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

Technical Advisory Committee (TAC) Virtual Meeting
Meeting held in-person at Executive Director's Office in Kearney, NE
Day #1: Tuesday, October 22, 2024; 1:00 PM – 5:00 PM CT

Technical Advisory Committee (TAC)

State of Wyoming
Barry Lawrence – Member

State of Colorado
Kara Scheel – Member

State of Nebraska
Caitlin Kingsley – Member

Upper Platte Water Users
n/a

Downstream Water Users
Jim Jenniges – Member
Brandi Flyr – Member
Dave Zorn – Member

Bureau of Reclamation (Reclamation)
Brock Merrill – Member

U.S. Fish and Wildlife Service (Service)
Matt Rabbe – Member

Environmental Entities
Rich Walters – Member
Amanda Hegg – Member
Bethany Ostrom – Alternate
Melissa Mosier – Alternate

Colorado Water Users
Jason Marks – Member

Executive Director's Office (EDO)

Jason Farnsworth, ED
Chad Smith
Malinda Henry
Justin Brei
Seth Turner
Patrick Farrell
Tim Tunnell
Libby Casavant
Ed Weschler
Quinn Lewis
Nicole Fijman
Jon Wentz
Alyx Vogel
Ethan Ideus

Other Participants

Shuhai Zheng – NE DNR
Cheyenne Love – WWDO
Mike Archer - NGPC
Bradly Thornton - USFWS
Terence Stroh – Bureau of Reclamation
Richard Belt - SPWRAP
Abe Kanz – Crane Trust

WELCOME & ADMINISTRATIVE

Rabbe called the meeting to order at 1:01 PM Central Time.

AGENDA MODIFICATIONS

Discussion on the Spring 2024 WC Monitoring Report is expected to go long to address TAC feedback received on the report. Rabbe will also update the TAC on the 5-yr Whooping Crane Status Update that was scheduled for October of this year following discussion of the whooping crane monitoring report.

Document: 01 – PRRIP TAC Quarterly Meeting Agenda_Oct_2024

MINUTES

The TAC offered no corrections to the July TAC meeting minutes.

TAC MOTION: *Jenniges moved, and Walters seconded a motion to approve the July 2024 TAC Meeting minutes.* Minutes approved.

FINAL Document: 07-16-24 PRRIP TAC Meeting Minutes FINAL

TARGET SPECIES MONITORING

2024 Plover and Tern Monitoring Season Update

Wentz gave an update on how plover and tern monitoring went during the summer of 2024. He presented information on nests, fledges, and nest-based fledge ratios for piping plovers at off-channel sand and water sites. No nesting was observed on the river in 2024. Vogel presented summaries of losses to predation and weather during the 2024 breeding season. Waves of predation and weather from Kearney westward at off-channel sand and water sites were the cause of most losses in 2024. After two years of high productivity and low predation and Kearney Broadfoot South where we have additional predator fencing and lighting, predation by skunk that could pass through the predator fence resulted in heavy losses at this site in 2024. Across the AHR, losses to the west were balanced by high productivity at both Newark sites, productivity from the Leaman site, and the first documented use of the Follmer-Alda site further to the east. Jenniges asked if we identified predators through cameras. Vogel said yes. Predation by owl, badger, and skunk were all caught on camera. Rabbe asked how predators are getting into sites? Vogel said track surveys documented badgers digging under peninsula fences. Tracks also showed the skunk going through the interior fence at Broadfoot South. Henry said the fence has been a good deterrent against land predators over the last two years at Broadfoot South, but this year we had a skunk that could fit through. Farnsworth asked what the mesh size is on the interior fence. Wentz said it is a 4x4 mesh.

Presentation: 03_2024_TAC_Plover_Presentation

2024 Spring Whooping Crane Monitoring Report

Ideus summarized monitoring results for the spring 2024 whooping crane migratory season. The Program counted 187 individual whooping cranes in 44 unique groups. The Program documented use of the AHR by approximately 35% of the Aransas Wood Buffalo population of whooping cranes for a total of 845 use days during the spring migration. Ideus addressed TAC questions regarding measurements of unobstructed channel width (UOCW) and distance to nearest forest (NF) received over email. He showed how those measurements were made and how measurements were corrected using additional

information provided in photos of the groups in question during PRRIP aerial surveys. The appropriate changes have been made to correct the values presented in Table 6 of the monitoring report. Rabbe asked to explain how hand-delineated metrics are used versus remotely sensed metrics. Henry said that the hand-delineated metrics in the seasonal monitoring reports are not used in multi-year analyses. They are hand-delineated because delay in getting annual LiDAR would usually delay seasonal reporting. Farrell said that unobstructed channel widths and distance to nearest forest used in multi-year analyses like the roost site selection analysis come from fall LiDAR coupled with ECognition classification of vegetation into height classes. Together they provide a systematic way to classify sand, water, and vegetation less than 2 ft in height for unobstructed channel widths and vegetation 15 ft or taller for measuring distance to nearest forest. The EDO and the TAC went through a validation procedure comparing hand-delineated metrics and remotely sensed metrics a couple years ago. The difference was minimal and deemed acceptable by the TAC given the considerable effort required to hand-delineate over the 90-mile reach and that remote sensing was systematic and repeatable over time and space. Rabbe asked about the use of fall LiDAR to assess spring vegetation height classes. He said if winter scour reduces vegetation height, the channels would be more open in the spring at whooping crane locations than reflected in the fall LiDAR, so the analysis would not reflect this and would underestimate unobstructed channel width. Rabbe asked if aerial monitoring photos had been used as verification of measurements in previous reports. Ideus said he had asked Jaymes, and this was the first report where photos were considered together with aerial imagery. Rabbe suggested that as we move forward, the EDO use both aerial imagery and aerial WC monitoring photos to hand-delineate these metrics. EDO should then compare these spring 2024 hand-delineations to remotely sensed measurements from fall LiDAR to see if they are comparable. This would be a good check on the validity of using fall LiDAR for spring whooping crane locations in larger multi-year analyses. If these metrics are not comparable across methods, we may need to consider a hand-delineated spring-specific measurement of unobstructed channel width and nearest forest when the whooping crane was there for multi-year analyses.

