnail (*Potamopyrgus antipodarum*), and the rusty crayfish (*Orconectes rusticus*). Environmental Justice The project area includes potential Environmental Justice areas; therefore, we recommend the NEPA document address whether any minority or economically-disadvantaged communities will be disproportionately and adversely affected by the direct, indirect, or cumulative impacts of the project. Examples of this include effects to fishing or recreational economies, fish consumption, or use of the river associated with habitat changes or construction. The following references may be helpful: -Environmental Justice Guidance Under the National Environmental Policy Act, Council on Environmental Quality, December 1997 -EO 12898, Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and Memorandum, February 11, 1994 -EPA Guidance for Consideration of Environmental Justice in Clean Air Section 309 Reviews, EPA Office of Federal Activities, EPA 315-B-99-001, July 1999; and -Guidance for Incorporating Environmental Justice Concerns in EPAs NEPA Compliance Analyses, EPA Federal Activities, April 1998.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340274 **Coder Name:** NLANGDON

Comment Text: We recommend the NEPA document evaluate and disclose air quality impacts and, if necessary, detail mitigation steps that will be taken to minimize associated adverse impacts.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 66 **Comment Id:** 340258 **Coder Name:** NLANGDON

Comment Text: 2. As demonstrated by the drought of 2012, the Missouri River and the free-flowing reach of the Mississippi River from St. Louis, Missouri to Cairo, Illinois are wholly integrated. The impact of the changes to releases and hydrology on the Missouri River affect conditions on the free-flowing reach of the Mississippi River and cannot be separated for administrative convenience. A failure to consider the impact of the Mississippi River affects determinations regarding pallid sturgeon recovery, nationwide economics, and economic impacts of individual stakeholder groups associated with Missouri River development.

Organization: Missouri River Dredgers Group

Commenter: David A Shorr **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339252 **Coder Name:** NLANGDON

Comment Text: Values which cannot be defined solely in monetary terms should be equally considered with more traditional economic values. For example, the availability of natural-appearing landscapes contributes to quality of life and to tourism. MRRP actions for restoring natural conditions may affect scenic and visual resources important to local tourism-based economies.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 56 **Comment Id:** 339242 **Coder Name:** NLANGDON

Comment Text: Water quality is a basic requirement of quality habitat and should also be included in this EIS.

Organization: Sierra Club

Commenter: Caroline Pufalt **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 25 **Comment Id:** 337758 **Coder Name:** NLANGDON

Comment Text: There are reported 200-plus horizontal laterals and over 10-plus pipelines under lake in North Dakota. I'm concerned about the potential adverse impact on this on the aquatic wildlife, environment. Further, the Missouri River is increasingly a primary source of drinking water for Fort Berthold and western North Dakota. I want this potential impact adequately identified in the scoping document and adequately addressed in the final EIS. What has to be done to make sure this happens?

Organization:

Commenter: Theadora Bird **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 5 **Comment Id:** 337673 **Coder Name:** KSMITH

Comment Text: Will pallid migration from the Mississippi to the Missouri be considered in this analysis?

Organization:

Committer: David Shorr **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337508 **Coder Name:** NLANGDON

Comment Text: I specifically urge your attention of each of the human considerations included in Addendum 1: Human Considerations Compilation Sept 04 2012 Lower Basin. This compilation forms a foundation of understanding for the needs of various category interests previously discussed.

Organization: Coalition to Protect the Missouri River

Committer: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337485 **Coder Name:** NLANGDON

Comment Text: In todays difficult economy, reliability and certainty are a businesss best allies. Missouri River certainty has declined for economic stakeholders in recent years as recovery efforts have created additional unknowns and ultimately risk. Stakeholder exposure to risk has adversely impacted navigation tonnage through the more difficult letting of contracts as well as increased uncertainty for myriad other business-related interests. Benefits lost to past, present and future management actions should also be considered in the scope of this process. Navigation benefits associated with water-compelled rates, created when navigation competes with truck and rail transportation, must be analyzed and included in the scope of the MRRMP-EIS. Railroad freight rates are directly related to the availability of waterborne commerce. Regional economic benefits resulting from even the possibility of Missouri River navigation are significant. Waterborne transportation benefits the environment and the economy because it is the greenest and most cost effective mode of freight transportation. Water-compelled rates reduce regional transportation costs; and thus, the costs of goods. The Missouri Department of Transportations Missouri River Freight Corridor Assessment and Development Plan indicated that, Market potential exists to add significant volume to existing Missouri River freight movements over the next five years and beyond. Some of the growth opportunities are in traditional markets that have moved on the river, while others are in emerging markets. A properly managed Missouri River will provide for species needs and reliable flows which not only sustain navigation but are required to sustain a plethora of additional authorized uses. Its imperative the impacts to municipal water, thermal generation, lower basin fish and recreation and Mississippi River water commerce be included within the scope of the MRRMP/EIS. Flows required to sustain navigation are critical to these uses in the following ways.

Organization: Coalition to Protect the Missouri River

Committer: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337476 **Coder Name:** NLANGDON



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment Text: In recent years, focus on and implementation of recovery program efforts has significantly heightened. Appropriations for the Missouri River Recovery Program (MRRP) have drastically increased from an average of \$7.194 million per year during Fiscal Years (FY) 1992-2003 to an average of \$66.891 million per year during FY 2006-2012. While scores of millions are appropriated for endangered species and mitigation efforts, work allowance to sustain the navigation portion of the Bank Stabilization and Navigation Project (BSNP) in the Kansas City District has averaged only \$4.832 million per year during Fiscal Years 2007-2013 with the low declining to a dismal \$3.610 million in FY 2012. It is troubling that the Office of Management and Budget and Congress do not appreciate the benefits of BSNP infrastructure to waterborne commerce, thermal power, municipal water suppliers and flood control interests. While CPR interests recognize the importance of responsible river management for the environment and species, it is imperative that the federal government also recognize the importance of the social, economic and cultural (SEC) interests to the future of this nation. To focus on species/environmental needs to the exclusion of economic interests would be playing a zero-sum game that would negate many of the relational advances seen in the past few years in venues such as the Missouri River Recovery Implementation Committee (MRRIC).

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

AE11000 Affected Environment: Species Of Special Concern (Substantive)

Correspondence Id: 61 **Comment Id:** 339310 **Coder Name:** NLANGDON

Comment Text: On October 2, 2013, the Service proposed listing as endangered, the northern long-eared bat (*Myotis septentrionalis*), which occurs throughout much of the study area. Additional information on that species and its habitats can be found at <http://www.fws.gov/midwest/endangered/mammals/nlba/index.html>, and should be considered in the EIS.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 69 **Comment Id:** 341614 **Coder Name:** NLANGDON

Comment Text: The data collected on pallid sturgeon in the Middle Mississippi is relevant to issues of recruitment for pallid sturgeon that utilize the lower Missouri River. According to the U.S. Fish & Wildlife Service, Midwest Region, Endangered Species Section 7 Consultation on the Operation of the Upper Mississippi River 9-Foot Channel, there is evidence of natural reproduction: in 1998 a young-of-year pallid sturgeon was collected in the Middle Mississippi River; in 1999, larval pallid sturgeons were collected in the Lower Missouri River; and in 2000, larval pallid sturgeons were collected in the Middle and Lower Mississippi River. The Middle Mississippi River is indeed the core of the pallid sturgeon's range.

Organization: Missouri Levee & Drainage District Association

Commenter: Robert J Vincze **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 67 **Comment Id:** 340276 **Coder Name:** NLANGDON

Comment Text: . In order to inform the goals of the project, we recommend the NEPA document include the following: -A summary of the status and trends of project area threatened, endangered, and sensitive (TES) species and potential suitable habitat acreage;

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339383 **Coder Name:** NLANGDON

Comment Text: The EIS should describe the status of riverine populations with regard to ESA other than those currently listed, assess the potential for future additional listings based on current and projected trends and describe how the Management Plan would be modified to address this change in condition.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

AE12000 Affected Environment: Wildlife And Wildlife Habitat (Substantive)

Correspondence Id: 60 **Comment Id:** 339270 **Coder Name:** NLANGDON

Comment Text: The U.S. Congress authorized the BSNP Mitigation Act to compensate for the loss of more than half a million acres of Missouri River habitat that occurred over the course of decades between St. Louis, Missouri and Sioux City, Iowa. The loss of public trust resources is a loss for the citizens of Missouri and a majority of the loss (305,000 acres) occurred in Missouri. To date, roughly 30 percent of the 105,000 acres required for compensatory mitigation in Missouri has been completed. These existing mitigation lands provide partial restitution to Missouri citizens by providing Missourians and visitors with greater access to the river for floodplain fishing, hunting and other wildlife-associated recreation. Further, the nearly 72,000 acres of habitat yet due as restitution to the citizens of Missouri represents an opportunity for enhanced public recreation, restoration of lost habitat for fish and wildlife, economic growth and ecological sustainability that is necessary to also maintain a wide variety of uses along the river, including agricultural, water supply and other uses.

Organization: Missouri Department of Conservation

Commenter: Robert L Ziehmer **Page:** **Paragraph:**

Kept Private: No

AE21000 Affected Environment: Socioeconomics (Substantive)

Correspondence Id: 4 **Comment Id:** 337436 **Coder Name:** NLANGDON

Comment Text: Multiple millions of dollars have been invested in the Missouri River Basin. Cities have been built, electrification and municipal water supplied, food and fiber produced, and transportation and jobs created, all of which have produced extraordinary lifestyles which this MRRMP and EIS shouldn't diminish.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: MOARC Association

Commenter: Franklyn W Pogge **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 341605 **Coder Name:** NLANGDON

Comment Text: Ameren Missouri, a holding Company of Ameren Corporation, was founded in 1902 and is the state's largest electric utility. Ameren Missouri provides electric service to approximately 1.2 million customers across central and eastern Missouri, including the greater St. Louis area. Ameren Missouri provides electric service to 63 counties and more than 500 towns. More than half (53%) Ameren Missouri's electric customers are located in the St. Louis and St. Louis County area. The company relies on water resources from the Missouri River for its Callaway Nuclear and Labadie coal fired energy centers. Both of these facilities have intakes on the Missouri River. In addition, the Company operates two additional energy centers below the Mississippi River confluence. These are the Meramac and Rush Island energy centers.

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337480 **Coder Name:** NLANGDON

Comment Text: Multiple millions of dollars have been invested in Missouri River Basin social, economic and cultural endeavors in recent decades. Their return-on-investment has been staggering. Cities have been built, electrification and municipal water supplied, food and fiber produced and transportation and jobs created all of which have produced extraordinary lifestyles which this MRRMP and EIS shouldnt diminish.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

AE22050 Affected Environment: Recreational Use (Substantive)

Correspondence Id: 19 **Comment Id:** 338243 **Coder Name:** NLANGDON

Comment Text: How is recreation as an authorized purpose executed in the lower Missouri River in the Iowa region? What financial investments has the Corps dedicated to providing recreational access to the lower Missouri River in the Iowa region as it is a congressionally authorized purpose?

Organization: Mo Valley Waterfowler Association

Commenter: Bill Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 53 **Comment Id:** 338251 **Coder Name:** NLANGDON

Comment Text: Recreation on the lower river must be given full appreciation, including those activities that are protected by the BSNP. A significant recreational benefit has previously been identified by the Missouri Department of Conservation (MDC) 1. In addition to the activities



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

identified by MDC, there are numerous boating and kayaking opportunities and other recreation events that have regional economic impacts (e.g. Missouri River 340). It is important to note that recreation on the lower river can take many forms which are not solely within the banks of the river. For instance, in 2012, the Katy Trail State Park alone added \$18 million to the state's economy with 185 miles of the entire 240 miles being adjacent to the Missouri River. The Katy Trail State Park is largely protected by the BSNP and any modification to the BSNP could negatively impact the "longest Rails-to-Trail trail in the United States" that is enjoyed by over 400,000 visitors each year.

Organization: MO Department of Natural Resources

Commenter: Sara Parker Pauley **Page:** **Paragraph:**

Kept Private: No

AE24000 Affected Environment: Resource Topics (Tribal) (Substantive)

Correspondence Id: 42 **Comment Id:** 337531 **Coder Name:** NLANGDON

Comment Text: So you have to follow the Section 106 -- the NHPA. Is there somebody that you've already, a company that's already working on doing the cultural surveys, and how can we stay involved with this. We have quite a crew that can actually get out and help and assist with surveys. I think they will end up becoming necessary because there's a lot of issues with grave sites that get exposed along the banks. And so based on that, I think it should be something that should be jumped on right away. I think waiting until between "Objectives" and "Alternatives" might be opening yourselves up to problems later. Maybe if you start now contacting all the tribes from Fort Peck all the way down. But we want to stay involved as the Crow Tribe because Crow Country, you know, the Missouri went right through Crow Country. Well, I think that's kind of -- like I was just telling her, that there's really -- I feel like I really can't comment on anything because I don't really have a lot of information. But, I did offer my one comment, which is something I believe that should happen, you know, starting the 106 earlier.

Organization: Crow Tribe

Commenter: Emerson Bullchief **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 41 **Comment Id:** 337761 **Coder Name:** NLANGDON

Comment Text: I've got a question. I was indirectly affected by this when I was talking about the Fort Peck Dam. When they took that 650,000 cubic yards of rock out to make the dam, we were paid a penny per cubic yard at that time. And I think the going rate back in 1937, '38 was \$1.63. And even at a penny per cubic yard, our tribe wasn't paid the full amount for the rock they took out. And I went back and looked in the archives of different places all over the United States that had archives on this stuff, and there's two separate claims that were made to try to get that, and none of them ever came to a final agreement. I think at the time, it was only about \$640,000 -- or \$640.00. But they were going after the interest from that date to the current date, whenever it gets looked at. So that's what they were going after on the claims. When I was doing this -- when I had this job it was in 1998 through '99, I was the Environmental Mitigation Officer for the Environmental Department. And my job was -- I had an A&A grant and that was to evaluate impacts associated with the Army Corps of Engineers rock quarry operations on Snake Butte, which is on our reservation. It was a two-year grant we had. And I found some minor impacts caused from the removal of the rock, such as head cutting, blocked drainages,



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

diked. They put a 13-mile railroad spur from there to get to the railroad tracks north that went across. Just leftover debris, like cables, railroad ties, spikes for the rails laying all over the rocks and stuff. So, I thought I'd bring that up.

Organization: Fort Belknap Indian Community

Commenter: Dennis Longknife **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 41 **Comment Id:** 337759 **Coder Name:** NLANGDON

Comment Text: On the first slide, you had the 1944 Flood Control Act. Well, when they made that Fort Peck Dam, I was actually the Mitigation Coordinator for Snake Butte Project, which was involved for removal of riprap from a sacred site of ours called Snake Butte, and they hauled that rock to Fort Peck to make the upstream base of the dam. And they did that before the Flood Control Act. So maybe they were just getting ready for building the dam then, huh? Yeah, they took 640,000 cubic yards of riprap from our -- one of our 20 buttes -- to put on the upstream base of Fort Peck Dam. I don't know if we had graves farther up the main stem where we're at, but we had campsites along the river. So lowering the river would expose some of those old campsites that might have artifacts still in them.

Organization: Fort Belknap Indian Community

Commenter: Dennis Longknife **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 47 **Comment Id:** 337707 **Coder Name:** NLANGDON

Comment Text: I do have a question about -- I heard you mention for terns and plovers, like from Garrison down to -- from the Garrison Dam to where? Okay. So anything north of the dam -- because I know on the reservation we have terns and plovers. Well, it would be the -- Garrison is where Lake Sakakawea is, which is in the heart of our reservation. But the problem we have with all of that is the monitoring of it. I mean like I was the only biologist for the last four years there and I've seen terns and plovers, but the other part is enforcement. We have so many problems, and it's actually on state management land within the reservation where the plovers specifically nest, but we have people going in there camping -- camp fires. You know, we've seen and picked up beer bottles and just things like that and it's hard to keep people away from it. And I don't really think the area is aware of it and -- or other people are even aware of it, because like I heard you say from Garrison Dam down, so - But I want to make sure -- like there are terns and plovers nesting on Fort Berthold.

Organization: Three Affiliated Tribes

Commenter: Pete Coffey **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 47 **Comment Id:** 337706 **Coder Name:** NLANGDON

Comment Text: What I'm saying here, I was down in Pierre after that, you know, and there was this -- right under the bridge between Pierre and Fort Pierre there was this huge sandbar that was a wildlife refuge and it was gone. Did that affect any of the habitat and/or well-being of the plover and all of that? Did that do anything to that? Did that affect the plovers and all? Is that the reason why the opinion was amended? That was really a nice little habitat area there. My wife goes with me when we travel, and she'd always go down there when we were in Pierre, and she



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

was going to go check the refuge out and it was gone. You know, she was freaked out.

Organization: Three Affiliated Tribes

Commenter: Pete Coffey **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 47 **Comment Id:** 337705 **Coder Name:** NLANGDON

Comment Text: The -- I think there was archeological studies done prior to the construction of the dams. I know there was for Fort Berthold. Did they use that? Did they look at that in regards to that?

Organization: Three Affiliated Tribes

Commenter: Pete Coffey **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 44 **Comment Id:** 337551 **Coder Name:** NLANGDON

Comment Text: The other issue that came up with regard to water, we saw that there was going to be a feasibility study piping water from the Missouri out to western Kansas to help reduce pressure on the Ogallala aquifer.- I think that's the plan.- It's just a feasibility study at this point as far as I know. I have to look at the paperwork.-Our tribe is interested because if they want to do that we want to be on the pipeline. Because it's an idea we developed in like 2001, and actually did a feasibility study on piping out water. And that pipeline was good to go to Hays.- And in the meantime was going to provide water to communities along the line.- The big question of course is eventually if you tap the Missouri River to that degree where you're piping water all the way to western Kansas, probably disputes over water downstream as the water becomes less and less.- Does this address that? Now that I think about it, that study is coming out of the Kansas water office, or maybe they had to ask for permission to do it because we contacted them about the feasibility study. We had a discussion about a week or so ago, and the water issue came up. And they were talking about piping water and our past plans came up.- And we want to be involved somewhat finally. We were talking about how big of a pipe would this have to be to serve all communities all the way out past Hays, Kansas. That's where the aquifer is.-And how much water would you use by agriculture in the meantime. It would have to be massive. It's just a feasibility study so I'm assuming from my standpoint I'm thinking the feasibility is low.-But I know they have to do something.- That aquifer is going away.- If they want to continue agriculturally that's the best alternative.- Long-term effects, of course you start to look at what happened to Colorado.- That's an issue involving water.- So these are just things we kind of talked about.

Organization: Kickapoo Tribe

Commenter: Steve Corbett **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 44 **Comment Id:** 337547 **Coder Name:** NLANGDON

Comment Text: Sometimes tribal interests are competing as well. You have cultural preservation aspects, but our tribe also has economic development, in particularly water interests. There are plans by the tribe, they throw them out there before.- They are sitting on the shelf right now, to pipe water out of Missouri. I don't know if you know, but the Kickapoo tribe has struggled with water.- It's been an issue.- And in drought years we've had to truck in water.-



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

One solution has been basically a pipeline from the Missouri River all the way to the reservation. Any idea what kind of impact this kind of stuff would have on those kinds of plans?- From a legal standpoint would it make it illegal to do something like that? Basically would it prevent the tribe from exercising what they consider their sovereign rights to tap into the Missouri River?- Because I know that it's an issue for the tribe. We would have to look at what the treatise says now because the treaty that put the Kickapoo up against the Missouri River was from '32, and there were two larger -- it's a much smaller area now. But the tribe tries to promote the sovereignty in connection to the Missouri River. So there are issues there from a legal standpoint. They said that they still have the right to the Missouri River based on the treaty.

Organization: Kickapoo Tribe

Commenter: Steve Corbett **Page:** **Paragraph:**

Kept Private: No

AE25000 Affected Environment: Navigation (Substantive)

Correspondence Id: 4 **Comment Id:** 337439 **Coder Name:** NLANGDON

Comment Text: Navigation benefits associated with water-compelled rates must be analyzed and included in the scope of the MRRMP-EIS. Railroad freight rates are directly related to the availability of waterborne commerce. Regional economic benefits resulting from even the possibility of Missouri River navigation are significant and have national impact.

Organization: MOARC Association

Commenter: Franklyn W Pogge **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 55 **Comment Id:** 339113 **Coder Name:** NLANGDON

Comment Text: This slim management plan will fail because it ignores how the navigation channel cancels out other authorized purposes. Effective flood control is not possible without the river's connection to its floodplain. Period. The Army Corps will no longer proclaim it has "tamed" the river, but is it willing to inform the public that it is critical to prepare for flooding instead of letting the public assume the Corps will keep them dry?

Organization:

Commenter: Jim P Redmond **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 53 **Comment Id:** 338248 **Coder Name:** NLANGDON

Comment Text: The Missouri River is a vital part of the larger Inland Waterway System. However, Missouri River navigation has been challenged in the past with Master Manual revisions, lawsuits, and insufficient maintenance of structures. The State of Missouri is diligently working with industry and port authorities to reinvigorate this industry and to provide communities and companies with a competitive, environmentally practical, cost effective transportation advantage. Missouri River navigation flow support provides other benefits, including significant contributions to the flow of the Middle Mississippi River. The impact of alterations to Missouri River navigation flow support must include an analysis of effects to Mississippi River Navigation.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: MO Department of Natural Resources

Commenter: Sara Parker Pauley **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337506 **Coder Name:** NLANGDON

Comment Text: Another issue which also needs to be accounted for in the MRRMP-EIS process is the increased reservoir sedimentation resulting from any recovery-related efforts. Missouri River reservoirs have experienced a substantive increase in sedimentation in the past fifteen years. As system storage zones are adjusted due to increased sedimentation, the impacts to downstream navigation increase. Navigation service levels diminish while season lengths shorten on a more regular basis so long as guide curve triggers remain at their current levels. These impacts result in more costly operations for the navigation industry and may also affect other users as well depending on the timing of and degree to which the navigation flows are reduced.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

AE5000 Affected Environment: Wetlands (Substantive)

Correspondence Id: 67 **Comment Id:** 340267 **Coder Name:** NLANGDON

Comment Text: The EPA recommends that the NEPA document demonstrates that all wetlands, including both jurisdictional and those found to be non-jurisdictional, are being protected on federal land as outlined in EO 11990. This would involve mapping all wetlands within the project site, including springs, and assuring all avoidance measures are incorporated into the project. If non-jurisdictional wetlands on federal lands are going to be impacted, offsetting mitigation efforts will need to be incorporated.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

AE7000 Affected Environment: Air Quality (Substantive)

Correspondence Id: 67 **Comment Id:** 340273 **Coder Name:** NLANGDON

Comment Text: Air Quality Protection of air quality should be addressed in the NEPA document. The NEPA document should present existing air quality conditions in the project vicinity, addressing National Ambient Air Quality Standards, Prevention of Significant Deterioration standards, and air quality related values (AQRVs). The amount of stationary, mobile and non-road source emission activities, including hazardous air pollutants, should be quantified and disclosed. Particulate emissions from construction activities and ongoing operation of the roadways should also be addressed.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**



Kept Private: No

AE9500 Affected Environment: Water Quality (Substantive)

Correspondence Id: 67 **Comment Id:** 340272 **Coder Name:** NLANGDON

Comment Text: -Water quality impairments per State Clean Water Act Section 303(d) lists, draft or established total maximum daily loads (TMDLs), and potentially affected dischargers; including the following water quality-limited segments on the mainstem Missouri River: o Morony Dam to the Marias River for total phosphorus (Montana) o Marias Creek to Fort Peck Reservoir for copper (Montana) o Fort Peck Reservoir for lead and mercury (Montana) o Fort Peck Dam to the North Dakota border for temperature (Montana) o Lake Sakakawea for mercury (North Dakota) o Lake Sharpe for temperature (South Dakota) -Source Water Protection areas and explanation of how the project will be consistent with Source Water Protection planning measures; and -Potentially affected water treatment providers and possible changes to treatment processes.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

AL3500 Alternatives: Full Range of Alternatives (Substantive)

Correspondence Id: 3 **Comment Id:** 337671 **Coder Name:** KSMITH

Comment Text: Flood Mitigation Projects in Iowa's reach of the river are an absolute necessity in mitigating future flood impacts to the people of the Mo. River Valley and their property. Bigger Flood mitigation projects need to Happen up River starting just south of Sioux City Iowa. There are thousands of acres of opportunity for ACE to go in and generate more storage capacity in areas long since cut off from the Mo.River do to the Big Bank Stabilization & Navigation.

Organization: Mo. Valley Waterfowlers Association

Commenter: William J Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 73 **Comment Id:** 343622 **Coder Name:** NLANGDON

Comment Text: The Conservancy recognizes the need to center planning on threatened and endangered species recovery actions related to the BiOp or identified through the Effects Analysis process underway. However, the Conservancy is concerned with the use of "minimum effort to comply" language currently being used by the Army Corps of Engineers on these and other yet to be determined actions. It is our understanding a NEPA process must consider and formulate a "full range of alternatives" in the planning process and the use of minimum effort at these very early stages would appear to be in conflict with a robust process. It is very important the Effects Analysis and future planning steps be given adequate time, resources and freedom needed to determine appropriate future actions and how best to adaptively manage them.

Organization: The Nature Conservancy

Commenter: Jason Skold **Page:** **Paragraph:**



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Kept Private: No

Correspondence Id: 70 **Comment Id:** 342003 **Coder Name:** NLANGDON

Comment Text: 2. The scope of the EIS process shall not give deference to either congressionally authorized program, i.e., "authorized purposes" & ESA.

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 66 **Comment Id:** 341995 **Coder Name:** NLANGDON

Comment Text: 4. Alternatives that sustain and support the original engineering design considerations and maintenance requirements of the Bank Stabilization and Navigation Project should be given priority. The BSNP was established and engineered to be a self-scouring engineered structure. Alternatives considered must enhance the engineering performance of the BSNP and assure its engineering integrity. 5. Alternatives and analysis should sustain the congressional requirement that the BSNP fully support its design for navigation. Specifically, the channel must maintain, at a minimum, a nine-foot deep, 300-foot wide configuration to support navigation. Draft should be maintained to assure a nine-foot performance depth. Alternative flow arrangements which compromise these congressionally-mandated criteria during the navigation period of April through November should not be considered. 6. Flow regimens that undermine the eight authorized purposes should only be considered where no other possible alternative exists with regard to protection of the pallid sturgeon.

Organization: Missouri River Dredgers Group

Commenter: David A Shorr **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 341992 **Coder Name:** NLANGDON

Comment Text: - Recreational Access - Develop alternatives that will connect the river to the flood plain and also will connect people to the river. The public needs many more areas where they can access the river to hunt, fish, birdwatch and enjoy the river with family or friends. When you get people to the river they will support the activities that improve the health of the river.

