



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

**Technical Advisory Committee (TAC) Virtual Meeting**

Wednesday, October 12, 2022; 1:00-4:00 PM CST

*Meeting held in-person at PRRIP ED Office and virtual via MS Teams*

**Technical Advisory Committee (TAC)**

**State of Wyoming**

Barry Lawrence – Member

Jeremy Manley – Alternate

Michelle Gess - Alternate

**Bureau of Reclamation (Reclamation)**

Brock Merrill - Member

**State of Colorado**

Kara Scheel - Member

**U.S. Fish and Wildlife Service (Service)**

Matt Rabbe - Member

**State of Nebraska**

Caitlin Kingsley - Member

**Environmental Entities**

Rich Walters – Member

Amanda Hegg - Member

Melissa Mosier – Alternate

Carrie Roberts - Member

**Upper Platte Water Users**

n/a

**Colorado Water Users**

Jason Marks - Member

**Downstream Water Users**

Jim Jenniges – Member

Dave Zorn – Member

**Executive Director’s Office (EDO)**

Jason Farnsworth, ED

Chad Smith

Malinda Henry

Tim Tunnell

Patrick Farrell

Mallory Jaymes

Kaley Keldsen

Michael Steele

**Other Participants**

Jeff Runge - USFWS

Jean Eichhorst – NE DNR

Joel Jorgensen - NGPC

Melissa Marinovich - NGPC

**WELCOME & ADMINISTRATIVE**

Merrill called the meeting to order at 1:00 PM Central Time.

**AGENDA MODIFICATIONS**

No modifications offered.

[10-12-2022 PRRIP TAC Meeting Agenda](#)

**MINUTES**

Zorn offered the following correction for the July 13, 2022, TAC minutes.

Lines 76-77: Zorn said it was a stretch to link fishing with predator management. He said 2 users will not have a significant impact on the bass population. This correction has been made to the minutes.

**TAC MOTION:** *Marks moved, and Walters seconded to approve the July 13, 2022, TAC Meeting minutes. Minutes approved.*

[07-13-22 PRRIP TAC Meeting Minutes FINAL](#)

**LAND*****Tract 2021001 Meyer Estate Management Plan***

Tunnel presented the management plan developed for the Meyer Estate giving a summary of management planned to attain each of the management objectives. Tunnel pointed out that the GC will give further direction on the fate of the existing buildings on the property. He also noted plans to update Figure A-8. Rabbe asked if transmission lines were marked with avoidance equipment on this property? Jenniges mentioned the lines are close to trees, not sure if they were marked with spirals. Would be good to get that information next time out there. Also keep those lines in mind if the Program does any tree clearing on the property. Walters asked if there were any plans to diversify management of the meadow on the property to support diversity? Tunnel said there were no plans to do any cross-fencing in the small area, but maybe alternate years of grazing with rest to diversify structure. Rabbe pointed out that it may be better to leave the vegetation tall in that meadow since it is a buffer area to discourage whooping crane use near transmission lines. Farnsworth asked if we surveyed for violets here. Henry said we didn't survey specifically for violets, but the grassland vegetation monitoring survey done this year included this area. Tunnel said the Program hasn't received the results from this monitoring effort yet. Farnsworth said what he is hearing is that the TAC would like the EDO to manage the meadow for other species diversity.

**TAC FEEDBACK:** *The TAC advised the EDO to look into options for managing the meadow on the Meyer property for other species.*

EDO Document: [03 Meyer Management Plan](#)

**GERMINATION SUPPRESSION*****2023 Germination suppression and In-Channel Mechanical Management***

Henry summarized discussions from the September GC meeting about Program water availability for 2023 and plans to implement germination suppression flow releases again in June 2023 to gather information to address Science Plan Big Questions about how effective it is to use Program water to