Henry addressed concerns voiced by Rabbe about how whooping crane use (proportion of the population) of the AHR has changed over time. She went through what was presented in the report in Figures 5 - 6 and the two analyses that were performed to evaluate changes over time. She explained that data from 2014-2024 adjusted for observations occurring between the 5-95th percentile dates of initial whooping crane observations in Nebraska over the most recent 10-year period were used for the analysis of possible trends over time. TAC went through the process last year of going back to provide both adjusted and unadjusted metrics for each year so long-term trends could be evaluated over the same 5-95th percentile monitoring window. Data collected prior to spring 2014 were not considered in the analysis because the Program did not conduct monitoring early enough in the spring during these years to encompass the 5th percentile dates, thus the number of birds using the AHR during the spring of these years could have been an underestimate. Henry then asked Rabbe to voice his concerns about the report and how the analysis was conducted. Rabbe made the following points:

- The TAC was not aware that the use of values adjusted for the 5-95th percentile would mean losing earlier year's data. Henry said this is true for the spring only; fall monitoring efforts in the past encompassed the 5-95th percentile window.
- Sampling effort is not the same across years, we miss 30-40% of the survey days anyway due to flight cancellations.
- The report paints an inaccurate picture of trends in whooping crane use and suggests we have not seen increases in the proportion of the population using the Platte in the spring. Report as written

does not do a good job of telling the story of how whooping cranes have responded to Program management.

Ostrom and Walters agreed that the story could be told better. Walters said maybe the statistics do not show what those who have worked 20 years on the Platte have seen. Farnsworth suggested we separate the discussion into two parts: 1) how to best represent and evaluate seasonal data over time, and 2) how to assess whooping crane response to Program management. Flyr said the raw data do a good job of telling the story. The data are not well represented by a line because there is a lot of scatter. Flyr sees variability in the data as telling a story of phase changes in whooping crane use. Kanz said the data may not fit a linear trend and the variability is an important aspect of the data. Jenniges agreed and said we need to figure out how to illustrate that in the report. Henry explained that the use of a linear regression was not good practice as the line was a poor fit to the data, so a test of the slope of that line was not informative. The dataset does not adhere to the assumption of a linear regression. Henry supported the use of the Spearman's Rank Correlation as a nonparametric test that does not assume a linear relationship, normal distribution, or equal variance across years. It just ranks use from high to low without consideration of how high or how low, then tests whether ranks increase over time. Spearman's is more appropriate for the dataset but it does not test for a linear relationship among the raw data (ranks instead), so results cannot be represented by a trend line through the data points. The significance of the Spearman's test when evaluating data from 2001-2024 comes from early years of low proportional use, but those are also years when we did not monitor over the full 5-95th percentile window. Rabbe said that long term datasets always suffer from protocol changes that impact comparability, but that is no reason to discard the information you do have. Flyr pointed out we could still present the data over a longer time period, but some way of demonstrating how monitoring effort had changed over time was also useful. Henry said that was done in the tern and plover monitoring report, but the ISAC said analyses should not be conducted across those datasets as if they were the same. Farnsworth wants to stay away from statements in seasonal monitoring reports that give the Program a gold star during years of high use, then take that gold star away during years of low use as the line shifts from high to low years of use. He asked Smith for input on how other Program's evaluate species response to Program actions. Smith said we could develop something like a report card that reports on Program management, acres of suitable habitat, and whooping crane use over time. Farnsworth asked what the TAC would want something like that to look like. Given the time constraints of today's meeting, Rabbe and Walters suggested putting together a TAC working group to address both 1) and 2) above. The 2024 spring report is on hold until that group works through these issues. Rabbe asked for volunteers for this group.

Working group members include: Jenniges, Rabbe, Walters, Ostrom, Kanz, Flyr, Zorn, Henry, Farrell, Ideus, and Farnsworth. No Nebraska, Colorado, or Wyoming representatives volunteered to participate in this working group, but the monitoring report and any other products will go back through the full TAC so everyone can get on the same page.

EDO ACTION ITEMS:

- Revise draft report to reflect updated unobstructed channel width (UOCW) and nearest forest (NF) measurements.
- Integrate aerial monitoring photos with aerial imagery to hand-delineate UOCW and NF for seasonal monitoring reports moving forward.
- Compare spring hand-delineated metrics using both aerial imagery and monitoring photos to metrics derived from fall LiDAR + ECog to see if they are comparable.

- Set up and participate in working group meetings to address how seasonal data are represented over the long term in whooping crane reports and decide how to tell the story of whooping crane response to Program management.
- Gather channel width data over time (from channel width model dataset) and divide this into Program vs. non-Program managed datasets to intersect with WC use data.

TAC ACTION ITEMS:

- Participate in working group to revise how seasonal data are represented over the long term in whooping crane reports and decide how to tell the story of whooping crane response to Program management.