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 341989 **Coder Name:** NLANGDON

Comment Text: We recommend the range of alternatives include a suite of options, even those outside of the agency's discretion, to meet the underlying project purpose. The NEPA document should summarize criteria used to screen reasonable alternatives and the reasoning used to eliminate alternatives in order to provide a rationale for the alternatives considered.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 65 **Comment Id:** 341988 **Coder Name:** NLANGDON

Comment Text: Alternatives should support a holistic approach to river operations and management that provides for both fish and wildlife and public health and safety. Resilient river systems support robust local and regional communities and economies over the long term, something community leaders and Governors look for to promote their states. In addition, such systems are far more resilient as conditions (e.g., land use, water supply, sediment supply, federal investments) change. Consistent with the explicit intent of NEPA, we recommend the USACE consider a full range of alternatives in terms of flows, land acquisition and habitat manipulation to better explore the relationships and effects of proposed conservation measures along the river. This should include alternatives that meet desired project objectives, but may currently be beyond the USACEs' authorities. Including such alternatives in the evaluation process is essential to inform managers and the public of the potential effects of those alternatives, as well as the relative costs and benefits of measures currently being implemented or those that might be chosen for future implementation. Only with such a comparison, can the public provide informed, meaningful input regarding this significant, long-term, national investment in Missouri River management and conservation.

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 341986 **Coder Name:** NLANGDON

Comment Text: Alternatives should support a more holistic approach to river operations and management that provides for both fish and wildlife and public health and safety. Resilient river systems support robust local and regional communities and economies over the long term. In addition, such systems are far more adaptable as conditions (e.g., land use, water supply, sediment supply, federal investments) change. Consistent with the explicit intent of NEPA, we recommend the Corps consider a full range of alternatives in terms of flows, land acquisition and habitat manipulation to better explore the relationships and effects of proposed conservation measures along the river. This should include alternatives that meet desired project objectives, but may be currently beyond the Corps' authorities. Including such alternatives in the evaluation process is essential to inform managers and the public of the potential effects of those alternatives, as well as the relative costs (including opportunity costs) and benefits of measures currently being implemented or likely to be chosen for future implementation. Only with such a comparison, can the public provide informed, meaningful input regarding this significant, long-term national, investment in Missouri River management and conservation.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 341608 **Coder Name:** NLANGDON

Comment Text: 4. With the lack of absolute scientific understanding necessary to recover the species, the EIS effort should focus on what can be accomplished through a balancing of interests as reflected by existing congressional intent ("authorized purposes" & ESA). This will serve both enhanced knowledge/recovery of the species while protecting social economic interest that have relied on infrastructure established under the contemporary regulated hydrograph.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339394 **Coder Name:** NLANGDON

Comment Text: Sustainability Recovery and mitigation efforts currently undertaken by the Missouri River Recovery Program are largely not sustainable under present operation and management and require repeated investments of increasingly limited government resources in a pattern of construction, repair and redesign. The EIS should comprehensively assess what changes to current river operation and management are necessary to sustainably recover listed species and mitigate for habitat losses. The EIS should clearly delineate the economic costs of temporary recovery and restorative actions and those operational and management changes required to provide more sustainable recovery and restoration. We would like to strongly emphasize that the assessment of a robust range of alternatives and the impacts associated with their implementation is the foundation of the NEPA process and real or perceived legislative or operational limitations which affect the scope and reach of the Missouri River Recovery Management Plan should not be used to limit the robustness and rigor of the NEPA analysis itself. A comprehensive examination of what is required for the sustainable management of the Missouri River will provide for and support public discourse over the choices made by the Corps in the development of the Management Plan.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339369 **Coder Name:** NLANGDON

Comment Text: The Missouri River Recovery Management Plan is an opportunity for the Corps to comprehensively address those aspects of current river system management which do not preserve the integrity of the chemical, physical and biological elements of the Missouri River system to the extent necessary to restore river species approaching extinction and a sustainable floodplain river ecology. The development of the Management Plan itself and the assembly of the analysis documentation required by NEPA are two separate, albeit linked in purpose, exercises which should be designed using different frameworks. In order to ensure that the Corps constructs a comprehensive and effective plan which integrates the many components of river system management in the most publicly transparent manner, the Corps must prepare stand-alone and separate documentation as required by NEPA. Specifically, the Corps must design a robust and comprehensive range of alternatives and a rigorous analysis of those alternatives, without regard to existing regulation or legislative authority. The National Environmental Policy Act directs the federal government to "improve and coordinate Federal plans, functions, programs, and resources (Section 101(b))" and to "utilize a systematic, interdisciplinary approach (Section 102(2))" in the execution of our responsibilities. Council on Environmental Quality regulations implementing NEPA require a "a full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts" (40 CFR 1502.1) and "rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)), including "reasonable alternatives not within the jurisdiction of the lead agency" (40 CFR 1502.14(c)). Although the final Missouri River Recovery Management Plan might capture an alternative the Corps has determined to be the most balanced management approach serving



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

all authorized purposes within existing Corps authority and traditional program implementation, the Corps' supporting NEPA compliance document must include a more comprehensive and inclusive assessment of all reasonable management alternatives and their impacts on the natural and human environment potentially going beyond what is currently authorized or previously implemented.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339300 **Coder Name:** NLANGDON

Comment Text: One of the most important considerations in plan formulation should be to not foreclose future opportunities to modify, improve, or redesign project features as conditions on the river continue to change. Sustainability will be critical and should be thought of in terms of sustainable processes and a range of functions rather than a single project design (i.e., 95% plans and specs). This should be viewed at a reach level to incorporate synergy among multiple projects and their effects on the hydraulics of the river and other project purposes. Use of expensive and intensive project features (i.e., pumping) should be considered only in especially rare circumstances, since they will likely be unaffordable over the long term. The need to maintain a viable connection between groundwater and surface water floodplain habitats will make it all the more important to address continued bed degradation along the river.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339259 **Coder Name:** NLANGDON

Comment Text: 10. Develop alternatives that address the timeframe for species recovery

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339254 **Coder Name:** NLANGDON

Comment Text: 3. Utilize an ecosystem approach to analyze effects and for developing alternatives. 4. Develop an adequate range of alternatives, including adjustment to current practices that support one authorized purpose to the detriment of other authorized purposes.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 56 **Comment Id:** 339243 **Coder Name:** NLANGDON

Comment Text: The Corps has achieved laudable habitat improvements in segments of the river. Working with the USFW in MO, the Big Muddy Wildlife Refuge has been one of the bright spots of river activity. However, MO still lags other states in habitat restoration. We hope that the MRRMP EIS will support increased habitat restoration and overall ecosystem health measures in Missouri and all states in the basin.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: Sierra Club

Commenter: Caroline Pufalt **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 56 **Comment Id:** 339241 **Coder Name:** NLANGDON

Comment Text: Broader issues of river health are in dire need of attention as new pressures arise. Water use in oil and gas development, reservoir water allocations, lowered aquifers, agricultural changes, climate change and out of basin diversion pressures all threaten river restoration. And this is on top of the overall losses related to bank stabilization, navigation and development. Only an ecosystem restoration approach can hope to grasp and address these cumulative impacts.

Organization: Sierra Club

Commenter: Caroline Pufalt **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 56 **Comment Id:** 339240 **Coder Name:** NLANGDON

Comment Text: The recovery of the pallid sturgeon, piping plover, and least tern are critical to preserving our natural heritage. However, recovery of those species can only be successful if broader ecosystem recovery needs of the river are also met. Narrow approaches, such as relying on fishery hatcheries, artificial sandbars etc. are important stopgap measures, but are inadequate to the task. Failure to take a broader approach to restoration of natural habitat and river functions only misleads the American public as to the meaning of "Recovery" in this plan. Is this recovery or just intensive care destined to keep these species indefinitely rare and at risk?

Organization: Sierra Club

Commenter: Caroline Pufalt **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 55 **Comment Id:** 339110 **Coder Name:** NLANGDON

Comment Text: Reliance on the fish hatchery part of the Recovery Program negates a range of other studies and construction.

Organization:

Commenter: Jim P Redmond **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 337751 **Coder Name:** NLANGDON

Comment Text: The League feels this MRRMP and EIS should strive to change the status quo on the Missouri River. We strongly urge the development of alternatives that will restore some of the habitat that has been lost or destroyed. This will ensure the long term survival and recovery of the listed species and improve the overall health of the river. To date, the majority of the MRRP efforts have occurred within the area of the BSNP due to the loss of over 522,000 acres of aquatic and terrestrial habitat between Sioux City and St. Louis. That loss is a result of the construction and ongoing maintenance of the BSNP. The IWLA asks the ACE to continue implementing recovery efforts in the area of the BSNP and strive to reconnect portions of the



lower river to the flood plain.

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 337749 **Coder Name:** NLANGDON

Comment Text: The League believes a thorough analysis of all the management alternatives and adaptive management actions will ensure that future management decisions and actions are continuously improved. Updating and incorporating what is learned through regular monitoring of the river and the current recovery efforts will provide benefits to the listed species and lead to the recovery of portions of the habitat that has been lost and/or destroyed along the Missouri River.

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

AL4000 Alternatives: New Alternatives Or Elements (Substantive)

Correspondence Id: 1 **Comment Id:** 337666 **Coder Name:** KSMITH

Comment Text: Create more backwaters and fewer chutes.

Organization:

Commenter: bob nebel **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 73 **Comment Id:** 343623 **Coder Name:** NLANGDON

Comment Text: More specific to the scope of this effort, the Conservancy believes the heart of the plan must find ways to balance the restoration of the key ecological factors or structural components of the river being; channel morphology, sediment regime, flow regime and longitudinal connectivity with the contemporary human uses of the river. A very good example of this balance and restoration of ecological structure in a modeling exercise is through the Flow Corridor efforts. Implemented project examples are exemplified through the levee setbacks occurring at L550 and L575. Efforts that solve problems to the human systems along the river by restoring the ecological structure of the river must be at the heart of this important planning effort.

Organization: The Nature Conservancy

Commenter: Jason Skold **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 72 **Comment Id:** 343589 **Coder Name:** NLANGDON

Comment Text: 2. The Management Plan must identify and recognize the need for management actions (e.g. flow and temperature manipulation from Fort Peck) targeted at opening the well-documented biological bottlenecks identified in the Conceptual Ecological Models for the various pallid life stages. The Plan must ensure that these needs are not



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

sacrificed in order to meet **habitat objectives for least terns and piping plovers.**

Organization: Montana Fish, Wildlife and Parks

Commenter: Bruce Rich **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 72 **Comment Id:** 343588 **Coder Name:** NLANGDON

Comment Text: 1. Relative to the current status of the pallid sturgeon Biological Opinion (based on the latest amendment letter dated February 6, 2013), the Management Plan must describe the adaptive actions that will be taken to provide flows for pallid sturgeon from Fort Peck Dam.

Organization: Montana Fish, Wildlife and Parks

Commenter: Bruce Rich **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 342346 **Coder Name:** NLANGDON

Comment Text: Habitat creation -Habitat creation/restoration is a fundamental need along the river.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 342002 **Coder Name:** NLANGDON

Comment Text: As far as within-channel habitats, we should continue to learn from our existing projects which appear to have very site-specific results. Based on much of our recent science in the Missouri River on small/young fish, it appears those fish need slower water areas which are not found in most of the current channel. Enlarging the river through channel widening will allow more within bank, but off-main channel habitats to form. Ideally these areas should be accessible by fish over a wide range (but not necessarily all) river stages over the course of most years. Floodplain connectivity with associated flow events can provide for critical lower flows and warmer water enhancing productivity of the Missouri River system.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 66 **Comment Id:** 341995 **Coder Name:** NLANGDON

Comment Text: 4. Alternatives that sustain and support the original engineering design considerations and maintenance requirements of the Bank Stabilization and Navigation Project should be given priority. The BSNP was established and engineered to be a self-scouring engineered structure. Alternatives considered must enhance the engineering performance of the BSNP and assure its engineering integrity. 5. Alternatives and analysis should sustain the congressional requirement that the BSNP fully support its design for navigation. Specifically, the channel must maintain, at a minimum, a nine-foot deep, 300-foot wide configuration to support navigation. Draft should be maintained to assure a nine-foot performance depth. Alternative flow arrangements which compromise these congressionally-mandated criteria during the navigation



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

period of April through November should not be considered. 6. Flow regimens that undermine the eight authorized purposes should only be considered where no other possible alternative exists with regard to protection of the pallid sturgeon.

Organization: Missouri River Dredgers Group

Commenter: David A Shorr **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 341994 **Coder Name:** NLANGDON

Comment Text: 12. Develop alternatives for sediment management (i.e. routing through all reservoirs)

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 341991 **Coder Name:** NLANGDON

Comment Text: - Sedimentation - Develop alternatives that utilize sediment built up in the reservoirs for restoration projects to benefit the listed species. This will help the recovery program and also prolong the life and capacity of the reservoir system.

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 341990 **Coder Name:** NLANGDON

Comment Text: - Genetic Diversity - Development of alternatives that preserve and protect the genetic diversity of the upper basin population of pallid sturgeon.

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 341607 **Coder Name:** NLANGDON

Comment Text: 3. In light of joint congressional authorization. the EIS need not consider management alternatives that do not recognize continuation of the "authorized purposes". 5. Only after the implementation of alternatives identified within the scope of the EIS process noted above, and with sufficient time to collect and analyze appropriate scientific data, shall the agencies evaluate/consider broader alternatives under a separate EIS process.

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 68 **Comment Id:** 341603 **Coder Name:** NLANGDON

Comment Text: Such a pilot project also helps fulfill two of the tasks in the Recovery Plan: Recovery Outline 1.1.5. Restore the dynamic equilibrium of sediment transport within the Missouri River. Recovery Outline Narrative 1.1.5. Main Stem Missouri River darns have trapped



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

sediments in reservoirs and bank stabilization has reduced erosion in riverine reaches. Additional sediment input, initially within high-priority recovery areas, is necessary to restore instream habitats and turbid waters. Opportunities to restore the dynamic equilibrium of sediment transport should be pursued. Additional research is needed to determine mechanisms for transporting sediment past dams and into river reaches downstream. Recovery Outline Task 2.2.4. Develop pilot projects on selected dams to transport sediment past the dam and into the river reaches downstream. Recovery Outline Narrative 2.2.4. The U.S. Army Corps of Engineers and U.S. Bureau of Reclamation should design and develop pilot projects to increase sediment transport past selected dams. Models should be used to predict effects of increased sediment supply and changing hydrographs on bed condition.

Organization: Law Offices of Robert J. Vincze

Commenter: Robert J Vincze **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 68 **Comment Id:** 341597 **Coder Name:** NLANGDON

Comment Text: I further request that the agencies implement a pilot project utilizing beach nourishment technologies(1) to transfer sediment from past a main stem dam into a downstream reach of the Missouri River. Sediment transfer is a way to restore habitat and function to the Missouri and Mississippi River ecosystems while maintaining storage capacity for flood control, reducing bank erosion, and minimizing impacts on other uses of the rivers. The main stem dams trap sediment resulting in a less turbid river. According to the Recovery Plan for the Pallid Sturgeon (Recovery Plan)(2), pallid sturgeon historically occupied turbid river systems (3). They adapted to this turbid habitat, so increasing the turbidity of the river ostensibly benefit the pallid sturgeon (4). Taking sediment from behind the dams to increase the turbidity of the river also will help maintain the flood-storage capacity of the system. In addition, turbid water would erode banks less than clear water, all other things equal. Moreover, sediment transfer should not significantly impact the authorized purposes of the Missouri River Main Stem Reservoir System that rely on flow management or water temperature: hydropower, downstream power supply (thermal cooling), flood control, and navigation (provided the largely self-scouring design of the system is unchanged). Implementing a pilot project for such sediment transfer from a dam to the Missouri River is squarely within the Corps' Flood and Coastal Storm Damage Reduction Program. One of the purposes of this program is to accelerate the study and design process for inland flood damage reduction including the sedimentation response of flood-control channels.

Organization: Law Offices of Robert J. Vincze

Commenter: Robert J Vincze **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 66 **Comment Id:** 340259 **Coder Name:** NLANGDON

Comment Text: 3. Alternatives that increase sediment releases of material held behind the five main stem dams should be given priority. As demonstrated by the National Science Foundation reports, over 70% of the sediment in the Missouri River has been eliminated. This material is necessary for the natural support of the pallid sturgeon, to curtail degradation in the lower River, and to support economic purposes to the benefit of the State of Missouri regarding the construction industry, specifically san1.

Organization: Missouri River Dredgers Group



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: David A Shorr **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 66 **Comment Id:** 340223 **Coder Name:** NLANGDON

Comment Text: 1. The Management Plan should consider only alternatives consistent with the eight authorized purposes approved by Congress and appropriate cases evaluating those purposes. As such, flood control and navigation should be given priority and the other six purposes fully incorporated into any alternatives considered inside the context of the evaluation. It is imperative that the Corps not be distracted by the numerous issues that lay outside the scope of the congressionally-authorized purposes. Establishing appropriate "sideboards" on the alternative analysis is paramount to the success of this evaluation.

Organization: Missouri River Dredgers Group

Commenter: David A Shorr **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 65 **Comment Id:** 340210 **Coder Name:** NLANGDON

Comment Text: Flow modifications - Flows are a critical part of aquatic habitat creation, maintenance, and function. The development of a flow corridor would allow for planned flows that do not impact infrastructure while providing for ecological needs. At the same time, a flow corridor would enhance flood risk reduction during natural high flow events. We recommend continued progress on the previous items to provide a better foundation on which to strategically modify river flows. It is clear that areas with more flow diversity provide more diverse habitats and functions than areas with consistent flow. Given the increasingly compelling need for slow water for successful native fish recruitment, we strongly recommend developing scenarios for experimental low flows during mid-late summer. We believe carefully designed, implemented and monitored flow experiments with specific decision triggers could help us answer several critical questions regarding pallid sturgeon age 0-1 life stage, as well as other native fishes, including pallid sturgeon prey species. The USACE should consider the full range of flows from magnitude, seasonal, and duration perspectives along with the impacts and benefits of associated land purchases and habitat modifications.

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 65 **Comment Id:** 340208 **Coder Name:** NLANGDON

Comment Text: Sediment management - Sediment is the key building block for habitat on the Missouri River. An adequate supply and cut and fill processes to create and maintain habitat are needed for a sustainable Missouri River. Additionally, turbidity within the Missouri River system has been significantly altered thereby affecting the biotic communities and their associated habitats. The NCPC supports management actions that would restore and maintain a more natural sediment and turbidity regime for the Missouri River. Levee setbacks (see land acquisition comments)- Levee setbacks could provide reach-wide benefits for flood damage reduction and reduce federal flood repair expenditures. These features would increase floodplain connectivity with the river and provide additional opportunities for terrestrial and aquatic habitat creation. A good example is the recent federal levee setback at Copeland Bend east of Nebraska City. We are rapidly developing the tools to analyze the potential benefits (i.e.,



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

habitat, flood damage reduction, economic, infrastructure) of strategic levee setbacks (McMahon 2012 b). Those tools should be incorporated in the alternatives development and affects analyses to compare the most effective options for fish, wildlife, and local communities.

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 65 **Comment Id:** 340207 **Coder Name:** NLANGDON

Comment Text: Habitat creation - Habitat creation/ restoration is a fundamental need along the river. With the loss of over 522,000 acres of channel and meander habitats, public trust fish and wildlife simply need a larger habitat base if they are to maintain sustainable populations into the future. Much of the aquatic habitat restoration in the lower river will require some form of mechanical creation (i.e., structure modification, dredging of chutes/backwaters/ access channels). At the same time, it is important to use our expanding knowledge base to create adequate habitat diversity via natural river processes. Aquatic habitat creation will be resource intensive and should use a combination of techniques depending on the opportunities at any one location. One important consideration should be to keep open future opportunities to modify, improve, or redesign project features as conditions on the river continue to change. Sustainability will be critical and should be viewed at a reach level to incorporate synergy among multiple projects and their effects on the hydraulics of the river and other project purposes. Use of expensive and high maintenance project features (i.e., pumping water) should be considered only in especially rare circumstances, since they will likely be unaffordable over the long term. The need to maintain a viable connection between groundwater and surface water floodplain habitats will make it all the more important to address continued bed degradation along the river. With regard to within-channel habitats, we should continue to learn from our existing mitigation projects which appear to have very site-specific results. Based on much of our recent science in the Missouri River on small/young fish, it appears these fish need slower water habitat areas which are not found in most of the current channel. Enlarging the river through channel widening will allow more within bank, but off main channel habitats to form similar characteristics to the 39 and 59 mile reaches upstream of Sioux City. Ideally these areas should be accessible by fish over a wide range (but not necessarily all) river stages over the course of most years.

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 65 **Comment Id:** 340206 **Coder Name:** NLANGDON

Comment Text: Land acquisition and flowage easements - A land base is critical for implementing projects necessary to meet both the species and mitigation goals. Many of the critical river processes needed to support these species can only occur with a larger land base connected to the river. Such lands are needed for both terrestrial and aquatic habitat creation/restoration and processes while at the same time providing a secure flood conveyance corridor to minimize flood damages on adjacent lands and infrastructure, thereby increasing public safety, much like the original Pick-Sloan plan envisioned. The details would need to be based on site-specific engineering, land opportunities and hydrologic modeling. Flowage easements could be considered if they facilitate modest levee relocations to a hydraulically improved (from a flood damage reduction perspective) alignment. Such a corridor would provide



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

added operational flexibility for flood damage reduction and potentially reduce long-term federal investments by avoiding costly and repeated levee repairs and disaster payments due to poor alignment (which costs should be included in the cost benefit analyses).

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 65 **Comment Id:** 340200 **Coder Name:** NLANGDON

Comment Text: We suggest the most successful strategy to provide for the three listed species and meet the mitigation objectives is to work towards a flow corridor that would include the desired biological and habitat features that are consistent with the other project purposes. A functional flow corridor would also address the principles and guidelines most effectively.

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 65 **Comment Id:** 340196 **Coder Name:** NLANGDON

Comment Text: The reach adjacent to Nebraska is one of the most constricted reaches on the entire channelized Missouri River and has contributed to repetitive tax payer bailouts after every major flood. Because of this over encroachment, there is a need to improve flood risk reduction by increasing flood storage capacity (McMahon 2012 a) on the floodplain as well as increasing ecosystem goods and services needed to help meet the demand from over 1,000,000 Nebraska citizens who live within a one hour drive of the Missouri River. The NGPC therefore supports establishment of a flow corridor between Sioux City and the Kansas/Nebraska state line that would build riverine habitats and recover ecosystem functions in addition to storing flood waters (NGPC 2011). We believe making this reach of river healthier ecologically will not only help diversify habitats needed for listed species and 41 other declining native fish species, but help make it more attractive as a regional recreational area. It would provide multiple economic benefits to the communities along the river in addition to helping attract new businesses and people who are looking for this type of amenities before they relocate (Niemi 2006).

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339301 **Coder Name:** NLANGDON

Comment Text: In contrast, lower flow experiments do not depend on additional land acquisition. Given the increasingly compelling need for slow water for successful native fish recruitment (based on our 10 years of monitoring and research), and the recommendations of MRRIC and the Independent Scientific Advisory Panel, we strongly recommend developing scenarios for experimental low flows during mid-late summer. We believe carefully designed, implemented and monitored flow experiments with specific decision triggers could help us answer several critical questions regarding pallid sturgeon age 0-1 life stage, as well as other native fishes, including pallid sturgeon forage species. In addition, such experiments would also allow us to understand effects to other project purposes or adjacent lands and develop measures to address them as appropriate. In summation, the Corps should consider the full



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

range of flows from magnitude, seasonal, and duration perspectives along with the impacts and benefits of associated land purchases and habitat modifications. Flows are a critical part of aquatic habitat creation, maintenance, and function. We see a much larger range of habitats (macro, meso, and micro) and functions in the lowest reaches of the river. While some of this is simply due to the size of the river, much of it is a result of a variety of river flows over the course of the year. In monitoring aquatic habitat development, it is clear that areas with more flow diversity develop faster and provide more diverse habitats and functions than areas with consistent flow further up the river. In a future of likely declining budgets, it is imperative to formulate project features that work with the river to the maximum extent practicable.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339300 **Coder Name:** NLANGDON

Comment Text: One of the most important considerations in plan formulation should be to not foreclose future opportunities to modify, improve, or redesign project features as conditions on the river continue to change. Sustainability will be critical and should be thought of in terms of sustainable processes and a range of functions rather than a single project design (i.e., 95% plans and specs). This should be viewed at a reach level to incorporate synergy among multiple projects and their effects on the hydraulics of the river and other project purposes. Use of expensive and intensive project features (i.e., pumping) should be considered only in especially rare circumstances, since they will likely be unaffordable over the long term. The need to maintain a viable connection between groundwater and surface water floodplain habitats will make it all the more important to address continued bed degradation along the river.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339299 **Coder Name:** NLANGDON

Comment Text: In response to a request from the Corps, the Service provided preliminary recommendations on several specific measures we believe are needed to realize our conservation objectives along the river, consistent with other project purposes. These measures should be incorporated into various plan formulations as the Corps explores potential alternatives for the EIS. Because of their importance, we reiterate them here: Land acquisition and flowage easements -A land base is critical to implement projects necessary to meet both the species and mitigation goals. Many of the critical river processes needed to support these species can only occur with a larger land base connected to the river (i.e. much like the Mississippi and Atchafalaya River systems). Such lands should allow for both terrestrial and aquatic habitat creation/restoration and processes while providing a secure flood conveyance corridor that would minimize flood damages on adjacent lands, infrastructure, and public safety, much like the original Pickard & Sloan plan. The details of how this would work could be based on site-specific engineering, land opportunities and hydrologic modeling. Flowage easements could be considered if they facilitate modest levee relocations to a hydraulically improved (from a flood damage reduction perspective) alignment. Such a corridor would provide added operational flexibility for flood damage reduction and potentially reduce federal investments long-term by avoiding costly and repeated levee repairs and disaster payments due to poor alignment (and which costs should be included in the cost benefit analyses). Habitat creation -Habitat



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

creation/restoration is a fundamental need along the river. With the loss of over 522,000 acres of meander habitats, fish and wildlife simply need a larger habitat base if they are to maintain sustainable populations into the future. Much of the aquatic habitat restoration in the lower river will require some form of mechanical creation (i.e., structure modification, dredging of chutes/backwaters/access channels). At the same time, it is important to use our ever expanding knowledge base to find the "sweet spot" of mechanical habitat creation and habitat formation via natural river processes. Certainly aquatic habitat creation will be the most resource intensive and should use a combination of techniques depending on the opportunities at any one location.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339298 **Coder Name:** NLANGDON

Comment Text: We believe the most successful strategy to provide for the three listed species and the mitigation objectives is to work towards a flow corridor that includes the desired biological a11d habitat features while also consistent with the other project purposes to the maximum extent practicable. A functional flow corridor would also address the principles and guidelines most effectively.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 60 **Comment Id:** 339272 **Coder Name:** NLANGDON

Comment Text: Further, the EIS should reflect the USACE's duty to the citizens of Missouri to fulfill its obligations under the BSNP.