maintain wide, unvegetated channel widths suitable for whooping crane roosting. To evaluate effectiveness of Program water, the EDO has done minimal in-channel disking and plans to do minimal disking through the fall of 2023 as well. This reduced mechanical maintenance effort is reflected in the 2023 budget. The EDO is checking in with the TAC at this point to receive their feedback on this plan for 2023. Jenniges/Rabbe asked if the areas being disked were generally high and dry islands above where germination suppression flow releases might reach. Tunnel said disking this fall at MCA island at Dipple and limited areas within the Pawnee complex (along southern bank, DOT property island perimeter). Farnsworth said we can take these disking polygons into account in our analyses. Farnsworth said that the reservoir had recently received an extremely dry designation, so it is possible that our anticipated water availability for 2023 changes. We are still planning for a 2023 germination suppression release, but in early spring we will reevaluate, taking reservoir conditions into account. Discussion turned to disking and mowing efforts on non-Program conservation lands including Rowe and Crane Trust property. Tunnel and Farrell are working together to get polygons for these vegetation management efforts to include in our evaluation of effectiveness. Hegg said Rowe mowed islands, but no disking. Mosier asked if a reservoir coordination meeting had been scheduled yet for the fall? Merrill said usually at same time as fall WAC or EAC/RCC meeting. Zorn said no but should be soon.

### **SEDIMENT AUGMENTATION**

#### *Sediment Augmentation Implementation Plan*

Henry introduced the Sediment Augmentation Implementation Plan as a document in support of the Extension Science Plan to be included as a living link within Attachment #4 of the Science Plan. As a Science Plan supporting document similar to monitoring protocols and data analysis plans, this document needs to be reviewed by the TAC prior to being included in Attachment #4 of the Science plan but does not need to be reviewed or approved by the GC. The implementation plan describes the conceptual design, tools, data, and procedures that are used to plan for and implement sediment augmentation. The document also provides a summary of sediment augmentation from 2017-2022. Rabbe asked if monitoring efforts included tracking sediment gradation? Farnsworth said we have done so in the past with limited benefit and no clear signal. Currently we are looking at changes in channel bed elevation over time, but we can ask the ISAC at the February Science Reporting Session if this is something they think would be informative. Jenniges asked what we would do with this information? Rabbe asked if we could use this information to improve our efforts? We need to track if mobile bed transport rate is sufficient before bed armoring occurs and sediment stops moving. Farnsworth said we are currently evaluating the data and asking the question of whether or not we can see sediment moving downstream. Rabbe asked how long we have been augmenting. Farnsworth said including 2022, we have done 6 years of systematic augmentation. Rabbe asked when the significant incision started. Farnsworth said maybe 40 years ago. Jenniges said sediment has washed in after that, so it has been less than 40 years. Specific gage analysis – stable at Overton since around 2007 but many more lines of evidence to examine and talk about at the February Reporting Session. Jenniges asked if we had completed sediment augmentation for 2022. Farnsworth said we have finished pushing sediment into the river. We had water support to transport the sediment early, but CNPPID has dewatered for maintenance. Henry asked if the TAC had any feedback on the Implementation Plan, or if they were in favor of including it in Attachment #4 of the Science Plan as written. The TAC advised the EDO to put the Sediment Augmentation Implementation Plan into Attachment #4 of the Science Plan as written.

**TAC RECOMMENDATION:** *Include the Sediment Augmentation Implementation Plan within Attachment #4 of the Extension Science Plan.*



EDO Document: [04\\_PRRIP Sediment Augmentation Implementation Plan](#)