NO TAC MOTION on 2024 Spring Whooping Crane Monitoring Report at this time.

Initial Draft Document: 04_Implementation of the Whooping Crane Monitoring Protocol – Spring 2024 Report TAC DRAFT_9.30.24
Revised UOCW/NF Draft Document: 04_Implementation of the Whooping Crane Monitoring Protocol – Spring 2024 Report Revised DRAFT_10.22.24
Presentation: 05_WC Spring Report Presentation-TAC 2024 v2

5-year Whooping Crane Status Update

Rabbe told the TAC that the 5-year species status update for the whooping crane had been put on hold, with priority being given to updating the Recovery Plan from 2007 for the species first. The Service has a recovery team putting the plan together. He anticipates that the Recovery Plan is about a year out. A draft will be made available for public review and comment. At that time the Program or individual stakeholders can contribute to the public comments. The Recovery Plan is intended to feed information into the 5-year species status update. Henry asked Rabbe who sits on the recovery team. Rabbe said the Service contracted the International Crane Foundation to update the recovery plan, but it is a Service document. He is unsure if the plan will be international, including Canadian Wildlife Service Environment and Climate Change Canda, or will be specific to the United States.

SCIENCE PLAN

Whooping Crane Stopover vs. Flyover Update

Farrell updated the TAC on the progress made by the working group toward developing a data analysis plan to use telemetry data to address Extension Big Question #4: What factors influence whooping crane decision to stop or fly over the AHR? Farrell summarized differences in the distribution of flyovers vs. stopovers for distance and time since last stopover as well as time of day over all Nebraska sand bed rivers and for the Platte specifically. Farrell said that the working group would receive the dataset that generated the figures so they could work with the data. He then reviewed the different scales over which explanatory variables will be measured and tested for importance. He talked about temporal/spatial gaps in the telemetry dataset and alternative ways to deal with this in the analysis. Rabbe asked about the data source for wetted width. Farrell said that for Platte-specific analyses we can use the 2D hydraulic model. Henry and Farnsworth said that across systems will need a more generally available and comparable data source. Sentinel global satellite imagery is available that can provide this information. Farnsworth said the Niobrara and Loup do not have the daily variability in flow that the Platte has, so we would probably obtain imagery at both low and high flows during migratory seasons to get a range of wetted widths birds would experience. Kanz asked for clarification on the scales for analysis. Farrell and Henry said working group decided on 3 scales for evaluating importance of factors: 1) 10 miles out from river of interest with a 10-mile buffer on either side of the flight path; 2) 10 miles

out from river of interest with a 4 mile buffer on either side of the flight path; and 3) on the river channel itself with 0.77 mile buffer.

EDO ACTION ITEMS:

- Send working group dataset associated with time of day, distance and time since last stopover, and stay length distributions across river systems.
- Set up a working group meeting in November to discuss explanatory variables of interest, how to define and measure them, and the data sources to be used.

Document: 06_WC Stopover vs Flyover Update
Presentation: 07_WC Stopover vs Flyover Update

Whooping Crane Roost Site Selection

Farrell reminded the TAC of the process gone through to develop and revise the 5-year check-in on Whooping Crane Roost Site Selection and TAC involvement in that process. He summarized the changes to the report suggested by the ISAC at the Feb Reporting Session and the Summer ISAC meeting. The EDO agrees that the report would benefit from these changes and Farrell asked whether the TAC was on board with making the recommended changes. Hegg asked if the selection relationships for the other variables have been redone. Farrell said yes, they will be incorporated into the report, but those relationships didn't change in shape much. Not like unobstructed channel width, which is why it is shown here. Kanz asked Farrell about the scale of the relative selection ratio on the y-axis. Farrell explained the scaling and why it was done. Farrell asked the TAC whether they supported publication of this report. Flyr asked what the EDO envisions the publication will look like. Henry said the technical report is very PRRIP focused. She envisions a revised introduction and discussion to make it more appropriate for a broader audience and for the journal chosen for publication. The EDO would like to see this revision be a collaborative effort involving TAC members that contributed to revision of the technical report. Results of the 5-year check-in did not significantly change what we have already published as important for whooping crane roost site selection, but it does utilize an updated landcover and more roost locations under wider channel conditions. Farnsworth and Farrell added that the Program's 2019 publication only considered on-channel characteristics to explain whooping crane roosting. This effort evaluated both on-channel and broader off-channel landcover characteristics as predictors of whooping crane roosting. Rabbe said he understands why the Program would want to publish as a 5-year update with new information. Jenniges said the Program should publish because at some point the Service said they consider the gold standard in terms of best available science for consideration when writing the Biological Opinion to be journal publications. Flyr said that publication is a good way to highlight and summarize what the Program thinks is the most important for consideration rather than the Service having to pull it out of the many documents on the Program website. Rabbe said he thinks Program publications should be important for decision-making.

EDO ACTION ITEMS:

- Revise the Whooping Crane Roost Site Selection Technical Report to incorporate ISAC suggestions.
- Provide the revised figures and tables with revised methods and results to TAC in Jan 2025 for feedback.
- At Jan TAC meeting, put together a group of TAC coauthors to develop a publication from the Technical Report.

- Work with TAC work group to rewrite introduction and discussion for a broader publication.

TAC ACTION ITEMS:

- For Jan 2025 TAC meeting, consider participation in write-up and publication as a co-author.
- Work with EDO in early 2025 to rewrite introduction and discussion for a broader publication.