Organization: Missouri Department of Conservation

Commenter: Robert L Ziehmer **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 60 **Comment Id:** 339270 **Coder Name:** NLANGDON

Comment Text: The U.S. Congress authorized the BSNP Mitigation Act to compensate for the loss of more than half a million acres of Missouri River habitat that occurred over the course of decades between St. Louis, Missouri and Sioux City, Iowa. The loss of public trust resources is a loss for the citizens of Missouri and a majority of the loss (305,000 acres) occurred in Missouri. To date, roughly 30 percent of the 105,000 acres required for compensatory mitigation in Missouri has been completed. These existing mitigation lands provide partial restitution to Missouri citizens by providing Missourians and visitors with greater access to the river for floodplain fishing, hunting and other wildlife-associated recreation. Further, the nearly 72,000 acres of habitat yet due as restitution to the citizens of Missouri represents an opportunity for enhanced public recreation, restoration of lost habitat for fish and wildlife, economic growth and ecological sustainability that is necessary to also maintain a wide variety of uses along the river, including agricultural, water supply and other uses.

Organization: Missouri Department of Conservation

Commenter: Robert L Ziehmer **Page:** **Paragraph:**



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339261 **Coder Name:** NLANGDON

Comment Text: 15. Identify and analyze trade-offs for maintaining 8-month navigation flows 16. Identify and conduct economic analysis of alternatives to navigation flows

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339258 **Coder Name:** NLANGDON

Comment Text: 9. Determine ecological benefits and analyze economic effects of maintaining a minimum-flow threshold in lieu of 'power peaking'

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339257 **Coder Name:** NLANGDON

Comment Text: 8. Determine ecological effects of 'power peaking' dam operations and determine an ecologically valid minimum-flow threshold in lieu of 'power peaking'

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339256 **Coder Name:** NLANGDON

Comment Text: 7. Identify flows that will create and maintain emergent sandbar habitat (ESH).

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 57 **Comment Id:** 339245 **Coder Name:** NLANGDON

Comment Text: The Missouri River Recovery Program ought to be fully funded until at least 2018, and every effort aimed at averting regional extirpation in the wild. What actions to take should be advised by experts in pallid sturgeon biological needs. Failing that, available resources and every technologically feasible alternative ought to be expended to increase wild biological representation in hatchery stock.

Organization: Sierra Club Missouri River Activist Network

Commenter: Thomas Ball **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 57 **Comment Id:** 339244 **Coder Name:** NLANGDON

Comment Text: The 2003 amended biological opinion document states (page 51 of the pdf) that: "The pallid sturgeon sub-population in this river reach is aging and declining in status. This



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

population is estimated at 151 individuals with 95 percent confidence intervals of 89 to 236 individuals (Kapuscinski 2003). This is down from an estimated 166 individuals in 2002 and 178 individuals in 2001. Kapuscinski (2003) estimates that this population of wild pallid sturgeon will be extinct by 2018 based on trend data collected for the period 1991-2003. The Service has interpreted Kapuscinski's conclusion of extinction to mean that this sub-population would be extirpated by 2018". (2003 amended biop, pdf pg 51.) The USACE ought to expend any and all available resources necessary to avert this condition. This includes massive acceleration of monitoring; capture and reproduction of adult, genetically wild pallid sturgeon in the hatcheries; and increase and monitoring of habitat that pallid sturgeon experts believe to be used for reproduction in the wild.

Organization: Sierra Club Missouri River Activist Network

Commenter: Thomas Ball **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 51 **Comment Id:** 338238 **Coder Name:** NLANGDON

Comment Text: 4. What management actions should be considered that may meet the objectives of endangered species compliance and habitat mitigation for the Management Plan and Environmental Impact Statement? Answer: Reconnect some of our old land locked ox-bow's.

Organization: Mo Valley Waterfowlers Association

Commenter: Bill Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 51 **Comment Id:** 338236 **Coder Name:** NLANGDON

Comment Text: 1. What are the significant issues and resources that should be considered within the context of the Management Plan and EIS? Answer: The need for sediment transportation, solutions to sediment depletion. 2. Why are these issues and resources important? Answer: Natural sediment transportation is a sustainable means of addressing long term habitat issues of the lower Mo. River & Gulf.

Organization: Mo Valley Waterfowlers Association

Commenter: Bill Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 21 **Comment Id:** 337943 **Coder Name:** NLANGDON

Comment Text: A more natural flow regime is integral to the river species recovery

Organization:

Commenter: Marian Maas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 337754 **Coder Name:** NLANGDON

Comment Text: - Water Supply - Can alternatives be developed that more closely mimic the historic flows of the Missouri River, flows beneficial to native fish and wildlife species including the listed species?

Organization: Izaak Walton League



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Paul Lepisto **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 19 **Comment Id:** 337690 **Coder Name:** KSMITH

Comment Text: It should be considered that this process looks at the Gulf Coast Restore Act as a possible revenue source to address sediment deprivation in the Missouri River.

Organization: Mo Valley Waterfowler Association

Commenter: Bill Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 18 **Comment Id:** 337689 **Coder Name:** KSMITH

Comment Text: Habitat restoration projects and simulating a more natural flow regime are critical to endangered species recovery.

Organization:

Commenter: Brook Spear **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 13 **Comment Id:** 337683 **Coder Name:** KSMITH

Comment Text: Will bed degradation and sediment issues be addressed as part of the plan? And then he further states: Clarification of sediment or lack of?

Organization:

Commenter: Chris Larson **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 10 **Comment Id:** 337680 **Coder Name:** KSMITH

Comment Text: The 2003 biological says that a more natural flow regime is critical to endangered species survival, but was not recommended in the reasonable and prudent alternatives. Will there be more natural flow regimes required as part of the management plan? Will there be any teeth to such a requirement, or will navigation needs have a priority in flow regime changes?

Organization:

Commenter: Brook Spear **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 3 **Comment Id:** 337672 **Coder Name:** KSMITH

Comment Text: Mo. Valley Waterfowlers Association Supports more Shallow Water Habitat projects with in the state of Iowa along the Mo. River and we certainly believe Iowa's congressional delegation should strongly look at and Support Larger Flood Mitigation projects the help protect the people of the Mo. Valley why as a by -product of said effort meet habitat restoration goals. Its a Win, Win all around the board now and for future generations of Iowan's.

Organization: Mo. Valley Waterfowlers Association

Commenter: William J Smith **Page:** **Paragraph:**



Kept Private: No

Correspondence Id: 3 **Comment Id:** 337670 **Coder Name:** KSMITH

Comment Text: Lands should be sought to be bought or secured by perpetual Flood Mitigation Easement agreements. This action would call for ACE being able to generate more flood water storage capacity with in our reach of the Mo. River why at the same time as a by product provide the beneficial habitat needs of the 3 endangered species and all wildlife in general associated with the Mo. River.

Organization: Mo. Valley Waterfowlers Association

Commenter: William J Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 3 **Comment Id:** 337669 **Coder Name:** KSMITH

Comment Text: However we do share an opinion to this matter that would Greatly increase the ACE ability to Mitigate Future Flood Waters in the lower reach of the Mo. River below Gavins Point south to the Mo. & Iowa State line. We strongly feel that efforts and revenues must be put in place to Support a Much larger Flood Mitigation program/projects with in the Iowa reach of the Mo. River.

Organization: Mo. Valley Waterfowlers Association

Commenter: William J Smith **Page:** **Paragraph:**

Kept Private: No

AL4500 Alternatives: No Action (Substantive)

Correspondence Id: 3 **Comment Id:** 337668 **Coder Name:** KSMITH

Comment Text: Mo. Valley Waterfowlers Association Supports the Corps (ACE) in it's efforts to Establish shallow water habitat projects with in the Mo. River basin in Iowa & Nebraska.

Organization: Mo. Valley Waterfowlers Association

Commenter: William J Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340262 **Coder Name:** NLANGDON

Comment Text: We recommend the existing environmental baseline (described in greater detail in subsequent . section) be used as the basis for comparison of impacts across all alternatives, including the No Action alternative. In the past, some projects have compared the action alternatives to the No Action alternative for the impact analysis. In our experience, it is more difficult to understand the project's impacts without an assessment against existing conditions. Additionally, if the No Action alternative includes actions that would meet the project purpose and need, it is effectively an action alternative. We recommend for clarity that alternatives meeting the purpose and need be analyzed as action alternatives.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No



Correspondence Id: 64 **Comment Id:** 339374 **Coder Name:** NLANGDON

Comment Text: Alternatives Analysis and the No Action Alternative Consistent with our comments during the scoping process for the Missouri River Ecosystem Restoration Plan in 2009, we similarly recommend for this EIS that you characterize the "no action" alternative to be a more literal "no action" rather than using current program status quo to represent "no action," (i.e., no change). CEQ guidance does allow either perspective in the interpretation of the definition of "no action"; however, we believe that setting a baseline of river resource status based on no Federal restoration program (i.e., no project) both recognizes the very real possibility that future Federal resources for river restoration might be drastically limited or absent (e.g., budget constraints or opposed within individual basin States) and better provides for the robust range and rigorous assessment of alternatives required under CEQ regulations. Reliance upon existing programs or a "no change" alternative, in this case, is overly presumptive and represents an 'action' in-and-of-itself. The essential separation between the "no action" alternative and successive "action" alternatives could be difficult to distinguish in public review. Defining "no action" as "no project" provides for a robust range of possible alternatives, distinct separation between alternatives and "sharply defines the issues and provides for a clear basis for choice among options by the decisionmaker "(40 CFR 1502.14).

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

AM1000 Adaptive Management (Substantive)

Correspondence Id: 27 **Comment Id:** 337444 **Coder Name:** NLANGDON

Comment Text: Does adaptive management mean that you can adjust your actions as long as you remain within the approved alternative or does it allow you to go outside of that if needed?

Organization:

Commenter: Steve Thede **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340278 **Coder Name:** NLANGDON

Comment Text: Adaptive Management The scoping notice and fact sheet indicate that the EIS and recovery plan will utilize adaptive management (AM). The EPA recommends that the NEPA document include a detailed explanation of the specific approach to adaptive decision making that will be applied. To avoid confusion about what is meant by AM for a particular project, we recommend using Table 2 below to identify the proposed approach to adaptive decision making. We recommend that the proposed adaptive decision making description include the methods by which it will be determined a management change is needed for the project. This description should include quantitative and observational methods and thresholds that will be used. Wherever possible, we recommend the AM plan include the presentation of a specific anticipated range of management responses and actions. If the selected adaptive decision making process includes monitoring, we recommend that both the NEPA document and ROD include commitments to the funding and resources needed to assure that the monitoring takes place for as long as required.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 65 **Comment Id:** 340211 **Coder Name:** NLANGDON

Comment Text: The NGPC continues to endorse sustainable and resilient river management within an adaptive management framework. We believe the refinements to the existing program will help clarify what has been learned since the 2003 Biological Opinion was issued. Identification of specific decision points and performance criteria will provide a much better blueprint for agencies and the public for future river operations and management. Developing this decision making framework with public input will focus management efforts on measures that avoid jeopardy to the listed species and compensate for the losses of public trust fish and wildlife resources.

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339381 **Coder Name:** NLANGDON

Comment Text: Adaptive Management The EIS should evaluate possible modifications which might be made to the Management Plan based on Plan performance, including metrics for measuring the achievement of or progress towards achievement of objectives and the extent of possible future modifications to Management Plan design and effect. Without clear delineation of the requirements of and limitations to an adaptive management approach, the coverage provided under NEPA for this Federal action might be inadequate and require supplemental NEPA compliance action in the future. The EIS should evaluate the size and character of the monitoring and assessment effort required to support adaptive management under this Plan. The Management Plan should identify how achievement of the objectives of the Plan will be measured (i.e., metrics), what constitutes success or progress (i.e., benchmarks or criteria) and how that information will be communicated among management partners and the public. In order to support that component of adaptive management, the EIS should identify the kind of data which should be collected as part of Management Plan implementation. We believe it is critical that the Management Plan provide clear, detailed structure to a monitoring and assessment component as part of the adaptive management approach. It is our expectation that without adequate funding of this component, an adaptive management approach is not implementable.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339307 **Coder Name:** NLANGDON

Comment Text: The Service continues to endorse river management within an adaptive management framework. We believe the refinements to the existing program will help clarify what has been learned since the 2003 Biological Opinion, and apply that knowledge to the best effect for the species. Identification of specific decision points and performance criteria will provide a much better blueprint for both agencies and the public in on-going river operations and management. Ideally they will foster greater predictability in next steps as they will be



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

identified beforehand, with considerable opportunity for input from the public. This will help focus management efforts on specific measures to avoid jeopardy to listed species and compensate for losses of the public's fish and wildlife resources.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339266 **Coder Name:** NLANGDON

Comment Text: 26. Examine guidelines for water users (example power plants) and adaptive management thresholds in light of impact trigger points.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339264 **Coder Name:** NLANGDON

Comment Text: 19. Consider the Missouri River as a tribal cultural resource and work consultation and information sharing for tribes into adaptive management planning framework.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339253 **Coder Name:** NLANGDON

Comment Text: 1. The adaptive management approach should be driven by data rather than by the agency's actions. 2. Consider State and Federal land management and resource agencies associated with the Missouri River. Work consultation and information sharing into adaptive management framework.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339251 **Coder Name:** NLANGDON

Comment Text: We support revising the Missouri River Recovery Program (MRRP) to include an adaptive management approach can make the program more responsive to short-term outcomes from management actions and future conditions of the natural environment. It will also offer the opportunity to consider changing social and political interests related to the Missouri River operation.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 337750 **Coder Name:** NLANGDON

Comment Text: The League believes a thorough analysis of all the management alternatives and adaptive management actions will ensure that future management decisions and actions



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

are continuously improved. Updating and incorporating what is learned through regular monitoring of the river and the current recovery efforts will provide benefits to the listed species and lead to the recovery of portions of the habitat that has been lost and/or destroyed along the Missouri River.

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337737 **Coder Name:** NLANGDON

Comment Text: I would recommend that everyone involved with adaptive management on the Missouri River, particularly those tasked with evaluating uncertainty, carefully read the executive summary and Appendices B and C of USACE (2011). Given the costs of acquiring these data, it's not acceptable for the term "uncertainty" to be inclusive of both true uncertainty and the failure to become familiar with clearly written documents that were funded by USACE in consultation with USFWS. The failure of the Integrated Science Program and the Core Inter-agency Team to recognize and understand the universe of science that has already been done on the Missouri River is one of the biggest obstacles to the implementation of a successful adaptive management program. From a scientific perspective, it should no longer be considered valid to simply reiterate the simple and implicit conceptual model of USFWS (2003) that "dams are bad for terns and plovers because they result in fewer acres of ESH, which causes low fledge-ratios, which will lead to population declines". The paradigmatic construct of population regulation during the breeding season has been demystified for many years via population models, no matter how uncertain their parameter values, that have pointed to inter-annual survival across the non-breeding season as the most likely driver of ILT and PIPL population trajectories (Akcakeya et al. 2003, Buenau et al. 2013).

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337720 **Coder Name:** NLANGDON

Comment Text: For some management actions, effects may be evaluated relative to single events (e.g., how did a single high flood-control release event affect habitat conditions?). For other management actions, effects may be evaluated relative to the cumulative effects of frequent management actions (e.g., hydropower production) on annual reproduction or habitat conditions. In both of these cases, annual evaluation of monitoring data after the breeding season should be possible to inform discussions related any adjustments to these same management actions during the following breeding season. If the goal of adaptive management is to continually learn from monitoring data and adjust actions accordingly, then adaptive management programs should be designed to provide useful feedback for these discussions on an annual basis. The annual process of discussing monitoring results relative to specific management actions will help all participants in planning and adaptive management understand regular interactions between river management and endangered species. With a well-designed management-based monitoring program, monitoring data can provide insight about many different types of management effects at short time horizons. However, when objectives can only be evaluated (often poorly) at long time horizons (e.g., population trend, which requires a specific type of data collection that is both costly and time consuming), the focus of a monitoring programs is directed away from collecting information on metrics that would provide more



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

immediate feedback on interactions between specific management actions and endangered species.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 22 **Comment Id:** 337691 **Coder Name:** KSMITH

Comment Text: "Didn't catch what is meant by adaptive management."

Organization:

Commenter: Steve Thede **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 9 **Comment Id:** 337679 **Coder Name:** KSMITH

Comment Text: Will adaptive management actions be limited to consequences evaluated? Since the biological opinion includes flow releases, will the impact of flow releases on the Mississippi segment be analyzed? Will the effects of flows from the Missouri be considered with regard to impacts of hypoxia in the Gulf and nutrient loading?

Organization:

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

AP1000 Authorized Purpose: General (not pertaining to one authorized purpose) (Substantive)

Correspondence Id: 4 **Comment Id:** 337438 **Coder Name:** NLANGDON

Comment Text: No authorized purpose should experience adverse impacts as a result of any future MRRP operations. All current Congressional authorizations must be maintained.

Organization: MOARC Association

Commenter: Franklyn W Pogge **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 341611 **Coder Name:** NLANGDON

Comment Text: 11. The agency should recognize that ISAP recommendations were provided without consideration of "authorized purposes" and social and economic considerations.

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 60 **Comment Id:** 339271 **Coder Name:** NLANGDON

Comment Text: In summary, the proposed EIS should continue to balance all authorized purposes of the Missouri River to maximize benefits for Missourians and the nation. Science-



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

based planning can promote agriculture, ensure sustainable economic development, and enhance fish and wildlife benefits.

Organization: Missouri Department of Conservation

Commenter: Robert L Ziehmer **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 60 **Comment Id:** 339269 **Coder Name:** NLANGDON

Comment Text: The Missouri Department of Conservation (Department) supports all authorized purposes of the Missouri River. The Department is charged by citizen initiative through the Missouri Constitution to protect and manage forest, fish and wildlife resources in the State of Missouri. Missourians overwhelmingly support forest, fish and wildlife conservation with over 91 percent indicating their interest. Over two million residents and visitors participate in fishing, hunting, or wildlife-associated recreation in Missouri and most Missourians agree (79 percent) that the Department should make an effort to restore animals that once lived or are currently very rare in the state. There is an over \$11 billion economic impact in Missouri from wildlife-related recreation and the forest products industry. Fish and wildlife recreation and the forest products industry support over 95,000 jobs. Specifically on the Missouri River, recreation impacts range from over \$20 million upwards to over \$38 million. The Missouri River is a significant resource for the citizens of Missouri.

Organization: Missouri Department of Conservation

Commenter: Robert L Ziehmer **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 53 **Comment Id:** 338246 **Coder Name:** NLANGDON

Comment Text: This proposed EIS is intended to re-evaluate the current management actions of the Missouri River Recovery Program (MRRP), leading to the creation of a Management Plan (MRRMP) to meet the 2003 Amended Biological Opinion (BiOp) and the Bank Stabilization and Navigation Project (BSNP) Mitigation Act requirements on which the MRRP is based. The rigorous science programs that are being established for the MRRMP should inform decisions, but the US Army Corps of Engineers (Corps) must ensure that implementation is based on the authorized purposes. The MRRMP/EIS must be developed within the framework of the existing operational authorities in the Missouri River Basin, and must only implement the MRRMP and accompanying adaptive management strategy in accordance with current legal limitations.

Organization: MO Department of Natural Resources

Commenter: Sara Parker Pauley **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337517 **Coder Name:** NLANGDON

Comment Text: No authorized purpose should experience adverse impacts of any type as a result of any future MRRP operations. All current Congressional authorizations must be maintained for generations to come.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No



CC1000 Consultation and Coordination: General Comments (Substantive)

Correspondence Id: 32 **Comment Id:** 337451 **Coder Name:** NLANGDON

Comment Text: How long do you expect the scoping stage of this process to take?

Organization:

Commenter: Caroline Pufalt **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341621 **Coder Name:** NLANGDON

Comment Text: First, Reclamation holds responsibilities and authorities under the Flood Control Act of 1944 (Public Law 534) which are directly relevant to the proposed management plan. Specifically, Reclamation has jurisdiction to construct and operate dams along the Missouri River upstream of Fort Peck Dam and on upper Missouri River Basin tributaries. Reclamation's jurisdiction includes 28 dams throughout the upper and lower Missouri River Basin and tributaries. As authorized in the Flood Control Act of 1944, Reclamation also has jurisdiction for irrigation projects in the Missouri River Basin that use the Missouri River as a water source. Second, Reclamation holds special expertise and knowledge relevant to three focal species (piping plover, least tern, and pallid sturgeon) found in the project area and listed under the Endangered Species Act (ESA). Reclamation has recent experience with these species in the Lower Yellowstone Intake Diversion Dam Modifications project, the Platte River EIS and Recovery Program, and undertaking or contributing to numerous scientific research and monitoring efforts. The inclusion of Reclamation as a cooperating agency will assist in the orderly and coordinated analysis of the effectiveness of recovery actions on the Missouri River and compliance with the ESA.

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339395 **Coder Name:** NLANGDON

Comment Text: We look forward to working with the Corps and your other Federal and State partners and the public through our NEPA and Clean Air Act, Section 309 responsibilities, in developing a Plan which accomplishes its intended objectives. If you have any questions regarding these comments and for future contact regarding the Management Plan, our Region 7 contact will be Larry Shepard. He can be reached at (913) 551-7441 or shepard.larry@epa.gov.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339316 **Coder Name:** NLANGDON

Comment Text: Based on information provided in the notice, the Bureau of Reclamation requests participation in the development of the EIS as a cooperating agency under the National Environmental Policy Act of 1969. First, Reclamation holds responsibilities and authorities under the Flood Control Act of 1944 (Public Law 534) which are directly relevant to the proposed



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

management plan. Specifically, Reclamation has jurisdiction to construct and operate dams along the Missouri River upstream of Fort Peck Dam and on upper Missouri River Basin tributaries. Reclamation's jurisdiction includes 28 dams throughout the upper and lower Missouri River Basin and tributaries. As authorized in the Flood Control Act of 1944, Reclamation also has jurisdiction for irrigation projects in the Missouri River Basin that use the Missouri River as a water source. Second, Reclamation holds special expertise and knowledge relevant to three focal species (piping plover, least tern, and pallid sturgeon) found in the project area and listed under the Endangered Species Act (ESA). Reclamation has recent experience with these species in the Lower Yellowstone Intake Diversion Dam Modifications project, the Platte River EIS and Recovery Program, and undertaking or contributing to numerous scientific research and monitoring efforts. The inclusion of Reclamation as a cooperating agency will assist in the orderly and coordinated analysis of the effectiveness of recovery actions on the Missouri River and compliance with the ESA.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339308 **Coder Name:** NLANGDON

Comment Text: Finally, we strongly urge the Corps include the state fish and game agencies throughout the planning process. State agency staff possess considerable expertise in managing most of the existing mitigation lands, as well as being our partners in monitoring and conservation. Their active involvement is critical to an efficient, effective plan formulation process and successful implementation. They also have statutory authority over fish and wildlife resources in their respective states as well as being the largest landowners along the river.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 60 **Comment Id:** 339273 **Coder Name:** NLANGDON

Comment Text: Please do not hesitate to contact Jennifer Campbell-Allison, Policy Coordinator (Jennifer.Campbell-Allison@mdc.mo.gov or 573-522-4115 Extension 3159) if the Department can assist you on this or other matters pertaining to forests, fish and wildlife in Missouri.

Organization: Missouri Department of Conservation

Commenter: Robert L Ziehmer **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339267 **Coder Name:** NLANGDON

Comment Text: The NPS has a continuing interest in working with the USACE to ensure effective planning, enhanced river values, and reduced impacts to resources of concern to the NPS. For continued consultation and coordination with the issues concerning these resources, please contact Hector Santiago, Regional Rivers Coordinator, at 402-661-1848.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 58 **Comment Id:** 339248 **Coder Name:** NLANGDON

Comment Text: Because of the long history of the State working with the Corps on implementation of the Mitigation project and our mutual interest in the successful completion of these efforts, we are requesting the Corps as a part of this process, to directly consult with the State of Kansas. With a project as large in geographic scope and important to the future of natural resources (both state and federal trust resources) associated with the Missouri River, we feel it is imperative that we have a clear understanding of the process and plans the Corps is considering. We look forward to meeting with you to discuss this further.

Organization: Kansas Department of Wildlife, Parks and Tourism

Commenter: Robin Jennison **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337944 **Coder Name:** NLANGDON

Comment Text: Will this require re-initiation of Section 7(a)(2) consultation somewhere in the NEPA/Management Plan development process?

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337767 **Coder Name:** NLANGDON

Comment Text: Evaluation should be focused on minimizing the negative effects of specific management actions on regional populations or implementing management treatments that increase some important fitness-related metric for endangered species on the Missouri River. It would be appropriate to shift the focus away from impossible evaluation at the scale of the listed entity (e.g., jeopardy avoidance, recovery) and focus evaluation narrowly on understanding the effects of USACE actions on listed species on the Missouri River. I suggest that the most effective way to achieve these objectives would to be to treat the effects analysis and adaptive management plan development processes as a discrete Section 7(a)(1) consultation.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 24 **Comment Id:** 337757 **Coder Name:** NLANGDON

Comment Text: Is complete information on the scientific advisory committee or the ISAP committee panel to MRRIC available to the public online?

Organization:

Commenter: Caroline Pufalt **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 7 **Comment Id:** 337755 **Coder Name:** NLANGDON

Comment Text: What is your expectation for the stakeholders? What should the stakeholders' expectation be as it relates to the process along with our involvement?



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization:

Commenter: Terry Fleck **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337741 **Coder Name:** NLANGDON

Comment Text: I suggest that the Independent Science Advisory Panel, as well as ESA experts from both USACE and USFWS outside of the Missouri River, should re-consider the need for the "Recovery Management Plan" EIS, which seems redundant with prior NEPA documents. If major changes are desired for endangered species management on the Missouri River, it would be much more effective to re-initiate consultation first, before performing another time consuming NEPA action based on existing constraints. This time around, section 7(a)(1) would be an appropriate pre-cursor to section 7(a)(2) to allow for greater consideration of positive actions that the USACE may be capable of to raise species baselines. I suggest that future consultations should incorporate much more information from the past decade of science on the Missouri River and should rely much more heavily on mechanistic assessments of real management effects on endangered species than the unsupported assumptions and uncertain demographic models that characterized the most recent Biological Opinion.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337729 **Coder Name:** NLANGDON

Comment Text: For these reasons, the development of a management plan via a broad-based effects analysis that can consider past and future actions and all of the action agencies authorities, seems like a much better fit for Section 7(a)(1) consultation than the preparation of a formal NEPA document that will be constrained by existing Records of Decision relative to historic section 7(a)(2) consultations. Currently, flexible implementation of management actions on the Missouri River is limited by the jeopardy BiOp's prescriptive RPAs. Releasing the objective-setting process from the constraints of the current BiOp would allow for the formulation of a greater number of alternative hypotheses for limiting factors and potential management solutions than the narrow range of biological hypotheses and management prescriptions that were hardwired into the BiOp. This would open up conceptual model, effects analysis, and management plan development processes to consideration of a range of alternative hypotheses and management treatments that could achieve the sort of management flexibility that USACE is looking for. It will also result in objectives that are less general and difficult to measure than those proposed in prior USFWS documents.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337728 **Coder Name:** NLANGDON

Comment Text: Section 7(a)(1) consultations can reduce inter-agency conflict and encourage conservation because a greater number of positive options for conservation actions are available. Section 7(a)(1) provides a mechanism for agencies to systematically compensate for past and/future impacts to a species or its habitat due to federal actions; improves the baseline for the species, particularly as it relates to the agency's actions and footprint; and ensures



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

advance consideration of endangered species in planning, design, and funding of future projects that may affect them. This reduces regulatory surprises and conflicts in that: 1) the action agency can commit to actions it is predisposed to undertake; 2) the action agency can request funding for conservation actions in advance, not in response to a Section 7(a)(2) consultation that occurs in the middle of (or after) a budget cycle. Section 7(a)(1) consultations provide an administrative record of proactive and programmatic planning for species conservation that prevents both the action agency and the USFWS from appearing "arbitrarily capricious" in their decisions. Since programmatic consultations are not tied to discrete and narrowly defined actions, Section 7(a)(1) consultations are well suited to adaptive management, where annual planning can be informed by new information from monitoring programs without having to re-negotiate RPMs, RPAs, or incidental take statements. .