### **TARGET SPECIES**

#### *2022 Plover and tern monitoring and predator management update*

Keldsen gave a brief summary of nesting, fledge ratios, and losses at OCSW sites for the 2022 nesting season. She summarized the predator community present at the sites this year, those responsible for documented predation, and losses due to predation. Jenniges asked if track survey information was included in predator registers presented in slides. Keldsen said no, she presented registers documented by trail cameras and video cameras only, but the annual report will include results from track surveys. Jenniges asked about registers vs. predation events. Keldsen explained registers are events when potential predator species are documented on cameras, but for which no subsequent predation occurred. Predation events are when cameras document the act of predation. Rabbe asked if all nests have cameras? Keldsen said no, plover nests are given priority for camera placement, with any remaining cameras dedicated to a site being set at tern nests to reach predetermined number of cameras at each site. For 2022, 36 plover nests received cameras, only 3 plover nests did not receive cameras. Zorn asked about the mid-summer update that gave a bleak outlook for productivity this year compared to an end of season fledge ratio that is high. What factors contributed to this later success? Early season losses allowed time for renesting which was successful. OSG Lexington, Cottonwood Ranch, and Hooker Brothers also contributed successfully fledged nests, especially for terns. Hegg asked about nest visit intervals? Keldsen said once there is nesting visits are twice weekly for outside monitoring, but cameras continuously monitor nests. Hegg asked if there is any indication that cameras impact nest survival? Our 2021 analysis showed no negative impact. We will analyze this again for 2022 and this information will be in the annual report. Hegg asked about the timing of predation. Keldsen said that losses at Dyer were due to a badger present early in the season. Farnsworth added that many nests were lost early in the season due to hail. Zorn asked about targeted removal of problematic predators. Keldsen said yes, for terrestrial mammals. USDA/APHIS set out traps for this badger prior to the season starting and increased efforts upon our instruction but had a hard time trapping the badger.

EDO Presentation: [05\\_2022 LTPP Update](#)

#### *Spring 2022 WC monitoring report*

Jaymes introduced changes to the Spring 2022 WC monitoring report approved by the GC at their September meeting reflecting the GC request to add alternative hypotheses in addition to management hypotheses to the introduction. She also pointed out changes to Figure 3 in the report that resulted from errors in past census numbers for the Aransas Wood Buffalo (AWB) population and errors in crane use days. Those errors have been corrected and the corrections are reflected in Figure 3 and overall averages reported for these metrics from 2007-2022. The gap in Figure 3 corresponding with Spring 2021 proportion of Aransas Wood Buffalo population is due to the lack of a census flight over the winter of 2020-2021 due to COVID. Rabbe asked why there is so much variability in the seasonal proportional use data? He repeated his suggestion to combine Fall use during the previous year with Spring use of the following year to help visualize a more general trend. He said there is little change in the conditions encountered by whooping cranes over both seasons (both a product of the summer growing season, same geomorphic conditions) and proportional use of both seasons corresponds with the winter census at AWB performed in the winter between these seasons. Jenniges pointed out there may be little change in channel width, but flow is likely different. Landcover variables may be similar across seasons, but water metrics and biological strategies are different. Combining the two seasons will confuse things. Jenniges asked if you would double the winter population estimate to calculate proportional use because the entire population flies over twice in two seasons? Henry asked if Rabbe wanted analyses to answer Big Questions based upon combined seasonal use or simply a figure similar



to Figure 3 to look at and evaluate? Jenniges said combining seasons may result in less variability but will not help explain why. Farnsworth said the EDO can put this figure together and send it out. Farrell suggested looking at patterns of use from fall to the subsequent spring. If landcover conditions are similar across seasons and that is what birds are using to make stopover decisions, you should see a high use in the fall repeated again the following spring.

EDO Document: [06 Implementation of the WC Monitoring Protocol – Spring 2022 Final EDO Document: TAC figure of combined Spring and Fall Proportion and Crane Use Days](#)