Document: 08_WC Roost Site Selection Update

WEST/Ecotope Collaborative Whooping Crane Diurnal Use Analysis

Farrell reminded the TAC of the process of bringing the Program's WEST analysis and the Ecotope publication closer in terms of methodology to provide insight into why conclusions differed. Similar to the WC Roost Site Selection, the effort provides the Program with an update on the factors important for whooping crane selection of diurnal use sites within the AHR. The effort utilized the Ecotope landcover layer that includes more information to delineate wetland features on a finer scale than was done in the WEST analysis. It also included on-channel and off-channel landscape features together in a single analysis as explanatory variables to test the relative importance of riverine and off-channel wetland habitat for diurnal use. The Program's 2019 diurnal use site publication was not specific to the AHR, rather evaluated factors that were important across the broader migratory corridor. The Ecotope article did not consider diurnal use of riverine habitat in their analysis. So, this publication would contribute both novel and more current information on whooping crane diurnal site selection to the published literature. Rabbe said he understands why the Program would want to publish this effort, but the principal authors of the Ecotope article (Caven, Baasch, and Rabbe) are not interested in participating. Rabbe said the EDO would need permission from the Rainwater Basin Joint Venture to publish anything using the Ecotope landcover. Henry said the EDO would ask for permission. The EDO would also formally invite all Ecotope coauthors to collaborate. In addition, the EDO welcomes TAC participation in writing this up for publication. Rabbe said he would like to see a draft that he can react to as a TAC member but will not be involved in a collaborative publication. Farnsworth asked Kanz how he feels as the Crane Trust Science Lead about collaborating on this effort. Kanz said he was not involved in the Ecotope publication or in the collaborative process to investigate differences in methodology. He would need more information on how that process went and what the conclusions were. Farnsworth said the EDO could send him documentation of the process for review, and he could get back to us on whether he would be willing to collaborate on a publication.

ACTION ITEMS are on hold until GC takes action on TAC grassland/wet meadows policy recommendations.

EDO ACTION ITEMS:

- Obtain permission to use Ecotope landcover product developed by Rainwater Basin Joint Venture in publication.
- Send Kanz and Ecotope article coauthors a request to participate in a collaborative publication. Include documentation of collaborative process and results.
- Linking the science and policy recommendations: Write up a document that links the results of this effort to the grassland/wet meadow management guidelines provided by the TAC/LAC.
- Put together a group of coauthors (from TAC and Ecotope article) to develop the publication.
- Provide a draft to the TAC for feedback and potential recommendation to the GC.

TAC ACTION ITEMS:

- Consider participation in write-up and publication as a co-author.

Sediment Augmentation Peer Review
Smith summarized the peer review process, pointing to the series of documents included for this meeting to update the TAC on where we are in the process today. He said the EDO is asking the TAC today if they are ok with EDO changes to the document in response to peer reviewer comments. If the TAC is okay with revisions, does the TAC support sending the revised document back to peer reviewers to see if they accept these changes. Flyr said she felt the feedback from peer reviewers was helpful, they provided a lot of useful feedback. Ostrom said it looked like they had done their homework, which was nice to see.

Casavant summarized the types of changes peer reviewers wanted to see. She went over changes in each category and how feedback was incorporated or addressed. She demonstrated the changes made and where they can be found in the report. She also explained when changes were not made, why, and how that was explained to reviewers.

The TAC agreed to send the revised Data Synthesis Compilation back to the peer reviewers. If the reviewers accept EDO changes, the EDO will ask the TAC for a motion to recommend the Sed Aug Data Synthesis Compilation to the GC via a virtual vote.

EDO ACTION ITEMS:
- Send the revised Technical Report back to the peer reviewers.
- If accepted, set up a virtual TAC motion and vote to recommend report to the GC for their December meeting.

TAC ACTION ITEMS:
- Upon peer reviewer acceptance, participate in virtual TAC motion and vote to recommend report to the GC for their December meeting.

Document: 09a_Sed Aug Report Peer Review Portfolio
Document: 09b_PRRIP Sediment Augmentation Data Synthesis Compilation, edited after peer review
Presentation: 10_TAC 10.24 Sed Aug Peer Review

No Augmentation Monitoring Plan
Lewis presented the No Augmentation Monitoring Plan objectives and methods. He went over the timeline for development of this plan and how feedback from the TAC and ISAC have been addressed. Ostrom asked about the timeline for no augmentation. Would there be no augmentation in 2028? Brei said that the assumption was five years without augmentation, but since we already had one year of no augmentation in 2023, the interpretation depends upon who you ask. Walters/Rabbe said their understanding was that the GC decision was to halt augmentation up to 5 years and re-evaluate annually. The decision about what to do in 2028 will probably be made in 2027. Reporting on 2027 changes won't happen until 2028. Quinn will add a statement that these dates depend upon what we learn as we move along. Kanz asked about the doubling sediment augmentation option, was that taken off the table? Kanz and Rabbe asked this given that a doubling of sediment augmentation was recommended by the PRRIP Sediment Augmentation Data Synthesis Compilation, Ned Andrews on the ISAC, and peer reviews. Farnsworth said it was an option presented to the GC, but they opted for no augmentation.

EDO ACTION ITEMS:

- Make the recommended changes in the wording about plans for 2028 augmentation.

TAC MOTION: *Zorn moved, and Scheel seconded a motion to recommend the No Augmentation Monitoring Plan (with above noted language change) to the GC.* Motion carried.