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337727 **Coder Name:** NLANGDON

Comment Text: While jeopardy avoidance is legally required of the USACE under ESA, implementation of USFWS recovery plans is not (as this is the responsibility of the Department of Interior). Section 7 consultation on the Missouri River has been concerned almost exclusively with Section 7(a)(2) of the act. Section 7(a)(2) consultations have a single, primary focus: to ensure that a proposed action (explicitly defined in time and space) does not jeopardize the continued existence of a species or result in adverse modification of critical habitat. They meet the statutory requirements of defined federal actions that may affect listed species and facilitate discrete projects within defined footprints. Conservation needs and the recovery of listed species ARE NOT the focus of Section 7(a)(2), only jeopardy avoidance. However, the recovery needs of listed species ARE the intended focus of Section 7(a)(1) of the act. The analyses associated with a Section 7(a)(1) consultation are similarly structured to Section 7(a)(2) consultations; however, the scope of a Section 7(a)(1) consultation is programmatic and thus, extremely broad. It allows the action agency to address past, present, and future program actions on listed species and it allows the action agency to use any and all of its authorities, not just those associated with a discrete proposed action, to improve the species' baseline within the program area. In this way, Section 7(a)(1) promotes recovery and facilitates future Section 7(a)(2) consultations for discrete projects. Without programmatic actions to increase a species' baseline under Section 7(a)(1), Section 7(a)(2) consultations generally lead to a decrease in the species' baseline, moving future actions closer to jeopardy biological opinions, which is why many have referred to Section 7(a)(2) as "death by a thousand cuts".

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 15 **Comment Id:** 337685 **Coder Name:** KSMITH

Comment Text: Is there a document or consideration aside from this webinar?

Organization:

Commenter: Jennifer Campbell-Allison **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 12 **Comment Id:** 337682 **Coder Name:** KSMITH

Comment Text: How much from the MRERP workshops will be rerepeated, or can some be considered already reviewed?

Organization:

Commenter: David Buland **Page:** **Paragraph:**

Kept Private: No

DUP1000 Duplicate Correspondence (Non-Substantive)

Correspondence Id: 45 **Comment Id:** 337809 **Coder Name:** NLANGDON

Comment Text: Thank you for the opportunity to comment on the Missouri River Recovery Management Plan (MRRMP) and Environmental Impact Statement (EIS). I submit these scoping comments on behalf of the Missouri and Associated Rivers Coalition (MOARC). MOARC supports responsible management of Missouri River resources and the maintenance of congressionally authorized purposes of the river including flood control, navigation and water quality and supply. MOARC also supports responsible and properly balanced habitat restoration for endangered or threatened species based on sound science. While MOARC interests recognize the importance of responsible river management for the environment and species, the federal government must also recognize the importance of the Human Considerations for which River management is so vital. To focus on species / environmental needs to the exclusion of the human and economic interests would be inconsistent with past efforts of many groups and individuals and the work of the Missouri River Recovery Implementation Committee (MRRIC).

Organization: Missouri and Associated Rivers Coalition

Commenter: Franklyn Pogge **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 48 **Comment Id:** 337810 **Coder Name:** NLANGDON

Comment Text: I'm trying to think of questions the tribal administration would have. Sometimes tribal interests are competing as well. You have cultural preservation aspects, but our tribe also has economic development, in particularly water interests. There are plans by the tribe, they throw them out there before.- They are sitting on the shelf right now, to pipe water out of Missouri. I don't know if you know, but the Kickapoo tribe has struggled with water.- It's been an issue.- And in drought years we've had to truck in water.- One solution has been basically a pipeline from the Missouri River all the way to the reservation. Any idea what kind of impact this kind of stuff would have on those kinds of plans?- From a legal standpoint would it make it illegal to do something like that? Basically would it prevent the tribe from exercising what they consider their sovereign rights to tap into the Missouri River?- Because I know that it's an issue for the tribe. We would have to look at what the treatise says now because the treaty that put the Kickapoo up against the Missouri River was from '32, and there were two larger -- it's a much smaller area now.- But the tribe tries to promote the sovereignty in connection to the Missouri River.- So there are issues there from a legal standpoint.- They said that they still have the right to the Missouri River based on the treaty. The other issue that came up with regard to water, we saw that there was going to be a feasibility study piping water from the Missouri out to western Kansas to help reduce pressure on the Ogallala aquifer.- I think that's the plan.- It's just a feasibility study at this point as far as I know.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: Kickapoo Tribe

Commenter: Steve Corbett **Page:** **Paragraph:**

Kept Private: No

GA1000 Impact Analysis: Impact Analyses (Substantive)

Correspondence Id: 4 **Comment Id:** 337440 **Coder Name:** NLANGDON

Comment Text: Almost three million Missourians get their drinking water from the Missouri River or its' alluvium.³ [3 Missouri River Master Water Control Manual Review and Update FEIS, March 2004, Table 3.10-3 Population Served by Municipal Facilities by Reach, page 3-113] Modern municipal water and power plants have been designed around the flow regime under the regulated reservoir system. Reduced flows have the potential to starve power plant and water plant intakes below Gavins Point Dam for water since intake structure openings are fixed in elevation.⁴ [4 Thermal Power Intakes List, John LaRandeau, USACE, June 13, 2012] Low water levels can reduce a plant's ability to pump enough water to meet operational demands. If water levels get too low, infrastructure expenditures in the range of tens of millions of dollars per plant could be required to modify or construct a new intake. Reduced water flows can also influence power plants and other discharger's ability to comply with NPDES water discharge permit limitations. Waterborne transportation benefits the environment and the economy because it is the greenest and most cost effective mode of freight transportation. Water-compelled rates, created when navigation competes with truck and rail transportation, reduce regional transportation costs; and thus, the costs of goods.

Organization: MOARC Association

Commenter: Franklyn W Pogge **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 36 **Comment Id:** 337465 **Coder Name:** NLANGDON

Comment Text: I and other tribal members of the landowner association of Fort Berthold attended and participated in the MRERP process for ecological recovery. With unconventional energy development requiring thousands of gallons of water, I am concerned about the potential impact to the Missouri River, the ecology, and wildlife. I will submit written comment also.

Organization:

Commenter: Theadora B Bear **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337486 **Coder Name:** NLANGDON

Comment Text: Almost three million Missourians get their drinking water from the Missouri River or its alluvium. Modern municipal water and power plants have been designed around the contemporary flow regime under the regulated reservoir system. Reduced flows have the potential to starve 19 power plant and 19 water plant intakes below Gavins Point Dam for water since intake structure openings are fixed in elevation. Low water levels can cause significant damage to equipment and reduce a plants ability to pump enough water to meet operational demands. If water levels get too low, infrastructure expenditures in the range of tens of millions of dollars per plant could be required to modify or construct a new intake. For the 19 power



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

plants which produce 11,058 megawatts of electricity and provide electricity to millions of consumers, lower flows can reduce a plants generating capacity or force it to shut down. This would result in adverse economic impacts in the form of lost generation and revenue, increased electric rates to consumers and the imposition of penalty fees on the system operator. Equipment damage and lost generation costs can easily fall into the range of hundreds of thousands to millions of dollars. Extremely low water conditions across a region would affect many plants and potentially create generating and transmission issues that could impact system reliability over a large portion of the service territory. The delivery of reliable electric service is particularly critical during the summer and winter months when lives could be placed at risk if electricity was not available for heating and cooling.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337490 **Coder Name:** NLANGDON

Comment Text: Reduced water flows can also influence a power plants ability to comply with cooling water discharge permit limitations. This can result in plant de-rates and lost generation at additional expense to consumers. The inability to comply with permitted thermal discharge limits would increase the likelihood that cooling towers may be required as an alternative to a once-through cooling system. Design and costs for a cooling tower retrofit can present significant challenges that are dependent on site-specific physical and economic considerations. The cost to retrofit a cooling tower, even for a small plant, can easily reach hundreds of millions of dollars. Operating penalties in lost efficiency and increased operating and maintenance cost can be significant. In a worst case scenario, site-specific or economic considerations may force the closure of a plant requiring new expenditures for replacement generation. Navigation flows also support the in stream flow needs for a robust fishery and recreation industry. The lower Missouri River is known for its trophy catfish fishery and has produced numerous 100-plus pound catfish, including state and world record breaking fish. The free flowing lower river is also home to nine marinas and numerous boat clubs and outfitters and hundreds of hunting, fishing and sightseeing guides. Several of these business host events and tournaments on the river and some events draw participants from out of state and even from out of the country. All of these industries and resources have developed under the current level of flow support. Changing the flow support that these industries developed under would very likely negatively impact these resources and these industries. In addition to these benefits, Missouri River navigation flows provide up to two-thirds of the input flow of water into the Mississippi River at St. Louis in drought years (72 % n 2012) and close to half in normal years, allowing for efficient transportation of inputs and products on that river. If those flows were not available, especially under drought conditions in the Middle Mississippi River reach, significant economic impacts and possible complete Mississippi River closure could occur.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337493 **Coder Name:** NLANGDON

Comment Text: Cost savings from barge transport on the Middle Mississippi are estimated to exceed four billion dollars per year, but depend upon the reliability of the inland waterways including the flows provided by the Missouri River. If the Mississippi and Illinois Rivers were to



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

shut down due to low Missouri River flows feeding the St. Louis to Cairo, IL reach, truck traffic in the St. Louis region alone would increase by 200%; delays would increase by almost 500%; e injuries and fatalities would increase by at least 36%; maintenance costs would increase by at least 80%. Moving cargo on inland waterways such as the Mississippi River ensures cleaner air with less production of Greenhouse Gas emissions such as hydrocarbons, nitrous oxide, carbon monoxide and carbon dioxide. Inland barge transportation produces far fewer Greenhouse Gas emissions for each ton of cargo moved compared to transport by truck or rail. Comparing transport emissions per ton mile (emissions generated while shipping one ton of cargo one mile), researchers calculated that transport by rail emits 139% more CO₂, and transport by truck emits 371% more CO₂, than transport by inland barge. Moreover, because of the greater flow reliability created after the Missouri River reservoirs came on line in the 1960s, barge draft and tow size restrictions on the Mississippi River also greatly diminished and Mississippi River navigation shutdowns nearly ceased. The effects of reliable Mississippi River commerce are a more vigorous economy and greater job creation.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 337753 **Coder Name:** NLANGDON

Comment Text: The IWLA also requests the ACE consider the following: - Water Quality - Is water quality in the Missouri River or from any of its major tributaries a contributing factor to low reproduction of the endangered pallid sturgeon or for the 51 of 67 native fish species now listed as rare or declining along the Missouri River?

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 20 **Comment Id:** 338245 **Coder Name:** NLANGDON

Comment Text: Will the effects of flows from the Missouri be considered with regard to the impacts of hypoxia in the Gulf and nutrient loading?

Organization:

Commenter: David Shorr **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 53 **Comment Id:** 338247 **Coder Name:** NLANGDON

Comment Text: The Department is concerned with the range of flows analysis. Neither flood control nor downstream flow support can be negatively impacted to achieve MRRP objectives. Both of these authorized uses benefit numerous cities and towns that are adjacent to the Missouri River and productive agricultural farmland throughout the floodplain. Due to tributary input below Gavins Point Dam, there are natural river level fluctuations throughout the state of Missouri, and efforts to optimize these naturally occurring flow conditions without further impacting the lives and livelihoods of Missourians should be considered.

Organization: MO Department of Natural Resources

Commenter: Sara Parker Pauley **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 53 **Comment Id:** 338249 **Coder Name:** NLANGDON

Comment Text: Modifications to the BSNP have the potential for wide ranging impacts and must be carefully considered and analyzed. The BSNP has stabilized the Missouri River providing assurance against eroding banks and a shifting channel that might otherwise impact numerous towns and cities located along the lower river. The BSNP has also allowed for reliable construction of levees providing an extensive flood protection system protecting not only municipalities but prime agricultural land. Critical infrastructure, including transportation, pipelines and power lines of regional, state and national importance has also benefited from the placement of the BSNP. To continue to modify the BSNP, the MRRMP must consider the impacts to the many established uses that have evolved since completion of the BSNP project.

Organization: MO Department of Natural Resources

Commenter: Sara Parker Pauley **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 53 **Comment Id:** 338250 **Coder Name:** NLANGDON

Comment Text: Modifications to the BSNP have the potential for wide ranging impacts and must be carefully considered and analyzed. The BSNP has stabilized the Missouri River providing assurance against eroding banks and a shifting channel that might otherwise impact numerous towns and cities located along the lower river. The BSNP has also allowed for reliable construction of levees providing an extensive flood protection system protecting not only municipalities but prime agricultural land. Critical infrastructure, including transportation, pipelines and power lines of regional, state and national importance has also benefited from the placement of the BSNP. To continue to modify the BSNP, the MRRMP must consider the impacts to the many established uses that have evolved since completion of the BSNP project.

Organization: MO Department of Natural Resources

Commenter: Sara Parker Pauley **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 53 **Comment Id:** 338252 **Coder Name:** NLANGDON

Comment Text: The Department requests the Corps to analyze the entire Katy Trail to determine the economic impacts of disrupting this nationally recognized trail system.

Organization: MO Department of Natural Resources

Commenter: Sara Parker Pauley **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 57 **Comment Id:** 339246 **Coder Name:** NLANGDON

Comment Text: Regional extirpation of any species is an unacceptable cost and a definite sign of mismanagement of America's natural, river resources.

Organization: Sierra Club Missouri River Activist Network

Commenter: Thomas Ball **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 59 **Comment Id:** 339255 **Coder Name:** NLANGDON

Comment Text: 5. Conduct economic analysis of authorized purposes and the USACE activities conducted to meet the U.S. Fish & Wildlife Service (USFWS) BiOp in order to develop and compare alternatives. 6. Include in the economic analysis all pertinent components such as agencies' cost for monitoring, planning, management, meetings and all associated costs of main stem dam operations.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339260 **Coder Name:** NLANGDON

Comment Text: 14. Evaluate the appropriateness of bank management practices and consider the effectiveness and cumulative impacts of stream bank stabilization practices

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339265 **Coder Name:** NLANGDON

Comment Text: 20. Identify how tributaries and associated cultural sites would be affected by river management actions. These actions include but are not limited to flow alteration and habitat conservation activities (non-native plant control techniques) with peripheral effects (staging areas, helicopters, specialized equipment, etc.) that can harm or adversely affect connected natural and cultural resources. 21. Consider impacts to historic sites related to the Lewis and Clark Expedition, including indirect impacts. 22. Consider changes to public access or use of the Lewis and Clark National Historic Trail, including potential new opportunities for trail development and access when appropriate. 23. Consider visual impacts to Trail visitors, Park visitors, and the scenic values of the recreational river. 24. Identify all public water intakes, their elevations and analyze the economic and ecological cost-benefits of managing dam operations to support these systems 25. Assess how cumulative impacts of water use for energy development upstream affect species recovery. Include related planning efforts in the area to determine impacts if these activities are incorporated. Cumulative impacts of all of these developments should be addressed.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339268 **Coder Name:** NLANGDON

Comment Text: 13. Conduct an economic analysis for sediment management

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339302 **Coder Name:** NLANGDON

Comment Text: It is also critical to carefully characterize the economic implications of all the



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

options so decision makers and the public understand why various alternatives were chosen.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339380 **Coder Name:** NLANGDON

Comment Text: Analysis of a robust range of alternatives must incorporate the integration of the effects of all natural resource, navigation and flood risk management programs with those proposed as part of this Management Plan. Perhaps more importantly, the EIS should clearly identify impediments to achieving the objectives identified for the Management Plan, including changes to existing management authority or existing program limitations which would be necessary to the successful implementation of this Management Plan. For example, regardless of existing limitations in Corps authority regarding flow management or levee construction/reconstruction (e.g., Master Manual, PL 84-99), the draft EIS should describe whether existing authority or current management practices ultimately limit or preclude achievement of Management Plan objectives and what changes to existing authorities and programs would better support the Management Plan. Consistent with the spirit of NEPA, the public must know and understand the assumptions and any limitations which shape, complement and constrain the effectiveness of the Management Plan. This is the transparency envisioned within NEPA.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339385 **Coder Name:** NLANGDON

Comment Text: Climate Change The EIS should explicitly address how the Management Plan, in specific provisions, will enable the Corps and your other Federal and State partners to accommodate projected changes within the basin affecting the channel/floodplain environment resulting from climate change. Specifically, but not limited to, the EIS should describe how projected changes in precipitation and temperature within the Missouri River basin could affect mainstem hydrology and water quality and the demands placed upon river resources by users. For example, changes in basin precipitation patterns might result in significant changes in the location, timing and quantity of precipitation runoff. Changes in regional climate might result in further increases in the temperature of tributary and mainstem flows affecting reproduction, food availability, shallow water habitat suitability and the ability of the river to accommodate heated effluent discharges without significant adverse impacts.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340264 **Coder Name:** NLANGDON

Comment Text: Direct, Indirect and Cumulative Effects The EPA recommends the NEPA document examine the direct, indirect, and cumulative impacts to the environmental, cultural, and recreational resource characteristics of the project area. This examination may include impacts to threatened, endangered and/or sensitive species and their habitat; fish and



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

invertebrate assemblages; water quality; and other resources within the geographic scope of analysis. Additionally, we recommend the impact analysis consider the potential for non-linear responses, where incremental impacts of the proposed project may not result in environmental conditions changes that are greater than incremental. The EPA also recommends the NEPA document examine the cumulative impacts of other water development or management and habitat restoration projects that will affect water quality and aquatic resources, analyzing the direct and indirect effects of all alternatives, in combination with past, present, and reasonably foreseeable future activities. Environmental impacts are generally more effectively analyzed according to airsheds and watersheds rather than political boundaries. We request that the NEPA document specifically clarify the relationship of this project to other water management and habitat restoration projects to aid in the disclosure of impacts to the affected environment. We recommend that site-specific characterization and disclosure of past impacts to aquatic ecosystems, including streams, associated wetlands and aquatic habitats, include the impacts from all historical operations and management.. We also recommend the characterization of incremental impacts of historical operations and management when possible as it may inform current management and restoration decisions. We recommend the cumulative effects analysis account for the effects of any reasonably foreseeable population growth in the area and its effects on the hydrology and aquatic resources. Analysis of indirect impacts of development will also aid in alternative selection and identification of strategies for adaptive management. Specifically, please discuss whether the project is likely to affect the location, timing or amount of population growth and associated development. If this project affects growth, we recommend assessing the expected environmental effects of that growth in the EIS.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340265 **Coder Name:** NLANGDON

Comment Text: Relation to Local Stakeholders and Watershed Groups The project alternatives and their potential effects on local stakeholders and watershed groups should be analyzed in relation to the following issues: "How current stream usage will be altered; "The ecosystem changes in these areas (e.g., recreationists/recreation industry, habitat quality, enhanced user experience, etc.); "How each alternative will affect property and real estate values; and "When water and instream flow will be available to provide wetted habitat and long-term habitat maintenance (i.e., sediment transport, channel morphology).

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 341610 **Coder Name:** NLANGDON

Comment Text: 10. Alternatives should consider impacts on/of the Mississippi River as part of a "cumulative effects" assessment and spatial component of the EIS. This should include both species recovery as well as social and economic interests' effects (e.g. navigation and intakes).

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No



GA2000 Impact Analysis: Use Trends And Assumptions (Substantive)

Correspondence Id: 11 **Comment Id:** 337681 **Coder Name:** NLANGDON

Comment Text: How will the study incorporate the best science on drought and climate change impacts on vulnerability/risks of species and humans?

Organization:

Commenter: Shannon McNeeley **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339263 **Coder Name:** NLANGDON

Comment Text: 18. Conduct economic analysis projecting navigation activities into the future (25-50 yrs)

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

GA3000 Impact Analysis: General Methodology For Establishing Impacts/Effects (Substantive)

Correspondence Id: 61 **Comment Id:** 339303 **Coder Name:** NLANGDON

Comment Text: Similar to our growing understanding of river science, the methods to evaluate the potential economic effects of any proposed measures or alternatives is another area that has greatly improved in the last 10 to 20 years. As noted in the "Principles and Requirements for Federal Investments in Water Resources": "...Federal investments in water resources have been mostly based on economic performance assessment which largely focus on maximizing net economic development gained and typically involved unduly narrow costⁱ½ benefit comparison of the monetized effects. ...A narrow focus on monetized or monetizable effects is no longer reflective of our national needs and from this point forward both quantified and unquantified information will form the basis for evaluating and comparing potential Federal investments..." Thus, economic consideration of ecosystem functions must be an integral aspect of the cost and benefit analyses included in the planning process. In fact, over the last several years, a number of tools have been developed to help quantify ecosystem services relative to water development project. The Federal Emergency Management Agency's recent Mitigation Policy (FP-108-024-01; <http://www.fema.gov/benefit>) explicitly includes quantified ecosystem services in their benefit to cost analyses for acquisition of properties as part of its Pre-Disaster and Flood Mitigation programs, as well as the Hazard Mitigation Grant Program. Service staff recently attended a floodplain workshop in St. Louis coordinated, in part, by Corps staff on the Mississippi River. Materials from that meeting demonstrate a number of tools used to identify and quantitatively evaluate effects to ecosystem services such as water and nutrient regulation, recreation, habitat and biodiversity, water supply, food, energy and raw materials and many others. The following websites are just a couple of the resources available as reference: <http://esvaluation.org/> <http://www.ebmtools.org/mimes.html>



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

<http://www.naturalcapitalproject.org/InVEST.html>

[http://www.eartheconomics.org/FileLibrary/file/Midwest/Earth Economics Middle%
ver_ESV_2012.pdf](http://www.eartheconomics.org/FileLibrary/file/Midwest/Earth%20Economics%20Middle%20East%20ESV_2012.pdf) We will share the specific materials with the project managers and recommend they include such tools in alternative formulation and evaluation for the management plan.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 65 **Comment Id:** 341987 **Coder Name:** NLANGDON

Comment Text: In a future of likely declining federal budgets, it is imperative to formulate project features that work with the river to the maximum extent practicable. It is also critical to carefully characterize the economic implications of all the options so decision makers and the public understand why various alternatives were chosen. Similar to our growing understanding of river science, the methods to evaluate the potential economic effects of any proposed measures or alternatives is another area that has greatly improved in the last two decades. As noted in the "Principles and Requirements for Federal Investments in Water Resources": " ... Federal investments in water resources have been mostly based on economic performance assessment which largely focus on maximizing net economic development gained and typically involved unduly narrow cost-benefit ratio comparisons of the monetized effects.... A narrow focus on monetized or monetizable effects is no longer reflective of our national needs and from this point forward both quantified and unquantified information will form the basis for evaluating and comparing potential Federal investments..."

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340275 **Coder Name:** NLANGDON

Comment Text: Groundwater The EPA recommends the NEPA document consider and compare the relative impacts among alternatives and appropriate mitigation measures. In assessing the potential impacts of a proposed project on groundwater systems in the region of the project site, we recommend examination of the potential for changes in the volume, storage, flow and quality of groundwater in light of data obtained from characterization of groundwater resources and groundwater use. Projected construction or maintenance may have impact on these facets of the natural system. Any changes in the system that result from implementation of the project should be identified.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340271 **Coder Name:** NLANGDON

Comment Text: Water Quality Should the project modify flow either through operational changes, increased diversion of water, or introduction of new water sources, we recommend the NEPA document include analysis of water quality. In addition to what is described above for reservoirs, we recommend analysis of: -Current and post-project water quality at a critical flow



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

condition and expected changes to assimilative capacity or permits, which o Compares current water quality, post-project water quality, and the applicable water quality standards, o Uses methods to assess water quality and determine water quality-based effluent limits, o Accounts for changes in background water quality for water quality modeling and determinations for assimilative capacity;

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340270 **Coder Name:** NLANGDON

Comment Text: Reservoirs The EPA recommends analysis of reservoir dynamics that may change due to changes in sediment dynamics and transport, or reservoir management and hydrology, specifically addressing the spatial extent, magnitude, frequency and duration of effects to the following: changes to wetted habitat and lake elevations, dissolved oxygen; temperature, pH, metals release, nutrients, algal growth, total suspended solids, turbidity and total/dissolved organic carbon. A change in any of these parameters has the potential to affect a fishery or recreational usage (including fish consumption advisories and methylation of mercury) and consequently, these uses should be considered and addressed. We recommend considering how reservoir operations and fluctuating water levels may influence water quality, fisheries, or recreational use within or downstream of the reservoir. We recommend characterization of the frequency and magnitude of water level fluctuations within the reservoir and analysis of the potential impacts associated with these fluctuations. Model selection should ensure the full variability and dynamics of growing season nutrient cycling, algal blooms, and reductions in dissolved oxygen are adequately captured to predict potential nutrient impacts. Calculations should use temporal and spatial scales that enable complete analysis of the particular water quality parameters of interest. For example, DO concentrations and temperature vary throughout the water column and vary throughout a day.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340269 **Coder Name:** NLANGDON

Comment Text: Should in-stream flow quantity be altered by the project, the NEPA document should include analysis of: -Impacts to the flow regime, with an emphasis on the implications of these changes on channel complexity, channel maintenance, aquatic habitat availability and life history adaptations; which includes o Presentation and comparison of pre- and post-project flows as characterized in the table below (note: table did not paste into PEPC - - see attachment): o Quantification of the cumulative total diversions as the proportion of average monthly (or daily) streamflow diverted where impacts from water withdrawal are occurring from multiple past, present and future diversions -Impacts to stream morphology and sediment transport due to construction, changes in sediment sources or channel shape, changes in stream flow, or changes in land use o Identify critical habitat types o Relate pre- and post-project flows to channel maintenance and complexity, sediment transport -Impacts to resident fish species and invertebrate assemblages; which includes o Baseline data regarding functional species composition, diversity, evenness, abundance, and, for macroinvertebrates, characterization of flow preference. EPA's rapid bioassessment protocol, or a state-specific method, may be used to describe baseline habitat quality o Characterization of shifts in species



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

composition, impacts to less tolerant species, and changes in functional composition between current baseline and post-project environment " o Impacts to physical habitat, including availability, heterogeneity, connectivity, and long-term habitat maintenance o Consideration of multiple metrics or factors that influence habitat such as loss of flushing flows, reduced floodplain connectivity, temperature, and changes to ecologically significant flows o Analysis of aquatic resource impacts should integrate any results from flow, stream morphology and water quality analyses -Impacts associated with changes in habitat types should be analyzed and include quantification of habitat conversion -A description of mitigation measures for potentially adverse impacts to stream resources and aquatic life

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340268 **Coder Name:** NLANGDON

Comment Text: Aquatic Life Streams Analysis of each alternative with respect to the affected stream system(s) should account for temporary and permanent alterations of habitat and subsequent impacts to aquatic life. In order to understand project effects on streams, the scope of the impact analysis should include any stream resources in the immediate project area and downstream of the project area, including effects associated with nationwide or individual permitting of discharge of dredged or fill material to Waters of the U.S. for the impact analysis, reaches should be selected based upon their representativeness with regard to geographic scope and the type of modification. Selection of stream reaches should also include interagency coordination to ensure that critical resources (e.g., species recovery areas, recreational areas, critical habitat for threatened or endangered species, segments impaired per Section 303(d) of the Clean Water Act, segments for which TMDLs have been established, receiving waters for permitted dischargers, source water areas) are considered and the scope of analysis is appropriate. Stream impacts should be considered regionally within the context of the cumulative analysis portion of the review.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340266 **Coder Name:** NLANGDON

Comment Text: Wetlands In order to illustrate effects to wetlands in the area, the NEPA document should specifically include the following analyses or descriptions: Description of impacts under individual or nationwide permits authorizing the discharge of fill or dredge materials to waters of the U.S.; Clear maps, including wetland delineation and regional water features; Wetland delineation and descriptions, including wetlands function analysis if there is any potential that the project will cause impacts; Detailed analysis of the direct, indirect and cumulative impacts to all wetlands in the geographic scope, including impacts to wetlands from changes in hydrology even if these wetlands are spatially removed from the construction footprints. Detailed analysis of potentially adverse impacts to aquatic resources from reasonably foreseeable development;. and Impacts associated with restoration and changes to the riparian habitat or instream habitat types or quantities should be analyzed and include quantification of lost aquatic and riparian habitat types.

