



## PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM (PRRIP -or- Program)

### 2022 PRRIP Virtual Science Plan Reporting Session – Independent Scientific Advisory Committee (ISAC)

#### Discussion Questions

### Virtual Session #3 – Science Plan

#### ISAC Discussion Questions:

1) Are the re-evaluation triggers for the First Increment Big Questions (BQ) presented in Attachment #1 appropriate? Specifically:

- **BQ #6:** Does availability of suitable nesting habitat limit tern and plover use and reproductive success on the central Platte River? (Note: We do not anticipate a reduction in available off-channel sand and water habitat.)

**TRIGGER:** Drop in piping plover breeding pairs per acre of suitable OCSW habitat below 1 breeding pair per 5 acres for 3 years in a row.

- **BQ #10:** Do Program management actions in the central Platte River cumulatively 1) produce detectable changes in the physical environment (i.e., habitat) and 2) result in a detectable increase in tern, plover, and whooping crane use of the Associated Habitats?

**TRIGGER:** Relative to 2007-2021, the distribution of proportional WC use of the AHR changes such that use of Program properties is less than predicted by its availability.

2) Does the structure of Attachment #4 fit well with the Implementation Activities & Timeline document, facilitating communication of what will be done, when, and how we plan to address Extension Big Questions?

### Virtual Session #4 – Target Species: Piping Plover (PP)

For reference:

#### **Extension Big Question (EBQ) #8 – How much of an effect does predation have on PP productivity?**

- *Learning Objective<sub>1</sub>:* Quantify the impact of predation on PP productivity.
- *Learning Objective<sub>2</sub>:* Identify predator species responsible for losses.
- *Learning Objective<sub>3</sub>:* Determine when losses are incurred, at the nest or during brood rearing.
- *Learning Objective<sub>4</sub>:* Utilize population viability models to predict what effect decreases in fledge ratios due to predation may mean in terms of future PP breeding pairs on the central Platte River.

#### **EBQ #9 – How effective is Program management at mitigating losses of PP productivity due to predation?**

- *Learning Objective<sub>1</sub>:* Evaluate effectiveness of trapping, fencing, and/or predator deterrent lighting at reducing nest/brood failure due to predation.
- *Learning Objective<sub>2</sub>:* Develop predator management alternatives based upon learning through remote camera/video monitoring.
- *Learning Objective<sub>3</sub>:* Evaluate the necessity for additional predator management based upon PP response to predation over time.

**ISAC Discussion Questions:**

- 3) Because losses in 2021 were primarily due to avian predators, what other information could we gather that may help decision-making on how to deal with avian predators?
- 4) Any suggestions for improving implementation of predator management and monitoring of predator and target species response?
- 5) How do we better evaluate effectiveness of our predator management actions? How to best present information for decision-making?

**Virtual Session #5 – Target Species: Whooping Crane (WC)**

For reference:

**EBQ #4 – Does flow influence WC decision to stop or fly over the AHR?**

- *Management Hypothesis:* Probability of WC stopping within the AHR is related to flow.

**EBQ #5 – Does flow influence WC stopover length within the AHR?**

- *Management Hypothesis:* Length of WC stopover within the AHR is a function of discharge.

**EBQ #6 – Why is Spring WC use of the AHR greater than Fall use?**

- *Management Hypothesis:* WC use of the AHR in the Spring is greater than during the Fall due to higher flows during this period.

**ISAC Discussion Questions:**

- 6) What would you like to see in terms of data on atmospheric conditions to help explain how weather affects choices for stopover and stay length? Atmospheric conditions at what locations are most important?

**Virtual Session #6 – Target Species: Pallid Sturgeon (PS)**

For reference:

**EBQ #7 – What effect do Program flow management actions to benefit WC, PP, and LT in the central Platte River have on pallid sturgeon use of the lower Platte River?**

- Pallid sturgeon genetics research:
  - *Learning Objective<sub>1</sub>:* Establish new genetic baselines for species identification and addressing hybridization.
  - *Learning Objective<sub>2</sub>:* Identify spawning pallid sturgeon adults and age-0 pallid sturgeon collected on the lower Platte River and its confluence with the Missouri River to confirm successful spawning and recruitment.
  - *Learning Objective<sub>3</sub>:* Reassess pallid sturgeon population dynamics and estimate effective population size.
- Pallid sturgeon habitat and spawning research:
  - *Learning Objective<sub>1</sub>:* Assess pallid sturgeon use of the lower Platte River and its tributaries.
  - *Learning Objective<sub>2</sub>:* Relate pallid sturgeon seasonal movements and spawning behavior to environmental patterns on the lower Platte River and its tributaries.