Lewis presented an update on J2 channel conditions for 2022-2023. He presented the metrics contained within the No Augmentation Monitoring Plan for the TAC to consider. No areas of concern were pointed out at this point. No substantial large scale changes outside of previously observed levels of erosion and deposition occurred from 2022 to 2023. Jenniges asked if the EDO had looked to see if south channel at Cottonwood Ranch is capturing more flow. Casavant said it has flipped back and forth between the north and south channels across years. Farnsworth said EDO will keep an eye on this as we don't want more water to continuously go down the south channel. Rabbe asked whether the EDO had considered that year one reporting still includes sediment from our previous augmentation efforts. Lewis and Casavant said, yes, that is probably correct, but there is no way to track what is mechanically augmented from prior efforts versus new laterally eroded sediment. We will look at year after year trends to keep an eye on this. Casavant said there are a lot of inputs to take into consideration along with remaining mechanically augmented sediment, like break through channel sediment. Farnsworth said the reach just downstream of the augmentation area can be monitored for volume change in more detail.

Lewis reviewed a few elements of new data collection that gives us information on a sub-annual time scale. Drone images and sediment sampling were conducted this summer to document changes in sediment size/distribution over time. Also drone images can help Digital Surface and Elevation Models to spatially characterize an area on a sub-annual basis to evaluate erosion/deposition patterns at a finer temporal and spatial scale. Zorn asked how the auto-calculated sediment size from drone imagery compared to manual samples? Quinn said he has only done a minimal level of processing, but what he has done showed a slightly higher sediment size via drone imagery, but it is in the same ballpark. A manually collected sample goes beyond the surface level that a drone can capture.

Document: 11_NoSedAugMonitoringPlan_Final
Revised Document: 11_NoSedAugMonitoringPlan_Final w TAC revision
Presentation: 12_NoSedAugMonitoring_October_2024_TAC_final

LAND

Land Management Plans

Tunnell provided the Kearney Broadfoot South and Lindstrom Track Restoration and Maintenance Plan for TAC review and consideration. The LAC has already reviewed these, but the EDO is looking for TAC feedback. The Broadfoot South plan is for creating and maintaining off-channel sand and water habitat for plover and tern nesting. The work at Lindstrom is designed to create suitable on-channel habitat for whooping cranes by removing vegetation on in-channel islands and clearing riparian forest back from the channel to increase unobstructed channel widths. In addition, the Stall tract in the Cottonwood Ranch Complex to the west of Lindstrom and the Pawnee Complex were identified as locations where channel conditions could be improved incrementally through disking and herbicide application to promote erosion of in-channel islands and banks. The work done at these tracts is expected to be maintained largely by river flow. These land management plans have been recommended by the LAC and will go to the GC in December.

Document: 13_Tract 20240002 Restoration and Maintenance Plan_DRAFT LAC-edited_w_maps
Document: 13_Lindstrom Clear Grub
Document: 13_Pawnee Disking
Document: 14_Tract 2024_Broadfoot_South_Restoration and Maintenance Plan_DRAFT LAC edited_w_maps_0

DAY #1 REVIEW AND WRAP-UP

Meeting ended at 4:57 PM CT.

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

Technical Advisory Committee (TAC) Virtual Meeting
Meeting held in-person at Executive Director's Office in Kearney, NE
Day #2: Wednesday, October 23, 2024; 8:00 AM – 12:00 NOON CT

Technical Advisory Committee (TAC)

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n/a

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Terence Stroh – Bureau of Reclamation
Richard Belt - SPWRAP
Abe Kanz – Crane Trust
Jack Mensinger – NE DNR
Melissa Marinovich – NGPC
Jeremy Manley – WY State Engineer's Office
Amy Ostdiek – State of CO

WELCOME & ADMINISTRATIVE

Rabbe called the meeting to order at 8:02 AM Central Time.

WET MEADOWS

Wet Meadow Hydrology Report Peer Review

Smith gave a status update on the peer review process for the Wet Meadow Hydrology Report. All three peer reviewers initially accepted the report with revisions. The EDO addressed peer reviewer comments through report revisions and an annotated response document that was sent back to the peer reviewers for their consideration. Two of the three reviewers accepted the revised report. One reviewer did not. That reviewer's major criticism was that our model was over-calibrated, making it a very good predictor of conditions at specific wells, but not for the site as a whole. So, we got the right answer for the wrong reasons. The EDO recognizes that the Program has essentially moved past the wet meadow issue, reducing the utility of the peer review process to help the GC determine if results should be adopted for decision making, but the EDO would like to wrap up this effort. One option suggested by the EDO was to get help figuring out how to best address very specific and technical peer review suggestions and the amount of effort that might be required. Bill Hahn, a prior Program special advisor, recommended a ground water modeler at Colorado State to review the report and provide feedback. His timeline would put us into the beginning of 2025 before we had his feedback. Farnsworth asked the TAC how they wanted to handle this. What are the options for moving forward? Do you want to spend the time and effort to improve the model, potentially depending upon additional review from Colorado State ground water modeler? Or do you want to just wrap it up, acknowledging that the model will not be used for Program decision-making? There may still be useful chapters in the report that could be published as they were not model dependent such as the prediction of vegetation composition based upon hydrology. Jenniges said he was okay with just wrapping this up. He favors TAC accepting report "as is" as it is no longer relevant for management. Kanz was uncomfortable with the disagreement among reviewers and the overfitting of models within this document, suggesting that the EDO look further into this. Flyr said that over-calibration is a common problem with groundwater modeling. Predicted values will not be accurate due to being too specific to reference conditions at individual wells used to calibrate the model. Farnsworth asked if Flyr and Kanz would be willing to take a look at the reviewer's comments and provide feedback. Both said yes.