Organization: U.S. Environmental Protection Agency Region 8



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Suzann Bohan **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 67 **Comment Id:** 340263 **Coder Name:** NLANGDON

Comment Text: Analysis/Resource Considerations Affected Environment and Baseline Conditions Please consider the following when defining baseline conditions: "Verification of historical data (e.g., data 5 years or older) as currently representative or as appropriate for use to characterize baseline if not; "A hydrologic analysis sufficiently detailed to provide the necessary information for the assessment of biological and geomorphic impacts; and o We also recommend consideration of the potential influences of climate change on future hydrology "A geographic scope of analysis that includes those resources directly impacted by the project footprint, as well as the resources indirectly (or secondarily) impacted by the project. o Indirectly impacted areas may include downstream segments, source water areas where water withdrawals will occur, and any other resource areas which may be affected by changes in water management or operations

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**
Kept Private: No

MT1000 Miscellaneous Topics: General Comments (Non-Substantive)

Correspondence Id: 5 **Comment Id:** 337675 **Coder Name:** KSMITH

Comment Text: Are we going to be taking advantage of work already completed under MRERP?

Organization:

Commenter: David Shorr **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 58 **Comment Id:** 339247 **Coder Name:** NLANGDON

Comment Text: The State of Kansas and Department of Wildlife, Parks and Tourism have participated in mitigation and recovery efforts related to the Missouri River since these programs were in their earliest planning stages. As a result of past projects and actions by the federal government, through the Corps of Engineers, state and federal trust resources associated with the Missouri River were dramatically impacted. And ongoing impacts associated with those projects continue today. Recognizing the past and ongoing impacts to state trust resources that occurred as a result of these federal projects, Congress directed the Corps to mitigate for these damages through the Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project. While much work has been accomplished, much work remains to be completed and the State places a very high value on the Mitigation Project and the Corps completing it's obligation.

Organization: Kansas Department of Wildlife, Parks and Tourism

Commenter: Robin Jennison **Page:** **Paragraph:**
Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 55 **Comment Id:** 339114 **Coder Name:** NLANGDON

Comment Text: Recovery of an endangered species is a long and arduous process. Congress in the last decade provided monies to achieve that goal and then allowed individual senators or representatives to "veto" funding. The proposed Missouri River Recovery Program cannot succeed in that environment. Some critics of river management urge the states and tribes to find an alternative governing principle on the Missouri. Some have suggested a compact similar to the compact of Great Lakes states and provinces. If the Corps and Congress cannot reach a long term authorization and appropriation mechanism, the water that is the heart of this region will be sold off to high bidders, mocking the management plan currently under consideration.

Organization:

Commenter: Jim P Redmond **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 54 **Comment Id:** 338727 **Coder Name:** NLANGDON

Comment Text: The Bureau of Reclamation has submitted electronic comments on the Notice of Intent and Species Objectives/Conceptual Ecological Models to the following email address: mrrp@usace.army.mil.

Organization: Bureau of Reclamation

Commenter: Christina M Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 52 **Comment Id:** 338253 **Coder Name:** NLANGDON

Comment Text: What were the seven recommendations from MRRIC?

Organization:

Commenter: George Cunningham **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 51 **Comment Id:** 338240 **Coder Name:** NLANGDON

Comment Text: 6. Additional recommendations: Answer: Temporary Migratory Habitat Int.

Organization: Mo Valley Waterfowlers Association

Commenter: Bill Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 17 **Comment Id:** 337688 **Coder Name:** KSMITH

Comment Text: I'm sorry. This is Carol Lepufold {verbatim}. I apologize. I joined late because I had some problems accessing, and I really apologize for bringing this up. But I would like to talk to someone about these issues. I appreciate that. I don't want to take up other peoples' time, though.

Organization:

Commenter: Carol Lepufold **Page:** **Paragraph:**

Kept Private: No



ON1000 Other NEPA Issues: General Comments (Substantive)

Correspondence Id: 1 **Comment Id:** 337667 **Coder Name:** KSMITH

Comment Text: Trap and relocate turtles before beginning projects

Organization:

Commenter: bob nebel **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 341976 **Coder Name:** NLANGDON

Comment Text: -What, if any management actions or changes have already occurred, why and what effect they are having; -Identification of FWS recommendations including any related design criteria, mitigation and monitoring requirements to reduce potential impacts to TES species from the proposed project; and -Adequate design criteria, restoration/mitigation and monitoring measures, developed in coordination with the FWS and State, to ensure the proposed project and resulting development do not negatively impact habitat for migratory birds, bald eagles, or other species.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 341609 **Coder Name:** NLANGDON

Comment Text: 9. To the extent latitude within the law and/or regulations creates some type of impact to social/economic/stakeholder interests, and impacts to that interest can be mitigated with time through some type of reasonable action, we believe that interest should be afforded those timing considerations within the final decision/adaptive management process to avoid Harm.

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340277 **Coder Name:** NLANGDON

Comment Text: Mitigation The EPA recommends the NEPA document include identification of appropriate mitigation where impacts are expected and clarify to which alternatives that mitigation applies. We recommend the following, at a minimum, be included: -designation of the entity responsible for implementing the mitigation; -a defined monitoring plan; -identification of funding sources; -mechanisms for public disclosure of the analysis and management decisions; -specific temporal milestones to meet rehabilitation standards; and, as described in the adaptive management section below: o specific management decision points based upon protecting the minimum desired environmental conditions (thresholds) in the project area, which would trigger action; o management alternatives and mitigation measures that would be implemented should a threshold be exceeded; The NEPA document should include, but not be limited to, details on mitigation measures for water quality, stream morphology and aquatic life impacts.

Organization: U.S. Environmental Protection Agency Region 8



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Suzann Bohan **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 49 **Comment Id:** 337723 **Coder Name:** NLANGDON

Comment Text: Why are the effects analysis and management plan being developed in a NEPA context? The review materials state (emphasis mine): "The Management Plan and EIS will provide a definitive adaptive management process to ensure the flexibility needed to avoid jeopardy of the listed species." However, it appears that existing USACE authorities and completed NEPA documents already cover a large range of actions that might be taken to avoid jeopardy (USACE 1978, USACE 1981, USACE 1987, USACE 2003, USACE 2004, USACE 2004a, USACE 2010, and USACE 2011). Which potential management actions, specifically, are lacking NEPA coverage? While the Missouri River Recovery Program is an administrative merger of several USACE programs that were previously discrete (e.g., endangered species compliance, mitigation, and ecosystem restoration), each of these programs completed EIS documents prior to this merger that should cover any potential management actions for endangered species on the Missouri River. The notice of intent for the Management Plan EIS states that issues related to Ecosystem Restoration will not be covered in this EIS. Consequently, the Management Plan EIS seems redundant with previous NEPA. Given the time and costs that will inevitably be associated with this new management plan EIS (the programmatic EIS for sandbar habitat creation took from 2005-2011 to complete), it seems like it would be more appropriate to complete the effects analysis and management plan development processes first, and scope out any additional NEPA actions, if necessary, relative to specific management actions with clearly defined scopes and footprints, after the plan determines if any management actions are necessary that aren't already covered. Preparing a new "Recovery Management Plan EIS" prior to the development of a management plan seems to be putting the cart way before the horse.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**
Kept Private: No

OPP1000 Opposition of the Missouri River Recovery Management Plan and EIS (Substantive)

Correspondence Id: 40 **Comment Id:** 337494 **Coder Name:** NLANGDON

Comment Text: Consequently, unless society is desirous of higher municipal water and electric rates, a less robust fishery and recreation industry and greater air pollution and higher costs of goods, it is in the best interest of our country to continue reliable and adequate Missouri River flows as per the current management plan. Arguments for the elimination of Missouri River navigation and its flows are misinformed and made in a vacuum. Unfortunately, the logic of such thinking is counterintuitive at best and shortsighted and dangerous at worst.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**
Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

PN3000 Purpose And Need: Scope Of The Analysis (Substantive)

Correspondence Id: 21 **Comment Id:** 337441 **Coder Name:** NLANGDON

Comment Text: Recreation is an authorized use, and management actions on the Iowa/Nebraska reach to support this use needs to be in the management plan.

Organization:

Commenter: Marian Maas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 73 **Comment Id:** 343621 **Coder Name:** NLANGDON

Comment Text: Our country has reached a critical point in how we plan and manage investments in our nation's water resources. On the one hand, changing demands for water and the impacts of changing weather patterns are making sound water management more important than ever. At the same time, fiscal limitations and the large backlog of authorized funding for projects require more efficient and effective approaches to selecting, designing, funding and implementing water resource investments. These approaches should use good science and a watershed-scale perspective to balance the multiple missions of the Army Corps of Engineers and should take advantage of the power of natural systems to meet the nation's water resource needs in the most cost- effective manner. The Nature Conservancy believes the best way to achieve this efficient and effective approach is to apply the six "Guiding Principles" captured in the March 2013 updated framework for "Principles and Requirements for Federal Investments in Water Resources" to the MRRMP and EIS. The Conservancy recognizes application of these principles at this time is not possible given interagency guidance is in draft form and prohibition of implementation through appropriations, but given the extended timeline for these effort we would encourage their application at the earliest phase of planning possible.

Organization: The Nature Conservancy

Commenter: Jason Skold **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 342042 **Coder Name:** NLANGDON

Comment Text: 7. The scope of the "adaptive management" process shall be limited only to those alternatives specifically assessed as part of the EIS process. This will preclude events that may significantly impact social and economic interests beyond those evaluated. 8. Sideboards to establish boundary conditions of the adaptive management process shall be clearly defined as part of the final decision to prevent circumvention of congressionally "authorized purposes".

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 342004 **Coder Name:** NLANGDON

Comment Text: The MRRMP and EIS will be narrower in scope and purpose than the study detailed in section 5018(a) of WRDA 2007 also known as the Missouri River Ecosystem Restoration Plan (MRERP). Given that, the League asks that the MRRMP and EIS still encompass species and habitat recovery utilizing all of the objectives outlined in the authorities



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

listed above.

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 341980 **Coder Name:** NLANGDON

Comment Text: 6. In conversations associated with the development of MRRIC "human consideration topics, the Corps identified the temporal scope of the EIS as 50 years. It seems presumptive and impractical for the agency to consider a time frame of this magnitude due to the current lack of understanding necessary to recovery the species, the need to develop additional scientific data to support recovery, and the difficulty, or impossibility, of the Corps ability to accurately assess social and economic consequences within this extended time frame. The Corps should adopt a shorter temporal scope for the EIS so as to avoid the potential for flawed analysis that will not serve the need of the species, or potentially create unanticipated impacts to other stakeholders interests.

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 69 **Comment Id:** 341613 **Coder Name:** NLANGDON

Comment Text: In addition, at page 58, the Final Report on Spring Pulses and Adaptive Management goes on state that the three listed species (pallid sturgeon, interior least tern and piping plover) would benefit from review and integration of data and recovery efforts in an expanded geographic area: The ISAP recognizes that the demographic units of the three listed species, located on the lower Missouri River below Gavins Point Dam, constitute a limited portion of the populations (or metapopulations) in the greater Missouri River system, and that each ecologically interact with conspecific individuals in other areas occupied by the species. For that reason, and to better facilitate the recovery of the listed species, any adaptive management program that includes actions on the lower Missouri River should be integrated with conservation efforts elsewhere in the system, and supported by a synthetic program of data acquisition and analyses that takes advantage of information derived from studies undertaken beyond the focal area considered in this report. This logic supports the expansion of the EIS for the Management Plan to include the Middle Mississippi River.

Organization: Missouri Levee & Drainage District Association

Commenter: Robert J Vincze **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 69 **Comment Id:** 341612 **Coder Name:** NLANGDON

Comment Text: Toward the end of directing scarce resources to reasonable alternatives, we request that the U.S. Army Corps of Engineers and the U.S. Fish & Wildlife Service expand the scope of the EIS and the amended biological opinion for the Management Plan to include the Middle Mississippi River. We believe that such an expanded scope is necessary to avoid alternatives whose implementation is remote and speculative and that have little chance of aiding the recovery of the pallid sturgeon. Our request to expand the scope of the EIS to include the Middle Mississippi River mirrors the findings of the Missouri River Recovery Program



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Independent Science Advisory Panel (ISAP), in its Final Report on Spring Pulses and Adaptive Management, dated November 30, 2011 (11-STRI-1482), page 51: Recovery of pallid sturgeon in the lower Missouri River ultimately might not depend on successful recruitment below Gavins Point Dam. Given the minimal extent of low-velocity habitat that exists downriver from Gavins Point Dam, pallid sturgeon larvae may be transported downstream at rates proportional to discharge, and exit the lower Missouri River. Such potential contributions of larval pallid sturgeon to the middle Mississippi River suggests that the importance of conservation efforts on the lower Missouri River may be realized in sustaining pallid sturgeon in a greater geographic context. Recruitment in areas where pallid sturgeon are known to spawn below Gavins Point Dam likely needs to be inferred from sampling an extensive area of the Missouri and Mississippi river basins.

Organization: Missouri Levee & Drainage District Association

Commenter: Robert J Vincze **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 70 **Comment Id:** 341606 **Coder Name:** NLANGDON

Comment Text: 1. The process should recognize existing congressionally "authorized purposes" of the Missouri River System and obligations of the BSNP in addition to ESA considerations.

Organization: Ameren Corporation

Commenter: John Pozzo **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 68 **Comment Id:** 341596 **Coder Name:** NLANGDON

Comment Text: I request that the U.S. Army Corps of Engineers and the U.S. Fish & Wildlife Service include sedimentation in the scope of the Management Plan and the EIS.

Organization: Law Offices of Robert J. Vincze

Commenter: Robert J Vincze **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 67 **Comment Id:** 340261 **Coder Name:** NLANGDON

Comment Text: Purpose and Need The purpose and need statement is intended to identify and describe the problem that the proposed action is designed to address. We recommend the purpose and need statement remain broad enough to encompass a range of "reasonable" alternatives to meet the basic (i.e., underlying) project purpose, including the proposed action and other methods available.

Organization: U.S. Environmental Protection Agency Region 8

Commenter: Suzann Bohan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 65 **Comment Id:** 340199 **Coder Name:** NLANGDON

Comment Text: The MRRMP and EIS process should include these overarching principles in framing the purpose and need, formulating alternatives, developing impact assessment methods, and selecting a preferred plan or series of plans that best address the needs of the



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

three federally-listed species and fulfill the Corps' mitigation obligation.

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 65 **Comment Id:** 340197 **Coder Name:** NLANGDON

Comment Text: When the 1983 Principles and Standards were updated in 2013 by the Council on Environmental Quality they changed the national framework for water development projects across the country (CEQ 2013). This framework identified six guiding principles which are directly relevant to the Missouri River mitigation work. They are: 1.) Healthy and Resilient Ecosystems- Federal investments in water resources should protect and restore the functions of ecosystems and mitigate any unavoidable damage to these natural systems. 2.) Sustainable Economic Development- Federal investments in water resources should encourage sustainable economic development through sustainable use and management of water resources ensuring both water supply and water quality. 3.) Floodplains- Federal investments in water resources should avoid the unwise use of floodplains and flood-prone areas and minimize adverse impacts and vulnerabilities in any case in which a floodplain/flood-prone area must be used. Unwise use includes actions or changes that have unreasonable adverse effects on public health and safety, or are incompatible with or adversely affect one or more floodplain functions that lead to a floodplain that is no longer self-sustaining. 4.) Public Safety - Threat to people from natural events should be assessed in both existing and future conditions, and ultimately in the decision-making process. Alternative solutions must avoid, reduce, and mitigate risks to the extent practicable and include measures to manage and communicate these risks. 5.) Environmental Justice- Agencies should ensure Federal actions identify any disproportionately high and adverse public safety, human health, or environmental burdens of projects on Minority, Tribal or low-income populations. Alternatives should seek to avoid adverse effects to these communities, and include effective public participation throughout both project planning and decision-making. 6.) Watershed Approach- A watershed approach to analysis and decision-making facilitated evaluation of a more complete range of alternatives is more likely to identify the best means to achieve multiple goals over the entire watershed. A watershed approach aides the proper framing of a problem by evaluating it on a system level to identify root causes and their interconnectedness to problem symptoms.

Organization: Nebraska Game and Parks Commission

Commenter: James N Douglas **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339387 **Coder Name:** NLANGDON

Comment Text: Limitations Imposed by Mississippi River Management Needs Increasingly within the last five years, navigational interests outside the Missouri River basin have urged greater consideration for the management of Missouri River flows to support the operational needs of the Mississippi River, particularly from St. Louis to the confluence with the Ohio River. Pressure to restrict operational alternatives for the Missouri River in the future could affect Management Plan outcomes. The EIS should recognize this factor in the assessment of the effects of alternatives and selection of the preferred alternative.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339373 **Coder Name:** NLANGDON

Comment Text: Resource Scope In a similar fashion, the final design of the Missouri River Recovery Management Plan should result from a comprehensive assessment (i.e., EIS) of all factors contributing to the decline and recovery of ESA-listed species and the loss and restoration of riverine habitat within the river and floodplain. Flow management of the Missouri River reservoir system and contributions from major tributaries of flow and sediment should be described and evaluated in the context of species needs and habitat development and sustainability within the mainstem river, i.e., channel and active floodplain. For example, this might include the regulated and unregulated contributions from the Platte and Kansas Rivers to the mainstem physical and biological system.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339371 **Coder Name:** NLANGDON

Comment Text: Geographic Scope Although intended by the Corps to be "narrower than the scope and purpose of the study from section 5018(a) of the Water Resources Development Act of 2007," known as the Missouri River Ecosystem Restoration Plan, the assessment under NEPA should include all geographical areas contributing to the objectives identified for the Management Plan. That is, although the final Management Plan might prescribe actions to be implemented only within the mainstem river using existing authorities, the NEPA documentation supporting the development and selection of a preferred alternative which would serve as the Management Plan should be more comprehensive and not be restricted in its analysis and assessment of the existing environment and the relationship between tributaries, floodplains and channel. To the extent that both active and inactive floodplains (e.g., meander belt) and tributaries affect the river mainstem's ability to support listed species and sustain ecologically important habitat, those Geographical areas should be included in the EIS assessment. The EIS is not the Management Plan, but the support documentation for that Plan, and its comprehensiveness should not be limited by existing authorities, policy or past practice which might ultimately shape the selection of an alternative as the Management Plan. The EIS should include the effects and influences of major tributaries and the bluff-to-bluff floodplain of the mainstem river. Actions taken under the Management Plan might be limited to a defined main channel environment, but the assessment under NEPA must be more comprehensive to satisfy NEPA and CEQ implementing regulations.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 61 **Comment Id:** 339297 **Coder Name:** NLANGDON

Comment Text: The planning process should include these overarching principles in framing the purpose and need, formulating alternatives, developing impact assessment methods, and selecting a preferred plan or series of plans that best address the needs of the three federally listed species and fulfill the Corps' mitigation obligation.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Amy Salveter **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 61 **Comment Id:** 339296 **Coder Name:** NLANGDON

Comment Text: The March 2013 "Principles and Requirements for Federal Investments in Water Resources" updated the national framework for water development projects across the country. That framework identifies six guiding principles which we believe are directly relevant to this effort. Those are: 1.) Healthy and Resilient Ecosystems- Federal investments in water resources should protect and restore the functions of ecosystems and mitigate any unavoidable damage to these natural systems. 2.) Sustainable Economic Development - Federal investments in water resources should encourage sustainable economic development through sustainable use and management of water resources ensuring both water supply and water quality. 3.) Floodplains - Federal investments in water resources should avoid the unwise use of floodplains and flood-prone areas and minimize adverse impacts and vulnerabilities in any case in which a floodplain/flood-prone area must be used. Unwise use includes actions or changes that have unreasonable adverse effects on public health and safety, or are incompatible with or adversely affect one or more floodplain functions that lead to a floodplain that is no longer self-sustaining. 4.) Public Safety -Threat to people from natural events should be assessed in both existing and future conditions, and ultimately in the decision-making process. Alternative solutions must avoid, reduce, and mitigate risks to the extent practicable and include measures to manage and communicate these risks. 5.) Environmental Justice - Agencies should ensure Federal actions identify any disproportionately high and adverse public safety, human health, or environmental burdens of projects on Minority, Tribal or low-income populations. Alternatives should seek to avoid adverse effects to these communities, and include effective public participation throughout both project planning and decision-making. 6.) Watershed Approach - A watershed approach to analysis and decision-making facilitated evaluation of a more complete range of alternatives and is more likely to identify the best means to achieve multiple goals over the entire watershed. A watershed approach aides the proper framing of a problem by evaluating it on a system level to identify root causes and their interconnectedness to problem symptoms.

Organization: U.S. DOI Fish and Wildlife Service, Missouri Ecological Services Field Office

Commenter: Amy Salveter **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 59 **Comment Id:** 339250 **Coder Name:** NLANGDON

Comment Text: The Missouri River Recovery Plan needs to address these questions: What is the most ecologically dynamic state possible and how will this condition be achieved? How has the operation of the dams affected bio complexity, disturbance regimes, natural heterogeneity or non-equilibrium conditions, nutrient cycling, the role of large wood in rivers, and trophic interaction in aquatic ecosystems?

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 59 **Comment Id:** 339249 **Coder Name:** NLANGDON

Comment Text: The appropriate scope of the recovery plan is important to the successful



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

achievement of species recovery goals and the improvement of the Missouri River's ecological and hydrological function. The scope of the plan should not be limited to the main stem of the River. It should be recognized that the tributaries to the main stem are important habitat that is integral to the habitat along the Missouri River and landscape factors affect the river as well. Tributary influences, floodplain connectivity, and other basin-wide factors that affect the riverine environment should be addressed in the river recovery plan.

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 55 **Comment Id:** 339112 **Coder Name:** NLANGDON

Comment Text: For example, the charge to the team preparing the Environmental Impact Study/Statement does not include a major and recent development affecting species and river recovery. The oil and gas industry has moved into the basin en masse in efforts to turn the basin into a Saudi Arabia on the American continent. The Army Corps reluctance to take the steps needed to protect native fish and their habitat from the tens of thousands of fracking wells that have invaded the basin in the last six years is clear testimony that the proposed management plan will be addressing 20th century problems, not 21st century problems. (See 2013, Diana M. Papoulias and Anthony L. Velasco) In the past Oil and gas played a small role in the basin, but they are now the thirstiest players in the region. What they do with the reservoir water is quite different than what hydropower does. The Oil and Gas industry must inject their polluted waters deep into the earth; no one else can use that water. Hydropower releases relatively clean water back into the system. While the states can assist in addressing the fracking invasion, it will be the leadership of the Corps that can demand water quality initiatives that are used throughout the basin.

Organization:

Commenter: Jim P Redmond **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 55 **Comment Id:** 339111 **Coder Name:** NLANGDON

Comment Text: Why spend tens of millions of dollars on the Yellowstone River fish passage and then forego a regulatory regime that protects fish in the Williston Reach of the Missouri River.

Organization:

Commenter: Jim P Redmond **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 55 **Comment Id:** 339109 **Coder Name:** NLANGDON

Comment Text: The proposed Missouri River Recovery Management Plan is based on an unscientific assumption that federal efforts can return the threatened and endangered species to a viable condition without addressing the health of the river itself. The Missouri River is the longest and most industrialized river in the nation. Ignoring the impact of past federal actions will produce three wasted years spent in preparing a narrow management plan that goes through the motions (the NEPA process) without any outcome different than what is operating today, 2013.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization:

Commenter: Jim P Redmond **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 20 **Comment Id:** 338244 **Coder Name:** NLANGDON

Comment Text: Since the biological opinion includes flow releases, will the impact on the Mississippi segment be analyzed?

Organization:

Commenter: David Shorr **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 19 **Comment Id:** 338241 **Coder Name:** NLANGDON

Comment Text: Is recreational access a part of the whole restoration recovery part of the lower Missouri River?

Organization: Mo Valley Waterfowler Association

Commenter: Bill Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337942 **Coder Name:** NLANGDON

Comment Text: Finally, I strongly urge the Corps to not succumb to the temptation to turn the MRRMP-EIS into a Missouri River Recovery Ecosystem Restoration Plan (MRERP) or Missouri River Authorized Purposes Study (MRAPS) by extension. By defunding these studies, Congress has shown there is no interest in the studies proceeding. It has been stated by Corps staff that the MRRMP-EIS is not to include the MRERP or MRAPS. Our stakeholders appreciate that position and urge the Corps to maintain it throughout the MRRMP-EIS process despite pressure to do otherwise.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 20 **Comment Id:** 337756 **Coder Name:** NLANGDON

Comment Text: Failure to include the impacts of the Missouri on the free flowing segment of the Mississippi River and the inverse ignores the direct connection of these water courses.