#### *WC riverine roost site selection analysis*

Henry introduced the discussion by saying that a riverine roost site selection analysis is scheduled for 2022 as a check in on First Increment learning. This analysis is used by the Program to establish suitable habitat criteria for management. She briefly explained that the analysis compares the characteristics surrounding whooping crane use locations to randomly available riverine locations to ask if WC select for characteristics surrounding use sites more often than predicted by their availability. The EDO has used telemetry information to inform choices for the scale of this analysis, including for the scale of the available choice set and the scale for the habitat buffer surrounding each use and available point. Henry and Farrell led a discussion about the proposed explanatory variables for the analysis and the data sources used to quantify the characteristics surrounding use and available locations. Henry pointed out the notable absence of river flow as an explanatory variable. She said that flow is extrapolated from nearest gage and does not vary much over the scale of this particular analysis. Flow is more appropriately addressed directly by the stopover vs. flyover analysis which will encompass variability over a larger temporal and spatial scale. Farrell led a discussion about the data sources used. Rabbe asked to clarify whether the problem is that flow does not vary or that we are relying on relatively few gages. Farnsworth says it is both. In addition, there is a temporal mismatch between the time WC select a location to roost the previous evening and the time when use locations are documented via aerial surveys the next morning. So, flow from nearest gages at the time WC are sited the next morning does not accurately reflect what flow was when the WC selected the roosting location. Very detailed flow information at the time the WC is spotted is not helpful in this analysis but will be for the stopover vs flyover analysis using locations taken at 15 min intervals. Jenniges commented that the term “power lines” is incorrect and should be changed to “transmission lines”. Jenniges suggested we do the analysis of 2017-2022 data first to see if anything has changed. If not, you don’t need to go back and do the 2001-2017 analysis again. Walters asked what is meant by “tall vegetation”. Farrell explained that prior to 2017 unobstructed channel widths were based upon hand-delineations. From 2017 onward we have used eCognition to classify vegetation from LiDAR into height categories. In-channel vegetation >2 ft tall is considered as an obstruction. Walters asked if these two methods are comparable? Farnsworth said yes, the 2017-2020 Reach-wide Geomorphology and Vegetation Report tested this. Walters asked how the EDO plans to document the comparability among data sources that differ over time and how each are used in the analysis? Farnsworth and Farrell outlined the breadcrumb trail being put together to document the stepwise progression of this analysis. Rabbe asked if the unobstructed channel widths and nearest forest metrics provided in the seasonal WC reports are hand-delineated. Jaymes said yes, from most recent aerial imagery. Farrell noted that those measurements will not be used in this analysis. Jenniges repeated his suggestion to run 2017-2022 to see if results are the same, if so, validates the earlier 2001-2017 results. Farnsworth asked what happens if we use the only the recent data with current technology feeding our data sources and get a different answer, then how do we know if there has been real change or simply a difference in methodology? Farrell asked Jenniges which data source



for transmission lines to use? Jenniges said the Department of Energy is the only free source for this information, but it requires some checking for accuracy. Farrell asked if Jenniges would be willing to help with this. Jenniges said yes. Jenniges said we may need to hand-delineate these. Rabbe asked about melding all agriculture together or separating them out into types. Farrell said we will do both. Farnsworth mentioned that the National Landcover Data Base does not accurately reflect in-channel forest, so we are currently working on a strategy to mesh the Rainwater Basin landcover product into this. When we have LiDAR, we will use it but working backward in time we will have to use best available source. Jenniges asked about sources for WC use locations. Farrell said this is a 2-tiered analysis. It uses first, unique, systematic observation for model selection (defining which variables are important). Then we incorporate all use locations to determine effect size. Rabbe asked about limiting where we pull available locations to reflect WC avoidance of bridges. Farrell and Farnsworth said that bridges will fall under the “developed” landcover classification and will be included in the analysis and addressed directly. Henry noted that the EDO is taking care not to pre-determine what is available and what is not to let the analysis tell us the answer to this.

**TAC FEEDBACK:** *The TAC is generally accepting of the explanatory variables and the data sources with two caveats:*

- 1) *Document comparability of multiple data sources for the same metric over time.*
- 2) *Document analysis progression to link past analyses with current.*

EDO Document: [07 WC Riverine Roost Site Selection Explanatory Variables](#)

### **OTHER SPECIES OF CONCERN**

#### *Fall 2022 violet planting*

Henry informed the TAC that 1000 violet plugs had been planted on Speidel on September 27, 2022. The EDO followed up with watering and rainfall the week after planting did the rest. Hegg asked about plans for monitoring for Regals? Since site fidelity is high in this species, it would be good to document whether planting violets helped move them further west. Henry said no, that is not planned.