EDO ACTION ITEMS:

- EDO will receive comments from Flyr and Kanz and figure out how to finish up the report.
- Option remains to send report to additional reviewer in early 2025 for feedback.
- Come back to the TAC in April with additional information.

TAC ACTION ITEMS:

- Flyr and Kanz will provide written comments to the EDO.

TAC Wet Meadow Recommendations

Rabbe introduced the document that he and coauthors have proposed to move forward to the GC to serve as the TAC's recommendation on how to manage PRRIP grasslands and wet meadows. He pointed to #4 item in the document, saying that this document recommends prioritizing use of Program water to improve riverine habitat rather than creating/improving ponding in wet meadows/grasslands. Kingsley asked for clarification on point #3.

> "The TAC believes that due to lower than anticipated documented WHCR use of Program grasslands/wet meadows, the Program should shift management practices to provide for better

overall ecological health and to benefit other species of concern, while still providing suitable whooping crane habitat during certain times."

She said it would be helpful to clarify what "certain times" means for whooping cranes. Rabbe said that short structure would be a byproduct of other management actions. This statement provides a flexible definition to provide short vegetation structure for whooping cranes when its advantageous while still allowing benefits to other species of concern and general grassland health. Rabbe suggested a minimum goal for PRRIP other species of concern should be to have at least maintained, and preferably improved, grassland diversity and native species composition from the time PRRIP took over management. Walters said the idea was to be flexible so management can be tract specific. Farnsworth said current management framework looked at all grassland and managed for 25% short vegetation structure. We do not have lots of whooping cranes using grasslands, but we likely have grassland-based species that will be listed under ESA in the near future. The Program could pivot now to broaden our management for these species before regulations are mandatory. Hegg said that the objectives do not include language about woody encroachment. She suggested adding this description to make actions against woody vegetation explicit. Rabbe agrees and will add in language to state this in the grassland management document. Farnsworth said sites will be managed individually with unique objectives depending on their unique features. Jenniges said he will add language about woody encroachment to the document. He will send it to coauthors and Hegg for review. Rabbe asked if TAC is on board with that change, and if so, is TAC ready to recommend the document to the GC?

TAC MOTION: *Ostrom moved, and Hegg seconded a motion to recommend the Grassland Management Guidelines (pending above noted addition of language to address woody encroachment) to the GC.* Motion carried.

Rabbe said the Grassland Management Working Group decided on Cottonwood Ranch and Shoemaker Island to develop specific 5-year management plans for each complex in 2025 to start in 2026. The idea is to take a couple of properties and go through the same process each year. Tunnell said we need to have recommendations by end of summer or early fall to provide tenants information for the next year. Zorn suggested that group meet early in January to put together a process and timeline for getting those plans for Cottonwood Ranch and Shoemaker Island complexes final for the July TAC. Farnsworth said the GC will need confirmation that management for other species of concern will not take resources away from target species. Rabbe/Jenniges said the focus will be on providing benefits if other species are listed as threatened or endangered. Farnsworth said involvement and support by the states will help to provide credibility to process. Lawrence said Wyoming's Michelle Hubbard is on the working group. Zorn asked if LaGrange was on the working group for Nebraska. LaGrange is on the larger working group, but not directly involved in drafting management plans.

EDO ACTION ITEMS:

- Forward revised TAC recommended document to GC for December meeting.
- Invite the LAC to the July TAC meeting to approve grassland management plans that should be final by July so tenants can be notified.

TAC ACTION ITEMS:

- Jenniges will revise document language to include management of woody encroachment and send to coauthors and Hegg.
- Grassland Management Working Group will meet in early January 2025 to set process and timeline for CWR and Shoemaker Island management plan development, TAC/LAC review, GC approval.

Initial Draft Document: 15_PRRIP grassland working group general management guidelines_080924
Revised Draft Document: 15_PRRIP grassland working group general management guidelines_10.24.24