Organization:

Commenter: David Shorr **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 50 **Comment Id:** 337752 **Coder Name:** NLANGDON

Comment Text: The League also urges the ACE to consider other areas along the mainstem, as authorized in Section 3176 of WRDA 2007, in the upper basin states for possible recovery efforts. We believe this will improve recovery opportunities for the species by putting recovery projects across a wider geographic area and also increase public support of the recovery program by having projects on the ground in multiple states rather than having them clustered in



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

just one area.

Organization: Izaak Walton League

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337718 **Coder Name:** NLANGDON

Comment Text: Currently, programs on the Missouri River for the 3 listed species considered for CEM development are so costly that these 3 species are regularly in the top 10 endangered species nationwide for federal expenditures and this ranking is driven by USACE expenditures on the Missouri River. For Interior Least Terns, this expenditure is in no way scaled to their degree of imperilment. While the reasons for these expenditures may be clear to program administrators on the Missouri River, it is confusing to conservation professionals from outside the Missouri basin, or the general public, to see USFWS expend this kind of effort and resources (through the USACE of course) on an endangered species that is doing quite well when species that are in much greater need of conservation attention are so starved for resources. This type of imbalanced attention and spending directed towards a small number of taxa runs the risk of making ESA implementation appear "arbitrary and capricious" or as if the Act is being used as a regional-job creation program. These perceptions do not strengthen public support for the ESA or in Congress. Over the next few years, in response to lawsuits forcing listing decisions, several new species that are truly imperiled will be added to the endangered species list. Against this backdrop, it will seem even more bizarre to be tipping federal expenditures towards the Missouri River for a species like Interior Least Tern, where the listed population is in much better shape than many other species (both on and off the list), and when a very small fraction of its population occurs on the Missouri River.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 40 **Comment Id:** 337698 **Coder Name:** NLANGDON

Comment Text: The U.S. Army Corps of Engineers (Corps) MRRMP problem statement provides an initial step toward a balanced approach leading to MRRP success.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 16 **Comment Id:** 337686 **Coder Name:** KSMITH

Comment Text: Completion of the plan will be critical for the recovery of the species.

Organization:

Commenter: Chris Larson **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 14 **Comment Id:** 337684 **Coder Name:** KSMITH

Comment Text: Will you include the flood of 2011 in your study?

Organization:



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Bill Lay **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 8 **Comment Id:** 337678 **Coder Name:** KSMITH

Comment Text: Are impacts of authorized purposes on the system operation going to be scoped (Missouri River Authorized Purposes Study.

Organization:

Commenter: Chris Larson **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 6 **Comment Id:** 337676 **Coder Name:** KSMITH

Comment Text: Is recovery planned upstream from Fort Peck Lake?

Organization:

Commenter: Joe Gibbs **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 5 **Comment Id:** 337674 **Coder Name:** KSMITH

Comment Text: How is the study different than MRERP, referring to the Missouri River environmental restoration?

Organization:

Commenter: David Shorr **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 37 **Comment Id:** 337471 **Coder Name:** NLANGDON

Comment Text: In view of the fact that certain interests, such as navigation, agriculture, intake, interests, and the state of Missouri, are powerful lobbyists who oppose any change in the river, is there going to be a sincere effort to analyze the ecological needs and conditions, and develop an alternative that will truly help the species and ecosystem, or is the Corps going to once again accommodate those powerful interests and produce a no action alternative with the rationale that what they have been doing is enough to preclude jeopardy? In the end, will there actually be any improvement for fish and wildlife, the T&E species, or will it once again be the status quo and another generation before any effort is made to improve the Missouri River?"

Organization:

Commenter: Marion Maas **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 34 **Comment Id:** 337460 **Coder Name:** NLANGDON

Comment Text: Will the water quality of the tributaries be part of the analysis?

Organization:

Commenter: Theadora B Bear **Page:** **Paragraph:**
Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 31 **Comment Id:** 337450 **Coder Name:** NLANGDON

Comment Text: With pressure from the energy industry to use Missouri River water for fracking, why isn't the Army Corps taking a more proactive approach in this study to address ecosystem restoration?

Organization:

Commenter: Theadora B Bear **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 30 **Comment Id:** 337449 **Coder Name:** NLANGDON

Comment Text: Will tributaries and the role they play be considered when developing the alternatives?" "Didn't Section 5018 of WRDA 2007 give the Corps and Fish and Wildlife Service the authority to work in the tributaries?"

Organization:

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 29 **Comment Id:** 337448 **Coder Name:** NLANGDON

Comment Text: In order for the public to make an informed comment, what is the overall health of the Missouri River now that impacts the two to three species you identified compared to maybe ten to twenty years ago?

Organization:

Commenter: Theadora B Bear **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 28 **Comment Id:** 337446 **Coder Name:** NLANGDON

Comment Text: The federal register notice for this EIS specifies the limit that this EIS will not look at ecosystem restoration. What will the Army Corps and Fish and Wildlife Service do if the science inputs to adaptive management indicate that ecosystem restoration is exactly what is needed to recover the endangered in the 51 of 67 other Missouri River fish species that are rare or in decline, as many of us believe to be the case?

Organization:

Commenter: Thomas Ball **Page:** **Paragraph:**

Kept Private: No

PN3500 Purpose and Need: Scope of the Analysis (Tribal) (Substantive)

Correspondence Id: 47 **Comment Id:** 337708 **Coder Name:** NLANGDON

Comment Text: Another question I have, we talk about, you know, the T and E season and everyone says, you know, the plover and the tern and the sturgeon, but what about the culturally significant species? Is there anything in the future to actually get those species from tribes and to try and work more with those? Because I -- I understand, you know, the T and E



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

species are federally listed, but there are a lot of culturally significant species along the river that are important to the tribes and I would like just to see more involvement with those because a lot of those species -- they don't get any recognition, you know, and the habitat is being destroyed. Like we had a lot of cottonwoods back, you know, historically. We don't have any of those anymore. Those -- our bald eagles are there, our bald eagle habitat and all of that and there's a lot of edible plants that our tribes use that aren't there.

Organization: Three Affiliated Tribes

Commenter: Pete Coffey **Page:** **Paragraph:**

Kept Private: No

PN5000 Purpose And Need: Regulatory Framework (Substantive)

Correspondence Id: 33 **Comment Id:** 337459 **Coder Name:** NLANGDON

Comment Text: The authority is still there; the funding has been limited for MRERP?"

Organization:

Commenter: Paul Lepisto **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339377 **Coder Name:** NLANGDON

Comment Text: Federal and State Program Integration The EIS should describe all existing Federal and State programs affecting river resources and the current effect of these programs on ESA-protected river species, native species and river habitat. Further, the EIS should describe how these existing programs might shape the effectiveness of the Management Plan itself. How well this Management Plan achieves the objectives identified and incorporated within 'project purpose' is critically dependent upon the regulatory and resource management milieu created by these existing other programs and authorities.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 58 **Comment Id:** 339247 **Coder Name:** NLANGDON

Comment Text: The State of Kansas and Department of Wildlife, Parks and Tourism have participated in mitigation and recovery efforts related to the Missouri River since these programs were in their earliest planning stages. As a result of past projects and actions by the federal government, through the Corps of Engineers, state and federal trust resources associated with the Missouri River were dramatically impacted. And ongoing impacts associated with those projects continue today. Recognizing the past and ongoing impacts to state trust resources that occurred as a result of these federal projects, Congress directed the Corps to mitigate for these damages through the Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project. While much work has been accomplished, much work remains to be completed and the State places a very high value on the Mitigation Project and the Corps completing it's obligation.

Organization: Kansas Department of Wildlife, Parks and Tourism

Commenter: Robin Jennison **Page:** **Paragraph:**



Kept Private: No

Correspondence Id: 51 **Comment Id:** 338239 **Coder Name:** NLANGDON

Comment Text: 5. Are there other efforts ongoing or planned that should be considered when developing the Management Plan and Environmental Impact Statement? Answer: Gulf Coast Restore Act, Vanishing Paradise Int.

Organization: Mo Valley Waterfowlers Association

Commenter: Bill Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 51 **Comment Id:** 338237 **Coder Name:** NLANGDON

Comment Text: 3. What information sources are available so that these issues and resources may be evaluated? Answer: Review Vanishing Paradise Int. Gulf Coast Restore Act.

Organization: Mo Valley Waterfowlers Association

Commenter: Bill Smith **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337722 **Coder Name:** NLANGDON

Comment Text: Finally, while there are many potential paths to "jeopardy avoidance," the current USFWS' BiOp contains a set of highly prescriptive "means objectives" for jeopardy avoidance on the Missouri River, codified as very specific Reasonable and Prudent Alternatives (RPAs). Some of these RPAs (e.g., sandbar creation, shallow-water habitat creation) are quite costly and have massive footprints (in fact, the Sandbar Habitat Creation RPA required its own Programmatic Environmental Impact Statement [USACE 2011]). Given the high costs of existing RPAs and the legal obligation to implement them under Section 7(a)(2), these particular management actions have dominated USACE management strategies on the Missouri River over the past decade. While I believe that much more effective and cost-effective management plans could be developed if these constraints were lifted, it is my understanding that they have not been (e.g., the USACE is still operating under jeopardy BiOp for all 3 species). Is the implementation of an alternative management strategy really possible given the legal standing of the current BiOp?

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

PN8000 Purpose And Need: Objectives In Taking Action (Substantive)

Correspondence Id: 40 **Comment Id:** 337478 **Coder Name:** NLANGDON

Comment Text: The MRRIC has recognized that addressing species needs and maintaining all authorized purposes cannot be a mutually exclusive endeavor. Though the impetus of the MRRIC is on recovery-related issues, the committees charter clearly articulates their belief in a balanced approach to species recovery through the following language...MRRICs wisdom regarding a balanced approach to species recovery is paramount to ongoing support for the



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

MRRP. Human considerations must be extensively taken into account as alternatives are identified in this process. The success of the MRRP will be determined by the degree to which human and species interests are balanced. Win-win alternatives are strongly encouraged in order that all interests are best able to support future management actions... Stewardship of this planet is the responsibility of all people. Environmental, social, economic and cultural stewardship is possible while using a multi-lateral approach subject only to win-win alternatives. Consequently, while species objectives are considered, I strongly urge the Corps to follow through with the intent of their problem statement by carefully analyzing and accounting for all human considerations brought to their attention during this process.

Organization: Coalition to Protect the Missouri River

Commenter: Randy Asbury **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 64 **Comment Id:** 339368 **Coder Name:** NLANGDON

Comment Text: The EPA has and continues to support the efforts of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service and its other Federal and State partners in reconnecting the Missouri River and its tributaries to their floodplains, restoring a more natural river hydrology, creation of critical habitat necessary to the recovery of threatened and endangered species, restoring native aquatic species, reducing invasive species impacts and comprehensively creating a sustainable Missouri River environment. These objectives are consistent with the sole objective of the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The complex nature of a floodplain river and its many unique biological, hydrological and geomorphologic components requires regulatory approaches which challenge government's ability to balance benefits and impacts. However, the sustainable management of the nation's natural resources for the benefit of future generations should be the only measure of our success.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 6 **Comment Id:** 337677 **Coder Name:** KSMITH

Comment Text: How do wetlands help pallid sturgeon and forested areas help fish and birds?

Organization:

Commenter: Joe Gibbs **Page:** **Paragraph:**

Kept Private: No

RF1000 References: General Comments (Substantive)

Correspondence Id: 49 **Comment Id:** 337743 **Coder Name:** NLANGDON

Comment Text: References Akcakaya, H. R., J. L. Atwood, D. Breininger, C. T. Collins, and B. Duncan. 2003. Metapopulation dynamics of the California least tern. *Journal of Wildlife Management* 67:829-842. Buenau, K. E., T. L. Hiller, and A. J. Tyre. 2013. Modelling the Effects of River Flow on Population Dynamics of Piping Plovers (*Charadrius Melodus*) and Least Terns (*Sternula Antillarum*) Nesting on the Missouri River. *River Research and Applications*: published



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

online, July 26, 2013. Lott, C. A., and R. L. Wiley. 2012. Effects of dam operations on Least Tern nesting habitat and reproductive success below Keystone Dam on the Arkansas River. Page 113. US Army Corps of Engineers, Engineer Research and Development Center, Dredging Operations and Technical Support Program. ERDC/EL CR-12-4. Lott, C.A., R.L. Wiley, R.A. Fischer, P.D. Hartfield, and J.M. Scott. 2013. Interior Least Tern (*Sternula antillarum*) breeding distribution and ecology: implications for population-level studies and the evaluation of alternative management strategies on large, regulated rivers. *Ecology and Evolution* 3(10): 3613-3627. U.S. Army Corps of Engineers (USACE). 1978. Missouri River Bank Stabilization and Navigation Project, Final Environmental Statement, Continuing Construction and Maintenance. Missouri River Division, Omaha, Nebraska. U.S. Army Corps of Engineers (USACE). 1981. Missouri River Bank Stabilization and Navigation Project Final Feasibility Report and Final Environmental Impact Statement for the Fish and Wildlife Mitigation Plan. Kansas City District. U.S. Army Corps of Engineers (USACE). 1987. Missouri River Fish and Wildlife Mitigation Project Final Environmental Impact Statement and Record of Decision. Kansas City and Omaha Districts. USFWS. 2003. Amendment to the 2000 Biological Opinion on the operation of the Missouri River main stem reservoir system, operation and maintenance of the Missouri River bank stabilization and navigation project, and operation of the Kansas River reservoir system. Page 321 pp.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 341993 **Coder Name:** NLANGDON

Comment Text: 11. Include USFWS Interior Least Tern 5-year Review results in alternatives

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 68 **Comment Id:** 341604 **Coder Name:** NLANGDON

Comment Text: Footnotes: 1 See Coastal and Hydraulics Laboratory, Engineer Research and Development Center (ERDC), at CHL-Info@erdc.usace.army.mil; see also <https://swwrp.usace.army.mil>. 2. Recovery Plan for the Pallid Sturgeon (*Scaphirhynchus a/bus*), USFWS, November 7, 1993. 3. Turbidity levels where pallid sturgeon have been found in South Dakota range from 31.3 Nephelometric turbidity units (NTU) to 137.6NTU (J. Erickson, pers. comm. 1992); Recovery Plan at page 8. 4 The Recovery Plan sets out the detriments of reduced turbidity to the pallid sturgeon: The turbidity caused by suspended sediment also provided the pallid sturgeon and other native fish, adapted to living in a nearly sightless world, with cover while moving from one snag or undercut bank to another. Today, water clarity has increased dramatically, and this essential cover is gone. Under such conditions, predation by sight-ending predators, such as northern pike (*Esox lucius*), walleye (*Stizostedion vitreum*), and smallmouth bass (*micropterus dolomieu*), can be expected to significantly impact native species not equipped by evolution with good eyesight. It is also suspected that increased clarity of the Missouri River affected food availability by changing species composition and by making it more difficult for pallid sturgeon, and other native species, to capture prey in the clearer water environment. In the Missouri River, pelagic planktivores and sight-feeding carnivores have increased abundance, whereas species specialized for life in the turbid, predevelopment river (like the pallid sturgeon) have decreased in abundance (Pflieger and Grace 1987). This change



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

in community structure is less apparent where changes in the natural hydrograph, temperature regime, and turbidity are less pronounced. Recovery Plan, page 12.

Organization: Law Offices of Robert J. Vincze

Commenter: Robert J Vincze **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 66 **Comment Id:** 340222 **Coder Name:** NLANGDON

Comment Text: The members of the Dredgers Group, consistent with the requirements under NEPA as directed by the Corps of Engineers, paid for an EIS to be carried forward by the Corps of Engineers which was completed in 2011. That document addressed numerous issues relating to the lower BSNP and should be a worthy reference document relating to this EIS effort and Management Plan.

Organization: Missouri River Dredgers Group

Commenter: David A Shorr **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 59 **Comment Id:** 339262 **Coder Name:** NLANGDON

Comment Text: 17. Include information from the Government Accountability Office (GAO) report (GAO-09-224R Missouri River Navigation)

Organization: U.S. DOI National Park Service Midwest Region

Commenter: Michael T Reynolds **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337744 **Coder Name:** NLANGDON

Comment Text: References (continued) U.S. Army Corps of Engineers (USACE). 2003a. Missouri River Fish and Wildlife Mitigation Project Final Supplemental Environmental Impact Statement and Record of Decision. Kansas City and Omaha Districts. U.S. Army Corps of Engineers (USACE). 2004. Missouri River Master Water Control Manual Review and Update Final Environmental Impact Statement (FEIS). Northwest Division, Omaha District. U.S. Army Corps of Engineers (USACE). 2004a. 2004 Annual Shallow Water Habitat Report, Environmental Assessment and Finding of No Significant Impact. Kansas City District. U.S. Army Corps of Engineers (USACE). 2005. Cumulative Environmental Impact Statement for Bank Stabilization. Appendix C: Bank Stabilization Analysis: Draft Report. Northwestern Division. Omaha District. U.S. Army Corps of Engineers (USACE). 2007. Missouri River mainstem reservoir system: system description and regulation. Page 54 pp. U.S. Army Corps of Engineers (USACE). 2010. Cottonwood Management Plan/Programmatic Environmental Assessment Proposed Implementation of a Cottonwood Management Plan Along Six Priority Segments of the Missouri River. Omaha District. U.S. Army Corps of Engineers (USACE). 2011. Final Programmatic Environmental Impact Statement for the Mechanical and Artificial Creation and Maintenance of Emergent Sandbar Habitat in the Riverine Segments of the Upper Missouri River (May 2011)

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No



SUP1000 Support for the Missouri River Recovery Management Plan and EIS (Substantive)

Correspondence Id: 64 **Comment Id:** 339368 **Coder Name:** NLANGDON

Comment Text: The EPA has and continues to support the efforts of the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service and its other Federal and State partners in reconnecting the Missouri River and its tributaries to their floodplains, restoring a more natural river hydrology, creation of critical habitat necessary to the recovery of threatened and endangered species, restoring native aquatic species, reducing invasive species impacts and comprehensively creating a sustainable Missouri River environment. These objectives are consistent with the sole objective of the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The complex nature of a floodplain river and its many unique biological, hydrological and geomorphologic components requires regulatory approaches which challenge government's ability to balance benefits and impacts. However, the sustainable management of the nation's natural resources for the benefit of future generations should be the only measure of our success.

Organization: U.S. EPA Region 7, Environmental Services Division

Commenter: Jeffery Robichaud **Page:** **Paragraph:**

Kept Private: No

TC1000 Resources of Concern - Tribal (Substantive)

Correspondence Id: 47 **Comment Id:** 337704 **Coder Name:** NLANGDON

Comment Text: Well, I guess what I'm getting at here -- I guess I'm kind of going at it in a roundabout way here -- you say that there's going to be creation of habitat north of Gavin's Point Dam and is that in the progress right now or is it proposed? Yeah. What I'm getting at here is, you know, from Fort Peck all the way down to Sioux City, you know, the Three Affiliated Tribes has got graves all along that riverbank, you know, some that are known, some that are not known. And when you're talking about creation of habitat, heavy equipment, ground disturbance and all of that, my concern is graves. You're going to turn up some graves and stuff, you know, along that, because -- Wait a minute -- our graves are not just confined to the reservations. They're all the way along. Okay. Now, if you've done that to the north where the river has -- like let's say just above Gavins Point and all of that, the river, of course, is a lot wider than the original channel was simply because of the dams and the backup. Now you're doing that in the middle. The original riverbanks are in the middle. There are burials along those original riverbanks under the water. So that's a concern there, too, for us. Who knows, you might -- if you're dredging, you might bring somebody up out in the mid channel where the old channel was.

Organization: Three Affiliated Tribes

Commenter: Pete Coffey **Page:** **Paragraph:**

Kept Private: No



TC1500 Past Projects - Tribal (Substantive)

Correspondence Id: 43 **Comment Id:** 337534 **Coder Name:** NLANGDON

Comment Text: I have a question. Let's see, a couple years ago -- or the past two years I was -- well, I've been with Water Resource for a year now, so two years before that, prior to that, I was the EPA Director for the Crow Tribe. And there was a 404 violation on the Crow Tribe down in Lodge Grass area. And I know the Army Corps of Engineers were involved with that, and I think it went federal. There was a gentleman went, I guess created a reservoir on somebody's land without permission with a dozer, and he tracked all over the hills and everything. A lot of sacred sites up there. So the Army Corps of Engineers was - I guess they went federal, so I'm not sure where that ended up. And then there was another incident just recently, and Emerson might know about this, but over in Pryor, still within our boundaries, there's a gentleman that redirected the creek, Sage Creek. Sage Creek, from that point, he created or put in some headgates. From that point, the original creek bed is dry, but everything's going into these headgates. So the BIA is the one that brought it to our attention. So I took some culture guys out there along with the BIA and the Superintendent, and we asked the Army Corps of Engineers to come, and they said it wasn't -- they couldn't help us. So what is the, I guess, the - where does that stop? I mean, where do you guys stop?

Organization: Crow Tribe

Commenter: Myron Shield **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 43 **Comment Id:** 337543 **Coder Name:** NLANGDON

Comment Text: See, that creek -- okay, I'm going to explain. Okay, the creek comes out, and then there's two headgates. The reason for these headgates is the farmer outside the reservation lives right on that corner. He directed the water to accommodate his pivots. So that canal goes all the way to the boundary. There's a fence line there, and so right off the fence line, he's thinking that fence line is the boundary. So outside the fence line, that's where his siphon starts. Concrete structures and everything is right there, and he's dug up some ground to make these ponds. So, I go back -- and I'm the GIS guy for the tribe. So I go back with the BIA and find out their boundary lines for the reservation, and it shows that he's still within our boundaries. And this is very -- I mean the canal was made over 30 years ago. The reason why we know that is the concrete structures, the gentleman wrote the 11 dates when the concrete was made. Yeah, he was proud of his work. He even wrote his name, so... I was wondering because right next to the original creek, there's 30 teepee rings in that area. And our original Crow boundaries show that it goes into Wyoming. So, I'm sure there's more out there. There's a lot of incidents like that on the Crow Reservation. We just got a ringing out. Just like the 404, there's a lot of that going on. People tell us, but people don't do anything about it, so I'm going to try and get it heard more. I think the first one, the gentleman's name was Dixon. When we pushed it through, we was hoping it would be like an example so it would stop. Because there's a lot of that going on at the reservation. There's another one we need to get you guys involved in. Over in Pryor, there's a gentleman that bladed a road. Took half of a hill down. Well, he was thinking he'd make the road nicer. It looks like an interstate. He took half of a hill down and made the road really nice, but it's still taking -- it goes through tribal lands all the way through. It starts at the -- there's a feedlot on the Toluca Road, so that connects all the way to the Pryor Road, and that road is very nice now. But, he went through a lot of land to do it.

Organization: Crow Tribe



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Myron Shield **Page:** **Paragraph:**
Kept Private: No

TC3500 Historic preservation: guiding regulations, policies, laws - Tribal (Substantive)

Correspondence Id: 42 **Comment Id:** 337531 **Coder Name:** NLANGDON

Comment Text: So you have to follow the Section 106 -- the NHPA. Is there somebody that you've already, a company that's already working on doing the cultural surveys, and how can we stay involved with this. We have quite a crew that can actually get out and help and assist with surveys. I think they will end up becoming necessary because there's a lot of issues with grave sites that get exposed along the banks. And so based on that, I think it should be something that should be jumped on right away. I think waiting until between "Objectives" and "Alternatives" might be opening yourselves up to problems later. Maybe if you start now contacting all the tribes from Fort Peck all the way down. But we want to stay involved as the Crow Tribe because Crow Country, you know, the Missouri went right through Crow Country. Well, I think that's kind of -- like I was just telling her, that there's really -- I feel like I really can't comment on anything because I don't really have a lot of information. But, I did offer my one comment, which is something I believe that should happen, you know, starting the 106 earlier.

Organization: Crow Tribe

Commenter: Emerson Bullchief **Page:** **Paragraph:**
Kept Private: No

TC4500 Tribal involvement in project (Substantive)

Correspondence Id: 42 **Comment Id:** 337532 **Coder Name:** NLANGDON

Comment Text: And then maybe as we get further, and we get more information, we can start providing more academic comments. You know, Maybe a good thing because of that is since especially you're the tribal liaison, is to start putting together a packet for each tribe on what's been passed back and forth. So that way -- like me, you could have just given me a stack of stuff, "this is what we talked about before", and I would have been on top of it. So, Maybe that's just something new that could happen.

Organization: Crow Tribe

Commenter: Emerson Bullchief **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 41 **Comment Id:** 337760 **Coder Name:** NLANGDON

Comment Text: I wish my cultural guy was here. We just got a new program, a new Cultural Program. We got a Tribal Historic Preservation officer, just like your office. Davey Belgarde, do you know him? Morris Belgarde, Morris Davey Belgarde. I got an official letter to attend these scoping meetings, and it was brought up to my attention by our tribe that more of our staff wants to get that letter, too, not just me.



Organization: Fort Belknap Indian Community

Commenter: Dennis Longknife **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 44 **Comment Id:** 337553 **Coder Name:** NLANGDON

Comment Text: Our tribe leadership changes hands a lot.- We have an election every year. And service on tribal council is two years.- So it's difficult to maintain political integrity.- Even if you do contact somebody that person may not be - the next person might be very interested but never got the letter.- So it's a challenge.- The tribal has its government set up that way. We have an election coming up in October. Could have a dramatic impact on the issue. The chairman is only chosen by the tribal council once they are seated. So it's not -- I think that's how all the offices -- they are chosen by the tribal council so they run as council members.- The general council puts them in, and between them they decide who does what.- Our current tribal chairman is up for reelection.- If he doesn't make it back in we would obviously have a change. Yeah.- It's been a challenge for planning issues as well because we have one council come in and do planning documents and things like that, say we're going to do something this way and then the election, the new council comes in, we don't want to follow that.- So all the effort and planning is put on the shelf.- We have that kind of challenge. Sometimes it's good to almost be connected to tribal staff for consistency. Now staff changes.-But administrations too. Sometimes to maintain the consistency with a tribe like ours which has so much turnover and leadership -- basically you would be coming back every year so just introduce yourself to the council.

Organization: Kickapoo Tribe

Commenter: Steve Corbett **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 43 **Comment Id:** 337545 **Coder Name:** NLANGDON

Comment Text: One thing to keep in mind with the -- I don't know how it is in other tribes, but in our tribe, when there's an administration change, a lot of information don't get passed on. Because I know the guys that used to work in the Cultural, I've worked with them before on making maps for them. It sounds like it didn't get passed on to Emerson, so...Burdick. Do you guys know Burdick Two Leggins? He was the last administration. A lot of his stuff probably didn't get passed on.