- *Learning Objective<sub>3</sub>*: Identify and describe pallid sturgeon spawning habitat on the lower Platte River and its tributaries.
- *Learning Objective<sub>4</sub>*: Verify successful pallid sturgeon spawning in the lower Platte River and its tributaries and recruitment from the lower Platte River to the Missouri River.

**NOTE:** Updates will be provided from each research group but no ISAC Discussion Questions are posed.

## Virtual Session #9 – Geomorphology & In-Channel Vegetation Monitoring

For reference:

### **EBQ #1 – How effective is it to use Program water to maintain suitable whooping crane roosting habitat?**

- *Management hypothesis*: During drought periods, 30-day minimum germination suppression releases (1,500 cfs target between June 1-July 15) will slow vegetation expansion into the channel and increase the percent of AHR channel that remains highly suitable for whooping crane roosting.

### **EBQ #2 – How effective is Program management of Phragmites for maintaining suitable whooping crane roosting habitat?**

- *Management hypothesis*: During drought periods, 30-day minimum channel inundating flow releases (1,500 cfs target between June 1-July 15) in combination with continued herbicide spraying will slow *Phragmites* rhizome/stolon expansion into the channel and increase the percent of AHR channel that remains highly suitable for whooping crane roosting.

### **EBQ #3 – Is sediment augmentation necessary to create and/or maintain suitable whooping crane habitat?**

- *Management hypothesis*: Sediment augmentation is necessary to halt narrowing and incision in the south channel downstream of the J2 Return.

### **ISAC Discussion Questions:**

- 7) We have so far not estimated the error of area-based measurements, or classified area-derived metrics like MUCW and TUCW. What is the best way to estimate error for those measurements—taking into account both LiDAR accuracy and field vegetation data?
- 8) The volume change error estimation process involves a probabilistic threshold based on LiDAR ground check accuracy assessments, which vary from year to year. This means that each year, a variable elevation difference magnitude is required to pass the threshold, resulting in varying total areas of significant elevation change. Does this complicate effective interannual comparisons of net volume change, and is there a way to account for that?
- 9) Are any types of data or analyses that are needed to comprehensively capture changing channel conditions and habitat for target species missing from this report?
- 10) Are there any types of data or analyses in this report that are extraneous to comprehensively capture changing channel conditions and habitat for target species, and should be omitted in future years?



## Virtual Session #10 – Wet Meadow Hydrology

For reference:

### EBQ #10 – Wet meadows research

- *Learning Objective<sub>1</sub>*: Understand relationships between hydrological and meteorological variables and groundwater levels at natural wet meadow sites.
- *Learning Objective<sub>2</sub>*: Understand what constitutes a functional hydrological regime for wet meadows along the central Platte River valley which can be used as a reference and applied to manage other sites.
- *Learning Objective<sub>3</sub>*: Develop a modeling tool that can be used by land managers in the central Platte River valley to inform management decisions.

**NOTE:** There will be a briefing document with this item but no ISAC Discussion Questions are posed.

## Virtual Session #11 – Channel Width Modeling

For reference:

### EBQ #1 – How effective is it to use Program water to maintain suitable whooping crane roosting habitat?

- *Management hypothesis*: During drought periods, 30-day minimum germination suppression releases (1,500 cfs target between June 1-July 15) will slow vegetation expansion into the channel and increase the percent of AHR channel that remains highly suitable for whooping crane roosting.

### EBQ #2 – How effective is Program management of Phragmites for maintaining suitable whooping crane roosting habitat?

- *Management hypothesis*: During drought periods, 30-day minimum channel inundating flow releases (1,500 cfs target between June 1-July 15) in combination with continued herbicide spraying will slow *Phragmites* rhizome/stolon expansion into the channel and increase the percent of AHR channel that remains highly suitable for whooping crane roosting.

### ISAC Discussion Questions:

- 11) Did we choose an appropriate way to project channel width prediction uncertainty through the First Increment Extension (2020-2032) to communicate future channel width conditions under different scenarios? If not, what constitutes a more appropriate method to project into the future?
- 12) What performance indicators are most important to understand the effects of germination suppression flows and other management actions (e.g., river channel disking, in-channel herbicide application) on channel width conditions? What visual representations would be most effective to communicate the costs (EA water and money) and benefits of actions to a broad audience?
- 13) How do we incorporate channel width modeling to make the decision whether to continue germination suppression flow releases at periodic check points during the First Increment Extension (See Figure 5 – Extension Science Plan Attachment #3) and what other information do we need to make those decisions?