SCIENCE PLAN/WATER

2025 Germination Suppression Release

Henry began the discussion by saying she put this Germination Suppression Release item on the October TAC agenda as it is the time of year when the EA-RCC, WAC, and TAC meet to make plans for next year, including drafting the Environmental Account Annual Operating Plan. Germination suppression releases have been made since 2020, providing five years of data through magnitude, duration, and timing have varied. When the Adaptive Management Working Group put the Science Plan together, we were expecting to be out of water by 2025, necessarily setting up a contrast to implementation that we could learn from, though the idea of intentionally avoiding germination suppression was never proposed as a management action. That has turned out not to be the case. The purpose for the discussion today is to let the TAC weigh in on the pros and cons of continuing to implement June germination suppression releases. She asked the TAC to think about the learning potential for both options and to voice concerns about risks. Last week at the EA-RCC meeting the Service voiced their concerns, so Henry asked Rabbe to catch everyone up with Service thoughts on the matter. Rabbe said the Service is concerned about halting actions beneficial to the species. They have observed the benefit of flows for keeping channels wide and unobstructed, so halting actions could degrade channel conditions that could not be re-gained in absence of a peak flow, which may not happen for the remainder of the Extension. If conditions were degraded, it could limit the amount of suitable roosting habitat and make the AHR less desirable as a stopover area for whooping cranes. This could impact other science questions regarding whooping crane use of the AHR that are ongoing. The Service is also concerned about our ability to remove vegetation once established in the absence of the germination suppression release. Rabbe said we have worked really hard to get control over *Phragmites* and there is concern that stopping June releases, especially if 2025 is a dry year, could undo what we have gained. Ostrom mentioned that this discussion about halting releases for germination suppression along with the decision to stop sediment augmentation by the GC, while the TAC was still discussing options and before the TAC had an official recommendation to give to the GC, is coming across that the EDO is trying to justify not spending money on seemingly beneficial actions. Ostrom said the role of the TAC is to ensure that the Program provides benefits to target species. Farnsworth said the role of the TAC is to participate in the development and review of implementation of the Science Plan. Rabbe disagreed reminding the TAC that the Program's primary purpose is to provide defined benefits to the target species. Rabbe said the current plan as written in the draft AOP is to give germination suppression flows highest priority for 2025. Zorn asked about the volume of water typically used for germination suppression. Turner said 77,950 acre-feet was used for germination suppression and 35,000 acre-feet for spring whooping crane release in 2024. Farnsworth said with the present dry conditions, he estimates we would use 80,000 -100,000 acre-ft for germination suppression in June of 2025. Rabbe said germination suppression and WC release during migration would use most or all water in the EA account during 2025. The Service has not decided on a whooping crane release for 2025 yet. Farnsworth said he is beginning to hear a push-pull between managing the river and learning about river processes and options for providing species benefits. Zorn asked what was the original timeline for learning about germination suppression? Henry said Science Plan had implementation through 2024 with multi-year evaluation of effectiveness in 2024. The EDO is currently working on data compilation and initial options for analysis. EDO will ask the TAC for a working group to develop a data analysis plan. We originally planned for a continue/stop/alter implementation decision

for 2025. Ostrom and Rabbe said the germination suppression flows are working, but we need a way to confirm that and communicate that to the GC without a full germination suppression evaluation that will take a couple years to complete (something for the interim). Rabbe said the primary purpose of the Program is to provide defined benefits, if science can aid in providing benefits, great. If suppression flows are known to provide benefits, we should keep doing it. Ostrom pointed out that in the same way there is "uncertainty" that germination suppression flows are the reason for success during years of the flow releases, there will be the same uncertainty that not doing releases will be the reason for *Phragmites* channel suppression. Quinn agreed saying we would need 40+ years of both to have definitive answers given all the variability from year to year. Ostrom said the apparent risk of halting releases is difficult to agree to with the uncertainty of the results, while we can still learn by continuing something seemingly beneficial for the river. Farnsworth said he is hearing a possible shift from active learning to passive learning if germination suppression flows are just continued to provide benefit for whooping cranes. Smith said he would like to hear more discussion on how we communicate this type of shift to the GC. Farnsworth said conditions and other factors may create a no release year in the near future anyway. He mentioned the need for Central to do structural repairs, though it is unclear when this might occur. Walters would like the Program to differentiate where the benefits to the channel come from in terms of flow, mechanical, etc. He wants to see more summary information on what we have learned thus far in terms of what natural high, peak flows do in terms of work creating suitable channel conditions. He does not want to lose sight of the necessity of high, peak flows for channel widening that is maintained by germination suppression flows. Those flows do a lot of work that the Program cannot. Farnsworth said the EDO could put together some kind of a review or summary document rather than a full synthesis document that was reviewed in the past.

EDO ACTION ITEMS:

- Develop a data analysis plan for evaluating germination suppression effectiveness together with the TAC.
- Put together a document summarizing the benefits of high, peak flows and germination suppression flows and putting them both into context.

TAC ACTION ITEMS:

- FWS will present their 2025 EA-AOP with priority given to germination suppression at the WAC next week.
- Consider participants for a TAC working group to evaluate effectiveness of germination suppression releases for channel maintenance.

FY2025 SCIENCE BUDGET

EBQs Reframe

Henry and Farnsworth described the reframe document as a way to remind stakeholders why the Extension Big Questions were prioritized for learning. The document summarizes the question and hypotheses together with the information they are expected to generate for decision-making. The link between science learning and information needed for Second Increment negotiations is made. A status update on where we are at in terms of learning for each question is presented from the EDO's perspective, the TAC's perspective, and the ISAC's perspective. This document was sent as a read ahead in preparation for the Science budget discussion because it is important to know why we are doing the science, what information it generates for the Program, and the estimated costs.

Document: 16_EBQ Reframe 9_25_2024

2025 Draft Science Budget and Work Plan
Henry went over each line-item in the Draft Science Budget with explanations for estimated costs according to the Work Plan. She noted items relevant to Program Science that have now been moved into the Land Plan budget (in green) because they are directly related to management of target species habitat. She explained increases in costs as well as where costs had decreased in comparison to the 2024 Science Budget.

LP2-P Trapping Projects: Rabbe asked the EDO for their opinion on the effectiveness of the trapping efforts. Henry said we were unable to trap problem species this year, though a lot of effort was put toward trapping. Trap effort was consistent with other years, but Henry would like to see more focus of effort closer to sites and use of different species-specific trap types based upon site knowledge. This is our first line of defense against predators, so we need to adapt with them. Farnsworth said you could probably expect productivity to decrease by half without trapping. Jenniges said that of all the money the Program spends, this is probably worth it. Henry said part of what they are planning for 2025 is a pre-season meeting with the trapper to reduce efforts along the river further from nesting sites and focus more on intensifying trapping and diversifying trap types closer to the nesting sites. Jenniges agreed. Henry said the trapper will work with Biologist responsible for each site to adapt tapping effort to what is observed at the site through the season (putting in leg holds and snares accordingly). Part of reduced cost for 2025 is due to reduced travel expenses because the trapper will be staying at Bartel's cabin during trapping season. With fewer travel hours each day, the trapper will have more time and flexibility to meet specific requests. Rabbe said the effectiveness of this effort will be something the GC will want the EDO to address given the high cost.