Organization: Crow Tribe

Commenter: Myron Shield **Page:** **Paragraph:**

Kept Private: No

TC5500 Affected Environment: Wildlife and Wildlife Habitat - Tribal (Substantive)

Correspondence Id: 47 **Comment Id:** 337706 **Coder Name:** NLANGDON

Comment Text: What I'm saying here, I was down in Pierre after that, you know, and there was this -- right under the bridge between Pierre and Fort Pierre there was this huge sandbar that was a wildlife refuge and it was gone. Did that affect any of the habitat and/or well-being of the plover and all of that? Did that do anything to that? Did that affect the plovers and all? Is that the reason why the opinion was amended? That was really a nice little habitat area there. My wife



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

goes with me when we travel, and she'd always go down there when we were in Pierre, and she was going to go check the refuge out and it was gone. You know, she was freaked out.

Organization: Three Affiliated Tribes

Commenter: Pete Coffey **Page:** **Paragraph:**

Kept Private: No

TC6000 Affected Environment: Species of Special Concern - Tribal (Substantive)

Correspondence Id: 47 **Comment Id:** 337706 **Coder Name:** NLANGDON

Comment Text: What I'm saying here, I was down in Pierre after that, you know, and there was this -- right under the bridge between Pierre and Fort Pierre there was this huge sandbar that was a wildlife refuge and it was gone. Did that affect any of the habitat and/or well-being of the plover and all of that? Did that do anything to that? Did that affect the plovers and all? Is that the reason why the opinion was amended? That was really a nice little habitat area there. My wife goes with me when we travel, and she'd always go down there when we were in Pierre, and she was going to go check the refuge out and it was gone. You know, she was freaked out.

Organization: Three Affiliated Tribes

Commenter: Pete Coffey **Page:** **Paragraph:**

Kept Private: No

Z1000 CEM and Objectives Comments (Substantive)

Correspondence Id: 26 **Comment Id:** 337442 **Coder Name:** NLANGDON

Comment Text: Please explain the note on the pallid sturgeon objectives document. Why is there an emphasis on jeopardy avoidance and not recovery? What does the Corps view as its full responsibility in this regard?"

Organization:

Commenter: Caroline Pufalt **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 35 **Comment Id:** 337461 **Coder Name:** NLANGDON

Comment Text: The pallid sturgeon species objectives does not mention shallow water habitat needs, though Emergent Sandbar Habitat is mentioned in the objectives for both of the birds. Are the shallow water habitat target requirements specified in the 2000 BiOp and amended 2003 BiOp assumed to have as much importance as maintaining all congressionally authorized purposes? It is difficult to know without the CEM and ecological requirements narrative docs being placeholders only for pallid sturgeon.

Organization:

Commenter: Thomas Ball **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337554 **Coder Name:** NLANGDON



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment Text: I do not think that the process for acquiring qualified outside review was appropriate, in particular to ask for expert review 'second-hand.' Most experts don't have the time to review documents like this without notice, and are probably not too flattered to receive a forwarded email. Couple that with the shutdown of the federal government, and I have serious reservations about the review that you will receive. After you have addressed the large data gaps in this document, it should be sent out to a much larger group of individuals, and directly to many of the experts in the field, not just through a forwarded email.

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337555 **Coder Name:** NLANGDON

Comment Text: 2. I realize that you were hoping for external review to provide you with some of the pertinent literature, but much of this document ignored fairly easily accessed literature on piping plovers. I think it is incumbent on your expert panel to provide a strong basis for the model you are presenting, and that was clearly lacking from this document. I don't think it is appropriate to ask outside reviewers to be your research librarians. Without a basis in the literature, it was very difficult for me to evaluate the rankings of importance and uncertainty in this model. One of the purposes of this review was 'To ensure we have gathered the complete body of available science', and I think in that respect this model has failed. I know there are numerous resources out there for the team to use. For one, I believe that the USACE contracted a compendium of literature in the last 10 years, it would seem that would be a good place to start looking for some of this literature. I realize that some of the piping plover literature deals with population off of the Missouri River, but I think it is incumbent on your team to synthesize that literature here, and to apply what can be applied (for example, there is a great deal known about the relationship between food and productivity - that relationship should not be drastically different on the river though the specific mechanism are). Leaving the references area blank suggests that nothing is known about the subject, not just that nothing is known specific to the river. There is not a single reference in the 'Species Performance' section of the model and yet the uncertainty is 'low' across the board - There is plentiful literature on the subject, and it's likely why the uncertainty was low, but why no citations if you are so certain?

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337557 **Coder Name:** NLANGDON

Comment Text: 3. With the exception of 'Importance,' nowhere was it described to me what the definitions of these columns are. 'The Reviewers_Message ver6-2' does not define them (again, with the exception of Importance). I was often very confused how the Uncertainty was defined as one or the other value, the same was true of References and Data Sources. What constitutes a reference? Sometimes it was published literature (a lit cited would help me to evaluate also), but sometimes just a name? Is that a personal communication or was it an incomplete citation (of which there were many in this spreadsheet). Perhaps this is a typical format used for other government exercises, but I am not particularly familiar with it. There was some description of the final product, but not enough for me to really see what my role in this process was.

Organization: Virginia Tech



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337558 **Coder Name:** NLANGDON

Comment Text: I did not have much time to look at the other species diagrams and models, but a quick review of the least tern model showed a similar, if less pronounced, incomplete literature review. In general, I hope that these comments help you in the next stages of this draft model compilation. I have added citations of recent work by VT to the end of the document for potential incorporation into the justification structure of the model.

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337559 **Coder Name:** NLANGDON

Comment Text: References column overarching comment: I find it hard to believe that this is all of the literature that you could find that was pertinent to this subject. For example, I put the words 'piping plover' in google scholar and received almost 9000 hits. At first glance, this model seems to be based on very shaky footing since it references very little of the available literature. When it does cite literature, it is unclear what the paper actually is. There is no literature cited, citations lack years, some are just names, such as my name, without much reference. I find it difficult to review your rankings when almost none of them have references, and those that do, I am unable to necessarily determine the actual source. In some cases there are detailed instructions on the locations of lit, but others frustratingly not so. A lack of transparency in this document as the source of conclusions makes any review exceedingly difficult. GENERAL COMMENT: I'm not sure this document is ready for review frankly. I will do what I can, but I suggest that you reassemble and create a more complete for external review. This type of review should not be considered formative in that your external reviewers do the heavy lifting of putting together your model, they should be reviewing the model and the logic that went into it. That is not really possible in several cases in this document.

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337562 **Coder Name:** NLANGDON

Comment Text: References comment line #7 (under the Drought/Flood Extreme Events Model Component-- mainstem dam operations -- lines 6-20): "There isn't a single citation from #6 to #20. Does this mean that this is all based on conjecture? Where does it come from? Aren't there any Corps documents to cite here? We have been running this river since the middle of last century, I find it hard to believe there isn't something."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337563 **Coder Name:** NLANGDON



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment Text: Data sources comment line #14 (under the Flows Model Component-area of suitable foraging habitat): "Our work, which is not cited though available in JWM Feb. 2013 and provided to the Corps and USFWS, has shown that single snapshots of habitat amounts likely belie the effects of flow on plover demography. We did have luck showing that flow could be used as a proxy for habitat availability in this study"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337564 **Coder Name:** NLANGDON

Comment Text: Uncertainty comment line #22 (related to Flows - area of suitable nesting/brood-rearing habitat): Dan Catlin: "If you raise the water, there are less birds on the reservoir, if you lower there are more. You have 25 years of data showing thing. I think this is anything but uncertain. How many birds did you have on Oahe and Sak in 2011?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337566 **Coder Name:** NLANGDON

Comment Text: References comment line #22 (related to Flows - area of suitable nesting/brood-rearing habitat): "How are you qualifying a reference? If it's not available, isn't it a potential data source? This goes to times when people's names are placed in the reference section - what does that mean exactly? Also - why aren't you referencing all of the documentation of nest numbers for the last quarter century that were collected by the Corps?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337567 **Coder Name:** NLANGDON

Comment Text: Uncertainty comment line #23 (related to Flows - area of suitable foraging habitat): "For the same reasons I mentioned above" (Note: referring to previous comment: "If you raise the water, there are less birds on the reservoir, if you lower there are more. You have 25 years of data showing thing. I think this is anything but uncertain. How many birds did you have on Oahe and Sak in 2011?")

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337568 **Coder Name:** NLANGDON

Comment Text: Uncertainty comment line #25 (under ecological response - Area of Suitable Nesting Habitat, nest density): "How is the relationship between area and density uncertain ever? Density = N/area, regardless of N, density is affected by area."

Organization: Virginia Tech



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337570 **Coder Name:** NLANGDON

Comment Text: Data Sources comment line #25 (under ecological response - Area of Suitable Nesting Habitat, nest density): "Biased how?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337571 **Coder Name:** NLANGDON

Comment Text: References comment line #26 (under ecological response - Area of Suitable Nesting Habitat, immigration/emigration): "Who is T. Grotto?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337572 **Coder Name:** NLANGDON

Comment Text: Data Sources comment #26 (under ecological response - Area of Suitable Nesting Habitat, immigration/emigration): Why is there a question mark here. VT has been collecting demographic data and providing estimates of emigration and immigration in relation ship to available habitat for 10 years. Not to mention, you cited papers that certainly have this data.

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337573 **Coder Name:** NLANGDON

Comment Text: Data Sources comment line #28 (under ecological response - Area of Suitable Nesting Habitat, RPA-ESH Construction): "Again, I don't deny it might be biased, but it's not at all informative to just say that. You need to provide reasons why."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 46 **Comment Id:** 337575 **Coder Name:** NLANGDON

Comment Text: References comment line #29 (under Area of Suitable Nesting Habitat, RPA-Vegetation): "Actually our results showed that habitat modification decreased the use of sandbars by piping plover"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**
Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 46 **Comment Id:** 337576 **Coder Name:** NLANGDON

Comment Text: Uncertainty comment line #31 (under Areas of Suitable Foraging Habitat, nest density): "Again, how can a direct relationship have a high uncertainty?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337577 **Coder Name:** NLANGDON

Comment Text: References comment line #32 (under Areas of Suitable Foraging Habitat, invertebrate prey abundance): "There are so many papers that show an association between foraging habitat and prey that it is glaring they are all missing here. Wasn't there a thesis from SDSU looking at this too?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337579 **Coder Name:** NLANGDON

Comment Text: Data Sources comment line #34 (under Areas of Suitable Foraging Habitat, RPA-ESH Construction): "So now you have switched to 'analysis may be affected.' I have no way to evaluate that statement in relationship to your rankins etc."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337581 **Coder Name:** NLANGDON

Comment Text: References comment line #37 (under Nest Density, predation): "I guess I'm not sure why my name without a year refernce is here. Does this mean the dissertation? Or am I supposed to fill in with literature? I really didn't think that was going to be my role and am not inclined to provide an exhaustive literature search for this."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337582 **Coder Name:** NLANGDON

Comment Text: Data Sources comment line #37 (under Nest Density, predation): "Virginia Tech has a 10-year monitoring data-set of nest, chick, adult survival, movement, etc. I find it interesting that it is never cited as a potential data source."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 46 **Comment Id:** 337583 **Coder Name:** NLANGDON

Comment Text: Key Variables/Metrics comment line #40 (under Predation, Transition from egg to chick): "Number of eggs taken by predators? I don't know why this is TBD"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337584 **Coder Name:** NLANGDON

Comment Text: Importance comment line #40 (under Predation, Transition from egg to chick): "So importance to what? The overall process, demography? That is really not clear. Nest loss has little to do with the overall demography of these populations - see the NUMEROUS PVAs that have been done on the subject. If you mean it's importance in the direct connection, then I would argue that natural nest loss is almost always attributable to predation, regardless of the size of the population"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337586 **Coder Name:** NLANGDON

Comment Text: Importance comment line #41 (under Predation, Transition from chick to fledgling): "See above, just because predation isn't high when density is low, doesn't make predation of low importance to the transition from a chick to a fledgling" (Note: Referring to Importance comment on line #40: "So importance to what? The overall process, demography? That is really not clear. Nest loss has little to do with the overall demography of these populations - see the NUMEROUS PVAs that have been done on the subject. If you mean it's importance in the direct connection, then I would argue that natural nest loss is almost always attributable to predation, regardless of the size of the population")

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337587 **Coder Name:** NLANGDON

Comment Text: Description comment line #42 (under Predation, Adult survival): "TBD? In the description of the mechanism?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337588 **Coder Name:** NLANGDON

Comment Text: References comment line #42 (under Predation, Adult survival): "And NUMEROUS other studies of survival from the Great Lakes, Atlantic coast, etc."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337590 **Coder Name:** NLANGDON

Comment Text: Direction of Change comment line #43 (under Predation, RPA-Vegetation Management): "Do you have any citation for this?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337591 **Coder Name:** NLANGDON

Comment Text: References comment line #44 (under Predation, RPA-Predator Management): "There are numerous studies of the effects of caging on productivity etc. Catlin 2009 cites many of them"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337592 **Coder Name:** NLANGDON

Comment Text: Notes comment line #46 (under Agonistic Behavior, No. chicks): "Does this mean move the entire node within Chick survival? Unclear. If that is the case it's likely ok to do that. Agonistic behavior is probably an unimportant factor regardless of the population size. The number of chicks that were found dead"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337593 **Coder Name:** NLANGDON

Comment Text: References comment line #48 (Under Immigration/Emigration, number of adults): "Several other studies including Cohen et al. 2009 provided information about this."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337594 **Coder Name:** NLANGDON

Comment Text: Notes comment line #48 (Under Immigration/Emigration, number of adults): "Saying that there are too many unbanded birds to determine immigration is categorically false. See Cohen et al. 2009, Wilcox, etc. for studies that managed to determine immigration through mathematical means. Also, VT has repeatedly presented estimates of immigration over the years."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 46 **Comment Id:** 337595 **Coder Name:** NLANGDON

Comment Text: References comment line #49 (under Invertebrate Prey Availability, No. adults): "Are you unsure? From 49 on I get the impression that the team was tired of doing this. I assure you that literature exists for many of these questions. Perhaps I can review the model when this is finished?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337596 **Coder Name:** NLANGDON

Comment Text: Data Sources comment line #49, Excel line #56 (under Invertebrate Prey Availability, No. adults): "What does a '?' mean in data sources?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337597 **Coder Name:** NLANGDON

Comment Text: Notes comment line #51 (under Invertebrate Prey Availability, agonistic behavior): "Since the reviewers were not present in the room while this discussion was happening, these notes are particularly confusing. I'm sure they made sense to you but its not clear to me.

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337599 **Coder Name:** NLANGDON

Comment Text: References comment #52 (under Invertebrate Prey Availability, Nest density): "More of this work comes from the Atlantic coast. I don't think that we have shown higher densities of nesting on the river relative to food resources. However, there is much information from the Atlantic Coast."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337600 **Coder Name:** NLANGDON

Comment Text: References comment line #54 (No. Eggs): "Particularly from here to the end of the document, there is literature about the general association (and sometimes specific) among these factors either from the river or the Atlantic."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 46 **Comment Id:** 337601 **Coder Name:** NLANGDON

Comment Text: Data Sources comment line #57 (under Egg-Chick survival, RPA-Flow Manipulation): "But earlier it was said that this data could lead to 'biases' right? Why not here? Now that there is no monitoring of take in certain regions, is this really an ongoing data source? For that matter, where is the description of what constitutes a 'Data Source' is it past, present, or future?"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337603 **Coder Name:** NLANGDON

Comment Text: Importance comment line #61 (No. Chicks, number of fledglings): "See Catlin et al. presentation from the 2013 BiOp - this can have profound and long-lasting effects on PIPL fitness. Also see Catlin et al. 2013 showing that it can reduce pre-fledge survival"

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337604 **Coder Name:** NLANGDON

Comment Text: Data Sources comment line #63 (under Number of Fledglings, population size): "Why no comments on the quality of this data here? Above there were always 'ifs, ands, and buts' associated with using this data. As I said before, VT has a comprehensive 10-yr data set that has this. We presented all of this information at the last BiOp."

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 46 **Comment Id:** 337606 **Coder Name:** NLANGDON

Comment Text: Catlin, D. H., J. H. Felio, and J. D. Fraser. 2013. Effects of water discharge on fledging times, growth, and survival of piping plovers on the Missouri River. *Journal of Wildlife Management*, 77: 525-533. Hunt, K.L., D.H. Catlin, J.H. Felio, and J.D. Fraser. 2013. Effect of capture frequency on the survival of Piping Plover chicks. *Journal of Field Ornithology*, 84(3): 299-303. Hunt, K.L., N. Taygan, D.H. Catlin, J.H. Felio, and J.D. Fraser. 2013. Demography of Snowy Plovers (*Charadrius nivosus*) on the Missouri River. *Waterbirds* 36(2): 220-224. Catlin, D.H., J.H. Felio, and J.D. Fraser. 2012. Comparison of piping plover foraging habitat on artificial and natural sandbars on the Missouri River. *Prairie Naturalist* 44(1): 3-9. Gratto-Trevor, C., D. Amirault-Langlais, D. Catlin, F. Cuthbert, J. Fraser, S. Maddock, E. Roche, and F. Shaffer. 2012. Connectivity in piping plovers: Do breeding populations have distinct winter distributions? *Journal of Wildlife Management* 76: 348-355. Catlin, D. H., J. D. Fraser, J. H. Felio, and J. B. Cohen. 2011. Piping plover habitat selection, and nest success on natural, managed, and engineered Missouri River sandbars. *Journal of Wildlife Management* 75: 305-310. Catlin, D. H., J. H. Felio, and J. D. Fraser. 2011. Effect of owl trapping and removal on pre-fledge survival in piping plovers. *Journal of Wildlife Management*, 75: 458-462. Catlin, D. H., R. Jacobson, M. Sherfy, M. Anteau, J. Felio, J. Fraser, C. Lott, T. Shaffer, and J. Stucker. 2010. Discussion of "Natural hydrograph of the Missouri River near Sioux City and the least tern and piping plover"



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

by Donald Jorgensen. Journal of Hydrological Engineering 15: 1076-1078. Roche, E. A., J. B. Cohen, D. H. Catlin, D. L. Amirault-Langlais, F. J. Cuthbert, C. L. Gratto-Trevor, J. Felio, and J. D. Fraser. 2010. Range-wide piping plover survival: correlated patterns and temporal declines. Journal of Wildlife Management 74: 1784-1791.

Organization: Virginia Tech

Commenter: Dan Catlin **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337715 **Coder Name:** NLANGDON

Comment Text: The need for USACE involvement/leadership in objective setting The CEMs state up front that the USACE and USFWS are working together to develop a programmatic management plan for endangered species. Then, "species objectives" are "provided" to USACE by USFWS in a top-down manner. Why is this? The USFWS objectives are far too abstract to inform the development of an effects analysis or adaptive management program to address specific Missouri River management issues. The collaborative development of objectives, including input from USACE engineers, water control personnel, and on-the-ground program managers, would help to keep objectives focused on tangible management actions to be evaluated in an effects analysis and then monitored and adjusted via adaptive management.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337716 **Coder Name:** NLANGDON

Comment Text: Management programs are comprised of specific management actions For adaptive management to be effective, the term "management" can't be referred to in the abstract. For example, the current CEMs include a box that represents "dam operations" as a driver of endangered species habitat and population dynamics. The general term "dam operations" encompasses a large number of very different operational modes that occur for specific reasons, in various frequencies, with very different effects on endangered species and their habitats. These specific operational modes must be described explicitly to have any hope at evaluating: a) their effects on endangered species and b) any specific changes that might be made to minimize negative effects or provide benefits to endangered species. Descriptions of management actions should include details about the spatial and temporal extent of their impacts. This can then be followed by a clear presentation of competing hypotheses (preferably supported by data) for how these specific actions might affect endangered species (which will clarify monitoring metrics for evaluation). This allows for discussion of how specific management actions might be altered to minimize negative impacts (or provide benefits) to endangered species (while still achieving their primary objectives, in this case, hydropower generation). This level of detail can then lead to an adaptive management program for evaluating species responses to specific management actions based on the collection of targeted monitoring metrics that can be practically collected at relevant spatial and temporal scales for evaluation.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337717 **Coder Name:** NLANGDON



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Comment Text: Missouri River endangered species management in a range-wide context It is important to recognize, up front, that none of the 3 endangered species treated by these CEMs were placed on the endangered species list at the scale of the Missouri River only. Rather, the Missouri River represents a fraction of the geographic range of all three listed species. In a perfect world, Missouri River management effects on endangered species would be evaluated by range-wide endangered species monitoring programs that could clarify the importance of Missouri River actions to the larger listed populations. Unfortunately, such monitoring programs do not exist for any of the 3 endangered species that occur on the Missouri River. Consequently, it is challenging to evaluate the effects of Missouri-specific management actions relative to objectives that reference the range-wide status of listed populations, such as "jeopardy avoidance" or "species recovery." Are Missouri River actions driving range-wide population dynamics or are they merely a drop in the bucket at the scale of the listed population? In a recently published peer-reviewed article documenting the population ecology and conservation status of Interior Least Terns, we suggested that Interior Least Terns have representative, redundant, and resilient populations within and across each of the major regions of their historic range (Lott et al. 2013). Additionally, we recently served as external peer-reviewers of the USFWS' ongoing 5-year status review for ILT, which came to similar conclusions. As each of the USFWS regions has seen these documents, it's hard to imagine why USFWS would continue to support a jeopardy biological opinion, and the associated large expenditures, for Interior Least Terns on the Missouri River, as both documents suggest that Missouri River-specific actions for Interior Least Terns, positive or negative, would have little effect on the range-wide status of the listed population. If similar detailed evaluations of range-wide population status are available for Piping Plover or Pallid Sturgeon, these should be consulted to provide context about the importance of Missouri River management for these listed species.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337719 **Coder Name:** NLANGDON

Comment Text: Some of the fundamental sub-objectives provided by USFWS (e.g., maintain stable or increasing population trends) are strongly affected by population dynamics that occur outside of the Missouri River basin (which includes the entire non-breeding season for both bird species, and a large fraction of both of their breeding ranges). Consequently, it will be impossible to connect specific Missouri River management actions to progress towards such broad objectives (in both space and time). This sort of low payoff information does not meet the needs of a regional adaptive management program. The final bullet of the "species objectives" documents provided some excellent suggestions (following many less useful suggestions throughout the rest of the document) that I highlight here (emphasis mine): "It is important for future reviewers and contributors to understand the origin of and our needs for these objectives, for example: - The objectives stem from the effect of USACE actions and operations on the species and the legal mandate to avoid jeopardizing continued existence of the species; - The objectives will be used in an Effects Analysis; - Assessments of progress toward achieving objectives will be the basis for making the revisions to the Adaptive Management efforts moving forward; and - For Adaptive Management purposes, objectives must be responsive within a reasonable time frame (i.e., we can't use monitoring results to affect management change if we must wait 30 to 40 year to interpret the results)." Given this guidance, many of the objectives proposed by USFWS in the "species objectives" documents are inappropriate to satisfy these



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

needs.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337721 **Coder Name:** NLANGDON

Comment Text: Problems with fundamental species objectives related to "jeopardy avoidance" or "recovery" In introducing fundamental objectives, the USFWS' "species objectives" documents states: "While this objective is consistent with USFWS established recovery goals for the species, it is prepared specifically as a fundamental objective to avoid and prevent jeopardy to the species from the USACE action of operating and maintaining the Missouri River System." There are several problems with this statement. First, meeting recovery plan targets for a portion of a species range will not necessarily result in jeopardy avoidance. No matter what happens on the Missouri River, population trajectories at the scale of the listed population will be driven by what happens throughout their entire range, across their entire annual cycle (and both bird species spend the majority of their annual cycle outside of the Missouri River basin, or even the United States in the case of Least Terns). A corollary to this notion is that, the USACE could diligently implement all aspects of their Missouri River RPAs, adaptive management, and other still unconsidered measures and listed populations could decline on the Missouri River (or at the scale of their breeding range) due to population regulation during the non-breeding season or outside of the Missouri River basin during the breeding season. These declines could take place despite programmatic conservation action or inaction of the USACE on the Missouri River.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337724 **Coder Name:** NLANGDON

Comment Text: Why (and how) effects analysis and management plan development should be de-coupled from the current jeopardy BiOp and a redundant new EIS The review materials make 6 very useful statements about objective-setting (surrounded by less useful statements-see Appendix A) that should guide future efforts. Objectives should: 1) "Have a direct relationship with the USACE's effect on the (species) from their operations of the Missouri River System". 2) "Be sensitive to actionable threat remediation". Stated more plainly, this means that specific management actions can legally be implemented and their effects on species can be measured. 3) "Reflect the latest knowledge of the species life history needs and their current status relative to the form and function of the contemporary Missouri River System."

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337725 **Coder Name:** NLANGDON

Comment Text: (continued - under Why (and how) effects analysis and management plan development should be de-coupled from the current jeopardy BiOp and a redundant new EIS)...Objectives should... 4) "Adaptive management will require the opportunity to observe



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

responses to management actions in a shorter time frame and an ability to link the response to an action". This is a critical design recommendation for both conceptual and numeric models. Management actions must be explicitly defined and adaptive management must be informed by the evaluation of monitoring metrics that directly indicate a species response to explicitly-defined management actions at time-scales that are relevant for adjusting future management actions. 5) "For adaptive management purposes, objectives must be responsive within a reasonable time frame". This argues pretty strongly against objectives based on population trend analyses, which require lengthy time series of counts and cannot be linked to responses to specific management actions as trends are affected by so many factors across a species' entire life-cycle. 6) Understand "critical relationships between USACE operations, external drivers, habitat changes on the Missouri River, and species condition".

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Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337726 **Coder Name:** NLANGDON

Comment Text: In light of these suggestions, the draft CEMs do not make direct enough links between specific USACE management actions on the Missouri River and specific species responses (that can be quantified directly via monitoring metrics sensitive to the specific action). For the development of a management-based monitoring program and adaptive management plan, species objectives should be scaled in space and time to the Missouri River and the breeding season.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337730 **Coder Name:** NLANGDON

Comment Text: Major revisions to key model components in the draft CEMs Before reviewers put much effort into generating information about relationships between boxes in the proposed CEMs (e.g., filling in the "narrative spreadsheets" that were sent for review, I think there should be some major revisions to the content and order of the model's major compartments (the boxes themselves). As currently depicted, the major model components are not sufficiently detailed for the CEM to be appropriate for analyzing the effects of USACE actions on endangered species. As a result, achieving the stated goal of developing an adaptive management plan tied to actual management strategies, habitat, and species responses cannot be realized using the existing model components. Any conceptual model is a balance between simplicity and complexity, but when translating the conceptual model into a numeric model, additional complexity is often required. Being more explicit about relationships will add complexity to the CEM (the model may no longer fit on one page), but it will force managers, regulators, stakeholders, and modelers to more clearly articulate system relationships. Once a more appropriately detailed conceptual model is established, a quantitative effects analysis could be developed that would allow model users to ask and answer specific questions about the effects of specific USACE operations on endangered species and their habitats. As CEMs are revised, I suggest a 1:1 relationship between each "relationship" line in the graphical models and spreadsheets records that solicit reviewer comments about specific relationships. Review would be facilitated if each line in the graphic models was numbered and referenced a specific value in a "relationship number" field in spreadsheets.



Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337731 **Coder Name:** NLANGDON

Comment Text: Management actions must be defined explicitly to understand effects of management on species. Greater specificity is needed to link specific management actions to specific effects on endangered species. For example, the model component "dam operations" does not sufficiently represent the variety of operational scenarios that occur regularly and are codified in rule curves that balance multiple use objectives. Additionally, not all dams are operated the same way, which results in a different range of operational modes for different dams and two dams may have different operational strategies under similar circumstances. Vague categories of effects like "dam operations" should be broken down into discrete operational modes for effects assessment (e.g., daily hydropower releases, flood control releases, flood control retention within the pools, navigation maintenance releases, etc.). Each of these modes of operation have different effects on pool elevations, discharge rates from different dams, sediment transport, and consequently, on physical habitat conditions, ecological responses, or species performance variables. I would suggest that each person working on this conceptual model take an afternoon to read USACE (2007), a short and clearly articulated document written by USACE water control personnel that describes each of the major components of dam operations in detail. This document distills much of the information in the Master Water Control Manual EIS, which most regulators should at least be familiar with (USACE 2004). The specific operational modes and water control actions that are articulated in this document should replace the oversimplified category of "dam operations." The CEM must have this level of detail for the analysis to be specific enough to suggest specific changes in dam operations that might be made to benefit species and then to evaluate the expected consequences of these changes in a modeling environment. I'm not sure if similar summary documents to USACE (2007) are available to describe in-channel engineering actions, but these actions have been described in detail in the EIS for the bank stabilization project (USACE 2005) and the PEIS for the ESH creation program (USACE 2011). In order to utilize the best available information, modelers and species biologists should become more familiar with these documents and the important details therein.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337732 **Coder Name:** NLANGDON

Comment Text: Drivers and controlling factors need clarification and context. Figure 1 (below) is an alternative conceptual model, based on the ones that were sent for review, that describes in more detail how multiple drivers combine with multiple controlling factors or "constraints" to influence reservoir operations. It then illustrates how reservoir operations combine with uncontrolled runoff to produce a number of flow variables (e.g., master variables) that may be useful as inputs to effects assessment models. Importantly, this model treats dam operations as a "controlling factor" and not a "driver", since a number of different drivers can affect dam operations (see Fig. 1) and far more than just dam operations affect flows. For example, the driving variable of "weather" (e.g., rain, snow, and temperature) affects hydrologic processes like runoff and ground water flow that mediate water inputs into river systems. Some, but not all,



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

runoff goes into storage in reservoirs. Additional runoff occurs as uncontrolled hill-slope or tributary runoff that feeds into river reaches below dams. In other words, the driving variable of weather and the controlling hydrologic processes of runoff and groundwater flow set the stage for which dam releases will occur. Dam releases are explicitly and legally governed by rule curves that are formalized in the Master Water Control Manual and codified in the Record of Decision on the Master Manual EIS. Rule curves balance multiple congressionally authorized purposes, given a large number of stakeholder inputs, only some of which relate to endangered species. Current rule curves reflect court rulings and NEPA documents that set constraints on how much "flexibility" there can be for wildlife-specific flow management and/or other stakeholder needs. Rule curves are designed to handle a wide range of weather scenarios at various temporal scales, GIVEN a starting point of reservoir storage. While each reservoir has optimal seasonal pool level levels for multiple use; real pool levels may be low during drought periods or high during wet periods, which affects the starting point (reservoir pool level), which makes some rule curve adjustments impossible. In other words, initial storage, which is the function of weather and reservoir management, is always a hard constraint on the types of dam releases that can occur in any given year.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337733 **Coder Name:** NLANGDON

Comment Text: The conceptual model in Figure 1 recognizes that the primary driving variable of weather, combined with a number of large economic drivers (e.g., energy demand, flood protection, floodplain development, navigation demand) affect both initial reservoir levels and dam releases. It also recognizes that river flows are the consequence of both dam releases and uncontrolled runoff. By making the conceptual model explicit about the major drivers that affect and constrain dam operations, and by identifying specific dam operations to investigate for their effects on endangered species, any potential management solutions will be forced to occur within a framework that is both realistic and possible given current Congressionally-directed project purposes, Records of Decisions (and court cases) related to the Master Manual EIS, BSNP Construction and Operation, BSNP Mitigation EIS (shallow water habitat and cottonwood management), and the Programmatic EIS for the Emergent Sandbar Habitat Creation Program. Similarly, more than one driver and/or controlling factor culminates in master variables related to sediment transport. Geomorphologists could probably create a conceptual model for this topic with similar detail to Figure 1. Clearly, master ecological variables (e.g., grain size distributions, sediment transport rates) have their own sets of "controlling factors" related to sediment entrapment behind dams, current channel form, engineering structures, and so on. The point of branching out this far on the left side of the conceptual model is to illustrate that master variables like flow and sediment are not simply the result of USACE "operations", but rather, the culmination of a number of ecological processes, all affected by both ecological and societal drivers. To ignore that Missouri River operations exist within this context fails to put the effects of dam operations in proper context and fails to include the factors that truly constrain ecosystem or species recovery. Without recognition of these constraints, management planning for endangered species, including conceptual and numerical models, is of little value to the decision makers.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 49 **Comment Id:** 337734 **Coder Name:** NLANGDON

Comment Text: Current CEMs do not include the appropriate physical habitat response variables Lott et al. (2013) discussed the difference between suitable nesting habitat and the poorly defined concept of Emergent Sandbar Habitat (ESH), which provides an inadequate surrogate for the biologically-relevant metric of suitable nesting habitat. The meaning of the vague term "ESH" hasn't been defined, or measured, with enough resolution to provide insight on effects of USACE operations on tern and plover nesting habitat (particularly temporal resolution across a range of flows in a breeding season). More importantly, a strong relationship between the amount of "ESH" that has been present at various times on the Missouri River and ILT or PIPL reproductive performance has never been convincingly demonstrated. What has been shown is that when a large proportion of the regional nesting population becomes concentrated into a small number of sites, site-specific predator mortality can have severe effects on a large fraction of the regional population. This strong interaction between habitat availability, predators, and bird reproductive performance is not directly related to acreage, only the number and geographic distribution of potential nesting sites with particular river segment. I would suggest that the number of sites with suitable nesting habitat (however poorly defined and inconsistently measured) that are available, given typical reservoir operations, might be a more informative metric to evaluate habitat/bird population interactions than acreage. Both the PEIS on ESH creation (USACE 2011) and Lott and Wiley (2012), which examined the effects of Keystone dam operations on the Arkansas River, illustrated that ILT reproductive performance can remain high as acreage of ESH declines, as long as some quantity of high-quality, high-elevation nesting habitat are geographically distributed across the landscape, allowing birds to spread out among a large number of sites with low flooding and predation risk.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337735 **Coder Name:** NLANGDON

Comment Text: Clearly, in terms of understanding the effect of dam operations, particularly releases that result in high flows, the elevation of nesting habitat where ILT and PIPL occur is far more important than the acreage of ESH counted based on 2-D photo imagery analysis (which tends to encompass a wide range of elevations, many of which are too low to be selected for nesting by either bird species). The fact that these conceptual models continue to list acres of ESH as the primary target for understanding habitat-related effects on bird reproductive performance, or to demonstrate the effects of dam operations on habitat availability illustrates a failure of adaptive management, where the goal is to learn and then adjust conceptual models based on what has been learned. We hope that the CEM development process will take the time to challenge the doggedly persistent notion that acreage of ESH is driving ILT or PIPL reproductive performance. Refining the vague 2-D concept of "ESH" to a definition of sandbar nesting habitat that explicitly consider elevation, proximity to gallery forest, and geographic distribution within a landscape allows for richly-informative analyses (USACE 2011, Lott et al. 2013).

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 49 **Comment Id:** 337736 **Coder Name:** NLANGDON

Comment Text: I remain perplexed by the lack of demonstrable knowledge of the contents of the Corps' PEIS on Emergent Sandbar Habitat Creation reflected in the draft CEM. Although I have never seen the PEIS on a "suggested reading list" to inform decision-making on the Missouri River, two appendices to the PEIS for Emergent Sandbar Habitat Creation (USACE 2011, Appendices B and C) provide the most detailed evaluation of interactions between ILT and PIPL and aspects of nesting habitat, and the most cogent analysis of the relevance of USACE bird monitoring data that has been published to date. The fact that this information has not been acknowledged, described, or apparently considered within the ILT/PIPL management community on the Upper Missouri River appears at times like a concerted effort to avoid its content. These analyses remain an important example of how adaptive management should function and the process of learning from data. For example, despite a Record of Decision document in the federal register (based on the analyses in this PEIS) that suggested creating or maintaining a much lesser amount of ESH that was required in USFWS (2003), we continue to see massive acreage goals in planning documents. The NEPA process illustrated very clearly that these massive acreages are not necessary to sustain ILT and PIPL population on the Missouri River. More importantly, the mechanical creation of massive acreages of ESH, as recommended by USFWS (2003), was shown to very strongly negatively affect both the natural and human environment on the Missouri River (USACE 2011). The findings of this document should be clearly reflected in revised CEMs.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337738 **Coder Name:** NLANGDON

Comment Text: Figure 1. Conceptual model for drivers and controlling processes culminating in river flows. Reservoir operations are only part of this picture and have socio-economic drivers of their own. (Entry note: Graphic did not copy into PEPC. Refer to attached document for Figure 1.)

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337739 **Coder Name:** NLANGDON

Comment Text: One final comment on physical habitat variables: I would be very reluctant to include acres of suitable foraging habitat as a primary habitat variable in the CEU until: 1) a clear definition can be provided of what suitable foraging habitat actually is; 2) a clear set of methods are proposed for how it might be measured across the range of flows that occur on the Missouri River; and 3) compelling evidence can be presented that food availability may be limiting tern or plover populations.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 49 **Comment Id:** 337740 **Coder Name:** NLANGDON

Comment Text: Getting CEMs and Effects Analyses back on track Clearly, a number of changes are necessary to develop CEMs that will be useful to inform quantitative effects analyses to better understand effects of USACE operations on endangered species and to explore alternative management strategies to improve endangered species baselines. Until CEMs and effects analyses are de-coupled from the BiOp/NEPA process, it will be very difficult to realistically explore these issues across the full range of alternatives that might be considered given the full range of USACE authorities for river management (as opposed to the narrowly constrained management alternatives that were developed in the most recent BiOp). I would be very interested in reviewing revised CEMs if they move this direction. I think there is much more to be achieved via Section 7(a)(1) than Section 7(a)(2) on the Missouri River.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337742 **Coder Name:** NLANGDON

Comment Text: Finally, I suggest that some of the most common truisms on the Missouri River (e.g., that the abundance of emergent sandbar habitat may limit tern and plover population growth, the abundance of shallow-water habitat may limit Pallid Sturgeon population growth) should be treated as HYPOTHESES in models, that should be carefully evaluated relative to data. By never subjecting these core assumptions to scrutiny via analysis, and by poorly developing a range of alternative hypotheses that could be tested with data, the scope of monitoring and research on the Missouri River has been limited a priori to hypotheses that have generated limited support across the past decade. I suggest that the top-down nature of objective setting from USFWS (as evidenced by the objectives document circulated along with CEMs for review) should be replaced by the collaborative process of developing and testing alternative hypotheses via CEMs and quantitative effects analyses that focus on metrics that can truly document effects of USACE actions (as opposed to metrics like total population size or lambda, which are affected by all kinds of occurrences outside of the USACE project area).

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Correspondence Id: 49 **Comment Id:** 337745 **Coder Name:** NLANGDON

Comment Text: Appendix A: Bad ideas in the draft "species objectives" documents The draft species objectives documents contain a number of highly counter-productive recommendations for objective-setting that I recommend ignoring completely, including: 1) "Be consistent with Endangered Species Act required Recovery Plan recovery goals and strategies." Following the prescriptions of these prior documents, which have debatable scientific foundations, is by no means a necessary condition to avoid jeopardizing the continued existence of any of the three species.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

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Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 49 **Comment Id:** 337746 **Coder Name:** NLANGDON

Comment Text: Appendix A (continued) 2) "Maintain a long-term trend in population growth that is at least stable." There are several problems with this objective. The most basic problem is that population trends only document (often poorly) what has happened in the past. In systems that respond strongly to environmental change, past trends do not necessarily predict future population trajectories when conditions during the trend monitoring period do not exactly match future conditions. When count data are variable (as is the case for all listed species on the Missouri), trend estimates are typically imprecise at temporal scales shorter than a decade. Consequently, mean trend estimates have little meaning when confidence intervals are large and overlap zero change. This result is extremely common for species with counts as variable as the three listed species on the Missouri. Also- technically, there is no such thing as a "stable" population trend once count data have been subjected to analysis. There are only significantly positive trends, significantly negative trends, and trends that are not statistically different from zero (again, a very common result). For this latter class, "stability" may only be inferred when trend estimates have very narrow confidence intervals. When confidence intervals are large, power analyses usually indicate the low power of monitoring data to estimate true trends. Finally, regional population trends can be affected by seasonal fluctuations in habitat (i.e., during pluvial or drought periods), immigration and emigration, as well as survival and mortality during the non-breeding period (which takes both bird species outside of the Missouri River for a majority of their life cycle). Consequently, "population trend" is a not a metric that will provide useful short -term, or even long-term, feedback on Missouri River-specific management.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337747 **Coder Name:** NLANGDON

Comment Text: Appendix A (continued) 3) "Maintain a geographic distribution of terns in the river and reservoirs in which they currently occur". This objective ignores one of the most fundamental life history traits of both bird species, which allows them to disperse, both within and between breeding seasons, to take advantage of changing habitat conditions. As with most early-successional species that are disturbance-dependent, one should not expect stable geographic distributions. Rather, these should shift in response to shifting habitat availability, which has clearly occurred across the entire monitoring period on the Missouri River. Qualitatively, perhaps a more appropriate distribution-related metric, at the scale of the entire Missouri River system, would be to maintain a diversity of suitable breeding locations within the program area that are accessible to terns and plovers, given pool levels and river releases, in a large proportion of years. Actual quantitative objectives of this nature could be perhaps set for the number of sites and frequency of their availability via modeling.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 337748 **Coder Name:** NLANGDON

Comment Text: Appendix A (continued) 4) "Sub-objectives in sum ultimately allow us to achieve the fundamental objective in the long-term." This is true in spirit, but not in letter. For example, there are many different sub-objectives that could be proposed as hypothetical paths towards avoiding jeopardy in the long-term. Regardless of the performance of any of these sub-



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

objectives on the Missouri River, targets like "jeopardy avoidance" or "recovery" are only partially controllable. Speaking hypothetically, what if the most important demographic parameter limiting Interior Least Tern populations is over-winter survival and the most common cause of mortality is due to shooting in wintering areas? No set of breeding season objectives will sum to recovery in this case. The immediate threats to the continuation of the species would be, in fact, outside of the influence of the operation of the Missouri River and outside the ability of the USACE to address. If this mortality cause were known (which it will not be, given the absence of monitoring outside the breeding season) one might argue that Missouri River management does not jeopardize the existence of this species, shooting during winter does. Again, this example points to the difficulty of evaluating local/regional management actions that occur during a restricted time of year in relation to limiting factors that may occur any time and any place across a migrant's annual cycle. Jeopardy avoidance links local causes of imperilment to local measures that could be implemented to affect the cause of jeopardy; goal setting and evaluation of such grand-scale recovery goals for a wide ranging species like the ILT is not appropriate.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 338986 **Coder Name:** NLANGDON

Comment Text: Model Component Comment, Line 6: "Suggesting changing 'Drought/Flood Extreme Events' to 'Climate/Geology/Land Use'"

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 338987 **Coder Name:** NLANGDON

Comment Text: Model Component (Line N1): "Socio-, politico-, economic-, and legal factors"

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 338988 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N1): "Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on mainstem dam operations."

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 338989 **Coder Name:** NLANGDON

Comment Text: Model Component (Line N2): ">mainstem dam operations"

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**



Kept Private: No

Correspondence Id: 62 **Comment Id:** 338990 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N3): General: "Least Tern Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System."

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 338991 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N4): "General: "Least Tern Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to."

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 338992 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N1): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System."

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 338998 **Coder Name:** NLANGDON

Comment Text: Model Component, Mainstem Dam Operation and Placement (Line 3): "Mainstem Dam Operation and Placement" is identified as a "Driver." Please provide further information on why the "placement" of mainstem dams is considered a driving factor. Suggest deletion of "placement" from the driver heading description.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 338999 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N1): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System."

Organization: Bureau of Reclamation Great Plains Regional Office



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Commenter: Christina Lasater **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 62 **Comment Id:** 339000 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N2): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 62 **Comment Id:** 339001 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N2): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 62 **Comment Id:** 339002 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N3): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 2. Sub-objective 1: Close coordination between the Missouri River system and the Mississippi system is explicitly mentioned, but tributaries will not be evaluated. An explanation of the Corp's decision to exclude the Yellowstone River system (specifically, ongoing activities at the Intake Diversion Dam) would be helpful in understanding the rationale to limit the scope of the plan/analysis.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 62 **Comment Id:** 339003 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N4): General: Reasonable and Prudent Alternatives are noticeably absent from the Ecological Effects Model. To be consistent with the models for least tern and piping plover, the Reasonable and Prudent Alternatives should be incorporated into the pallid sturgeon model.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**
Kept Private: No

Correspondence Id: 62 **Comment Id:** 339004 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N5): General: Column headings are quite vague. A description of each column heading would reduce ambiguity. For instance, the headings "Direction of Change," "Importance," and "Predictability" could be interpreted in multiple ways,



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

each of which would change the function of the column.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 339018 **Coder Name:** NLANGDON

Comment Text: Model Components, Drought/Flood Extreme Events (Line 6): Suggesting changing "Drought/Flood Extreme Events" to "Climate/Geology/Land Use." Model Component (Line N1): "Socio-, politico-, economic-, and legal factors" Model Component (Line N2): ">mainstem dam operations"

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 339019 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N1): "Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on mainstem dam operations."

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339318 **Coder Name:** NLANGDON

Comment Text: 1. Pallid Sturgeon Objectives (Upper and Lower Basin) for the Missouri River Recovery Program - Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System." - Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to. - Page 2. Sub-objective 1: Close coordination between the Missouri River system and the Mississippi system is explicitly mentioned, but tributaries will not be evaluated. An explanation of the Corp's decision to exclude the Yellowstone River system (specifically, ongoing activities at the Intake Diversion Dam) would be helpful in understanding the rationale to limit the scope of the plan/analysis.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339320 **Coder Name:** NLANGDON

Comment Text: - Upper and Lower Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects Models- all life stages: Reasonable and Prudent Alternatives are noticeably absent from the Ecological Effects Model. To be consistent with the models for least tern and piping plover, the Reasonable and Prudent Alternatives should be incorporated into the pallid sturgeon model.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**



Kept Private: No

Correspondence Id: 63 **Comment Id:** 339321 **Coder Name:** NLANGDON

Comment Text: - Upper Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects Models- all life stages: "Mainstem Dam Operation and Placement" is identified as a "Driver." Please provide further information on why the "placement" of mainstem dams is considered a driving factor. Suggest deletion of "placement" from the driver heading description.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339322 **Coder Name:** NLANGDON

Comment Text: - Lower Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects Models- all life stages: "Mainstem Dam Operation and Location" is identified as a "Driver." Please provide further information on why the "location" of mainstem dams is considered a driving factor. Suggest deletion of "location" from the driver heading description.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339323 **Coder Name:** NLANGDON

Comment Text: - Ecological Effects Model Narrative Matrix- all life stages: Column headings are quite vague. A description of each column heading would reduce ambiguity. For instance, the headings "Direction of Change," "Importance," and "Predictability" could be interpreted in multiple ways, each of which would change the function of the column.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339324 **Coder Name:** NLANGDON

Comment Text: 2. Piping Plover Objectives for the Missouri River Recovery Program - Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System." - Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339325 **Coder Name:** NLANGDON

Comment Text: - Ecological Effects Model: Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on "Mainstem Dam Operations." - Ecological Effects Mode: Suggest changing "Drought/Flood Extreme Events" to "Climate/Geology/Land Use."



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339326 **Coder Name:** NLANGDON

Comment Text: 3. Least Tern Objectives for the Missouri River Recovery Program - Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System." - Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 63 **Comment Id:** 339327 **Coder Name:** NLANGDON

Comment Text: - Ecological Effects Model: Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on mainstem dam operations. - Ecological Effects Mode: Suggest changing "Drought/Flood Extreme Events" to "Climate/Geology/Land Use."

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341622 **Coder Name:** NLANGDON

Comment Text: 1. Pallid Sturgeon Objectives (Upper and Lower Basin) for the Missouri River Recovery Program - Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System." - Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to. - Page 2. Sub-objective 1: Close coordination between the Missouri River system and the Mississippi system is explicitly mentioned, but tributaries will not be evaluated. An explanation of the Corp's decision to exclude the Yellowstone River system (specifically, ongoing activities at the Intake Diversion Dam) would be helpful in understanding the rationale to limit the scope of the plan/analysis.

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341623 **Coder Name:** NLANGDON

Comment Text: - Upper and Lower Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects Models - all life stages: Reasonable and Prudent Alternatives are noticeably absent from the Ecological Effects Model. To be consistent with the models for least tern and piping plover, the Reasonable and Prudent Alternatives should be incorporated into the pallid sturgeon model.

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341624 **Coder Name:** NLANGDON

Comment Text: - Ecological Effects Model Narrative Matrix- all life stages: Column headings are quite vague. A description of each column heading would reduce ambiguity. For instance, the headings "Direction of Change," "Importance," and "Predictability" could be interpreted in multiple ways, each of which would change the function of the column.

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341625 **Coder Name:** NLANGDON

Comment Text: 2. Piping Plover Objectives for the Missouri River Recovery Program - Page 1. Paragraph.3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System." - Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341626 **Coder Name:** NLANGDON

Comment Text: - Ecological Effects Model: Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on mainstem dam operations. - Ecological Effects Model: Suggest changing "Drought/Flood Extreme Events" to "Climate/Geology/Land Use."

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341627 **Coder Name:** NLANGDON

Comment Text: 3. Least Tern Objectives for the Missouri River Recovery Program - Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System." - Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341628 **Coder Name:** NLANGDON

Comment Text: - Ecological Effects Model: Suggest adding "socio-, politico-, economic-, and legal factors" as a driving factor which has influence on mainstem dam operations. - Ecological Effects Model: Suggest changing "Drought/Flood Extreme Events" to "Climate/Geology/Land Use."



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341629 **Coder Name:** NLANGDON

Comment Text: - Upper Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects Models- all life stages: "Mainstem Dam Operation and Placement" is identified as a "Driver." Please provide further information on why the "placement" of mainstem dams is considered a driving factor. Suggest deletion of "placement" from the driver heading description.

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 71 **Comment Id:** 341630 **Coder Name:** NLANGDON

Comment Text: - Lower Basin Pallid Sturgeon Conceptual Ecological Models/Ecological Effects Models- all life stages: "Mainstem Dam Operation and Location" is identified as a "Driver." Please provide further information on why the "location" of mainstem dams is considered a driving factor. Suggest deletion of "location" from the driver heading description.

Organization: U.S. DOI, Bureau of Reclamation, Great Plains Regional Office

Commenter: Michael J Ryan **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 343121 **Coder Name:** NLANGDON

Comment Text: A well informed conceptual model and effects analysis that explicitly defines management actions and the relationship of these actions to endangered species will provide much more useful direction for objective setting.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 343122 **Coder Name:** NLANGDON

Comment Text: Note: This means that those involved with CEM development, effects analysis, and management plan development should read, understand, and assimilate the comprehensive analysis of the Omaha District's bird and habitat monitoring data from 1998 to 2006 in Appendix B of the Programmatic EIS for Emergent Sandbar Habitat Creation (USACE 2011). The insights to be gained from engaging with this document have been inexplicably absent in USFWS or USACE documents related to the effects analysis. To avoid this material is to avoid an extremely important piece of the best available scientific information at the District's disposal to inform adaptive management.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Correspondence Id: 49 **Comment Id:** 343123 **Coder Name:** NLANGDON

Comment Text: Note: a large number of metrics can be used to evaluate "species condition" that can be more directly linked to specific USACE operations than integrative demographic parameters like "fledge ratios" no matter how well or poorly they are measured.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 49 **Comment Id:** 343162 **Coder Name:** NLANGDON

Comment Text: From the set of recommendations above it seems critical to: 1) Define the spatial and temporal extent of the full range of USACE management actions (whether these are carried out by the District, subcontracted, or simply permitted) that will be evaluated for their effects on endangered species. 2) Define evaluation metrics for the collection of monitoring data relative to these actions that can provide feedback for planning of future management actions.

Organization: American Bird Conservancy

Commenter: Casey Lott **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 343180 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N3): General: "Piping Plover Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 2: Request clarification on this objective, specifically, what is meant by the statement, "relative to the form and function of the contemporary Missouri River System." Commenter's Notes (Line N4): General: "Piping Plover Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 343195 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N2): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 1. Paragraph 3. Bullet 4: Request clarification on what this objective refers to.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 343196 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N3): General: "Pallid Sturgeon Objective for the Missouri River Recovery Program." Page 2. Sub-objective 1: Close coordination between the Missouri River system and the Mississippi system is explicitly mentioned, but tributaries will not be evaluated. An explanation of the Corp's decision to exclude the Yellowstone River system (specifically, ongoing activities at the Intake Diversion Dam) would be helpful in understanding the rationale to limit the scope of the plan/analysis.



Missouri River Recovery Management Plan

Scoping Summary Report | May 7, 2014

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 343197 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N4): General: Reasonable and Prudent Alternatives are noticeably absent from the Ecological Effects Model. To be consistent with the models for least tern and piping plover, the Reasonable and Prudent Alternatives should be incorporated into the pallid sturgeon model.

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 62 **Comment Id:** 343198 **Coder Name:** NLANGDON

Comment Text: Commenter's Notes (Line N5): General: Column headings are quite vague. A description of each column heading would reduce ambiguity. For instance, the headings "Direction of Change," "Importance," and "Predictability" could be interpreted in multiple

Organization: Bureau of Reclamation Great Plains Regional Office

Commenter: Christina Lasater **Page:** **Paragraph:**

Kept Private: No

Correspondence Id: 72 **Comment Id:** 343590 **Coder Name:** NLANGDON

Comment Text: 3. The Draft Pallid Sturgeon Objectives appears to place an emphasis on ensuring that the Corps avoids jeopardy under current operations of its Mainstem dams. It is not clear why recovery of the species is not the Fundamental Objective with Sub-Objectives ensuring that management actions (adaptive) are taken to ensure natural reproduction and recruitment. The FWS should provide a rationale for its choice of wording, and also describe the ramifications of managing the reservoir system under a "avoiding jeopardy" approach versus a "recovery of the species" approach.

Organization: Montana Fish, Wildlife and Parks

Commenter: Bruce Rich **Page:** **Paragraph:**

Kept Private: No