### **2023 SCIENCE PLAN DRAFT BUDGET**

#### *Proposed 2023 Science Plan budget*

Henry led discussion and stepped through each budget line item with a short justification for items included in each. She noted that line-item LP-2 for Habitat Restoration and Management on Program lands had changed to an estimated \$333,200 to put the total estimated for the Science Plan at \$2,567,800. Farnsworth added under PD-15 Permitting that HDR will help with permit work in 2023 to work on channel split on the Wyoming tract. Rabbe asked if pilots for WC monitoring cover their own insurance? Henry said yes, they are required to have liability insurance. In addition, the Program has liability insurance for these flights. Lawrence asked if cost for aircraft rental includes stand-by time. Jaymes said yes, stand-by time varies by pilot but usually around 30 min a day. Farnsworth pointed out that PS-1 includes cost for developing a 2-D hydrodynamic model from the lower Platte LiDAR flown this fall. Having this information to inform UNL habitat research earlier in study development is beneficial. Rabbe said he is against having 7 ISAC members, the GC appointed ISAC selection panel approved 6 members, so why the change? Farnsworth mentioned that conversation with the Whooping Crane Tracking Partnership on collaborating to answer WC Big Question using telemetry data demonstrated that Pearse (new 2022 ISAC member) would like to be involved in that collaboration having input on data analysis, which begs the question of independent ISAC review of the product. A 7<sup>th</sup> member on the



ISAC with a background in movement ecology could provide this outside perspective. Jenniges and Rabbe expressed their concern that the Program's ISAC may be too entrenched over long tenures and may no longer be independent, wanting to provide policy advice. Farnsworth asked if the TAC would prefer ISAC members be cycled off faster? Rabbe said the FWS wanted to start fresh with all new ISAC member for the Extension. He is in favor of cycling off current, long-standing ISAC members in the near future. Jenniges referred to the Program charter that states ISAC members will rotate every 3 years. Smith pointed out that the plan the GC approved provides that 4 of 6 ISAC members will be new by 2024. However, given TAC feedback, Farnsworth and Smith said the EDO can rotate Andrews off next year, then Gallat in 2024, providing a 50% recycle while still maintaining some institutional knowledge. The TAC suggested the EDO ask the GC to re-evaluate ISAC term longevity/renewal moving forward. Rabbe suggested a check in with Pearse after a year to see how he is working out. Jenniges asked how the Program selects peer reviewers for the independent peer review process. Farnsworth and Smith said we used to hire someone to find reviewers and pull their credentials together for review, but they can no longer find someone to do this. Smith will fill this role, and the potential reviewers will go through the TAC and the GC for approval. Jenniges said that was fine. Farnsworth asked if the TAC wanted a full peer review of the wet meadows study since the outcome is unlikely to impact Program policy? Rabbe asked for clarification on the difference between this and review for publication. Smith explained independent peer review of Program work is by a 3-person panel that is screened by the TAC and GC, process costs about \$27,000. Publication reviewers are chosen by journal editors. In this case the wet meadow study would go through the TAC and the ISAC, then to the journal for review. Journal publication costs are around \$3,000 for full-text access. Jenniges and Rabbe suggested wet meadow study go through a full Program independent peer review and through publication peer review. Smith added that the TAC will see peer-review comments. We will need to establish a working group from the TAC to select reviewers, go over peer-review documents, and help address comments. Henry will be tasked with making this work group fit the science content to be reviewed. Lawrence asked how much the Science Plan makes up of the total PRRIP annual budget? Farnsworth said it is 25-30% of total budget for 2023.

**TAC FEEDBACK:** *The TAC was not in favor of temporarily having 7 ISAC members and suggested the EDO ask the GC to re-evaluate ISAC term longevity/renewal moving forward.*

EDO Document: [08 DRAFT FY2023 PRRIP Science Budget and Work Plan](#)

### **PROGRAM SCIENCE PRESENTATIONS**

Henry briefly summarized Program science being presented at various conferences in October (see meeting agenda for details). Lawrence announced a presentation by the WY Water Development Office on cloud seeding to be given at the Platte Basin conference.

### **TAC MEETING REVIEW & WRAP-UP**

#### *Action Items:*

- EDO will revise the 2023 FY Science Plan Budget to reflect TAC feedback, specifically revising the ISAC-1 line item for ISAC Stipends & Expenses



*Future calendar events:*

- **Dec 6-7<sup>th</sup>, 2022** GC Quarterly Meeting in Loveland, CO
  - Dec. 7<sup>th</sup> invitation to visit Chimney Hollow Reservoir Project led by Northern Water
- **Feb 14-16th, 2023** Science Reporting Session in Omaha, NE

**TAC MEETING END**

The TAC meeting concluded at 4:00 PM Central Time.