WP-1(b) *Phragmites* Control: Walters said the Platte Valley Weed Management Area (PVWMA) would like to request the GC approve $300,000 toward *Phragmites* control in 2025. The Program contributed $300,000 in 2024 because state Ag Department grant was not awarded. Walters said they will be in a similar situation in 2025. Walters said he would bring this to the Finance Committee as well. Jenniges and Rabbe were in favor. Jenniges said we need to do a better job of telling the *Phragmites* story. It is our number one tool for maintenance of channel width. Walters updated the TAC on Provine's helicopter crash this fall that set efforts back a bit. Farnsworth said there are concerns about the ability to get spraying done over the entire reach each year with weather and timing limitations. He has also heard concerns about fatigue in providing state funds for this effort. This is something the PVWMA should expect to hear when asking for more funds from the Program.

TP-1 Tern & Plover Monitoring and Research: The TAC expressed no concerns over proposed budget for this line-item for 2025. Rabbe said he would like to have a discussion in 2025 at the TAC level over the value vs. effort of conducting river surveys. Rabbe needs to look further into Program obligation to conduct this monitoring effort. Henry said she sends out proposed agenda items well in advance of quarterly TAC meetings. She asked that the Service put this item on the agenda when they are ready to discuss it.

WC-1 Whooping Crane Monitoring and Research: Henry noted an error in the Work Plan. The Work Plan allocates $136,700 to WC-1, whereas the Budget spreadsheet allocates $156,700. The total for WC-1 for 2025 is estimated at $156,700. The additional $20,000 comes from the additional cost estimated to purchase high resolution global satellite imagery covering the extent of the whooping crane telemetry

dataset. This imagery will be used to assess river conditions across the Nebraska sand bed rivers included in the dataset. Walters suggested the EDO check out LENS for sourcing imagery.

G-5 Geomorphology & Vegetation Monitoring and Research: Rabbe, Walters, Zorn, Jenniges said they would like to see an evaluation of *Phragmites* response to flow using the data already collected from 2022-2024 prior to spending $350,000-400,000 to collect more data. The TAC asked when a deliverable would be ready for the TAC to review. Henry said data collection for October is still ongoing. Farnsworth said the EDO would not have a deliverable ready by December for the January TAC, which is when a go/no go decision would need to be made so we could advertise, select, and get started by April of 2025. Jenniges said the monitored patches are still out there, so you could skip a year and go back to them later on to document change from 2024 monitoring. The TAC supported discontinuing the study for 2025 while the EDO analyzes the data collected from 2022-2024. Jenniges said he would like to see the $367,000 allocated to Phragmites research go toward supporting PVWMA herbicide application efforts. Walters agreed.

Jenniges mentioned that he would like the EDO to show timelapse images at TAC meetings to help document how vegetation responds to channel inundation at various locations. The TAC supported continuing Grassland Vegetation Surveys in 2025. No new properties/transects will be added in 2025, so effort should be similar to 2022. Jenniges said he is okay with the effort staying the same for 2025, but he would like to re-evaluate the protocol and decrease effort, maybe change the frequency of this effort to 5-year increments instead of 3-year increments. He asked that this be added to the TAC agenda for discussion in 2025.

ISAC-1 ISAC Stipends & Expenses: EDO proposed a single in-person ISAC meeting in September of 2025. Thus, there would be no Reporting Session in February. The EDO would like to get the ISAC involved early in the year on providing guidance on Program science priorities and technical issues as a way of priming them for a September in-person meeting. Mosier said she saw value in having the TAC interact personally with the ISAC. Farnsworth said the September meeting will provide this opportunity. Smith said he hopes that the early and regular interactions through the year will help us take even greater advantage of the large group of smart people in the room in September. Smith also reminded the TAC that 2025 will be Marmorek's last year on the ISAC, so we will need to start the process of selecting a replacement.

EDO ACTION ITEMS:

- Revise 2025 Science Budget and Work Plan incorporating TAC feedback
- Put LTPP River Surveys up for discussion on TAC agenda in 2025
- Put Evaluation of Germination Suppression, *Phragmites* control efforts, timelapse camera imagery, and Grassland Vegetation Survey protocol on TAC agendas for 2025

Document: 17_FY2025PRRIP Science Budget
Document: 18_FY2025 PRRIP Science Work Plan

TAC MEETING REVIEW & WRAP-UP

MOTIONS

July 2024 TAC Meeting minutes approved.
No Augmentation Monitoring Plan recommended to the GC.

Grassland Management Guidelines recommended to the GC.

2025 TAC Meeting Schedule

- First quarterly meeting of the year: February 4-5, 2025
- Henry will propose dates for April-May, July, October meetings for TAC consideration
- Quarterly meetings will continue to be held over two consecutive ½ days.
- April/May meeting will be held near the Denver airport
- For July TAC meeting, invite the LAC to the meeting to approve grassland management plans that should be final by July so tenants can be notified. A meeting of the Grassland Management Working Group will be scheduled for January to put a process and timeline in place for developing two management plans in 2025, one for Cottonwood Ranch and one for Shoemaker Island.

TAC MEETING END

The TAC meeting adjourned at 11:22 AM CT.