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

Technical Advisory Committee (TAC) Virtual Meeting
Wednesday, July 13, 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

State of Colorado
Emily Zmak – Alternate

State of Nebraska
Caitlin Kingsley - Member

Upper Platte Water Users
n/a

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

Bureau of Reclamation (Reclamation)
Brock Merrill - Member

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

Environmental Entities
Rich Walters – Member
Andy Caven - Member
Melissa Mosier - Alternate

Colorado Water Users
Jason Marks - Member

Executive Director's Office (EDO)

Jason Farnsworth, ED
Chad Smith
Malinda Henry
Tim Tunnell
Patrick Farrell
Mallory Jaymes
Kaley Keldsen
Kari Mohlman
Jonathan Wentz
Michael Steele
Malia Volke
Sarah Hinshaw
Justin Brei
Ed Weschler
Seth Turner

Other Participants

Jean Eichhorst – NE DNR
Kevin Urie – CO Water Users
Michelle Koch – NGPC
Joel Jorgensen – NGPC
Melissa Marinovich – NGPC
Bethany Ostrom – Crane Trust
Abraham Kanz – Crane Trust
Sarah Sonsthagan – UNL, NE Cooperative Fish and Wildlife Research Unit

WELCOME & ADMINISTRATIVE

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

AGENDA MODIFICATIONS

No modifications offered.

07-13-2022 PRRIP TAC Meeting Agenda

MINUTES

No corrections were offered for the April 13, 2022 TAC minutes.

TAC MOTION: *Walters moved and Zorn seconded to approve the April 13, 2022 TAC Meeting minutes.*

Minutes approved.

04-13-22 PRRIP TAC Meeting Minutes FINAL

LAND

Platte River Recreation Access (PRRA) Program

Rabbe gave an overview of items discussed by the LAC for including Leaman off-channel sand and water tern and plover nesting site in the Recreation Access Program and opening the site for fishing outside of tern and plover nesting season as a one-year pilot. He summarized rules and regulations and general timeline envisioned for public access fishing at Leaman. Henry then summarized predator research being done at Leaman to address Extension Science Plan Big Questions about the impacts of predation on plover productivity and the effectiveness of predator deterrent lighting at mitigating those impacts. She suggested the Program follow the Science Plan Implementation Timeline by gathering information on current predator management over the next two years without adding a potential conflicting variable (removal of predatory fish). If fishing were open to the public Henry would like to quantify any resulting change in the fish community and corresponding plover chick success to determine if predatory fish like large-mouth bass pose a significant threat to plover chick success. Rabbe suggested three alternatives:

1) Fishing outside tern and plover nesting season following statewide regulations
2) Above option but with catch and release requirements for everything but panfish.
3) No fishing for this year.

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. Program research focuses on mammalian and avian predators, so fishing will not interfere. If you want to eliminate the potential for plover chick predation by bass, rotenone the entire pond. Bass are not a threat to plover chicks. Walters and Jenniges agreed. The TAC was in favor of option 1) above: opening Leaman to public access fishing using statewide regulations. No catch and release regulations are necessary. 1-year decision pending results. Rabbe mentioned that Nebraska Game and Parks (NGPC) was open to the possibility of shocking the pond to do a fish community survey. Rabbe also mentioned the potential for stocking fish, even if just panfish for fishing in the future. Jenniges stated that this should be a NGPC effort, not a Program effort. Zorn suggested the site open September 1st, not August 15th, to avoid any conflicts with tern and plover use of the site. Rabbe said they could invoke a local site closure if terns and plovers were still on the site for some reason. Jaymes asked if access would be limited to the shoreline. Rabbe said yes; no peninsula access, no boats allowed.

TAC RECOMMENDATION: *Open Leaman OCSW for off-season fishing under statewide regulations.*

WATER

Germination suppression flow release

Turner gave a brief summary of the June 2022 EA release to suppress germination of vegetation in the channel. Flows at Grand Island were at or above the 1500 cfs target for 18 days between June 1 and July 1, with average flow at 1521 cfs for the month. Coordination efforts twice a week helped to make the release run more smoothly. Jenniges asked how the percentage of the release that was EA water was calculated. Turner said DNR does that using a PWAP model. Farnsworth asked to explain how water was routed later in the season after irrigation releases began. Turner said that in mid- to late-June, as irrigation demand increased, water originally released as EA water was reclassified as irrigation water. The chokepoint puts a cap on the total amount of water that can pass without exceeding flood stage. The Service has a margin of comfort 200 cfs below that flood stage limit which further reduces the total amount of water that can be released. So, when irrigation demand from a limited supply goes up, water originally released for EA objectives (GS Release) has to go toward irrigation. Jenniges asked what channel coverage we achieved with the water. Farnsworth said we will know more when we get the imagery, but he suspects coverage will be less than ideal at Rowe due to a flow split. He said the Program may be able to do something about this since the flow split begins on the Wyoming tract. Caven mentioned that Mormon Island has the same problem, so if the Program is able to do something to improve it at the Wyoming tract, maybe the same method can work at Mormon Island. Farnsworth said any results will be shared and can collaborate to help fix issues.

EDO Presentation: 03_Germination Suppression Flow Release Summary

Determining water need through the choke point

The GC had an extensive discussion about the choke point at their June meeting. The EDO believes the only sure shot in solving this problem is a bypass canal going around the choke point. However, because of multiple landowners, eminent domain would probably have to be invoked to get a bypass. Program and local stakeholder do not support the use of eminent domain. The suggestion was made to consider what incremental increases in chokepoint capacity could be made through multiple smaller projects. The GC also asked if 3000 cfs was necessary to achieve Program objectives. Farnsworth introduced a policy framework document the EDO is developing for the GC that outlines the Extension Science that will be done to gather information to answer this question. The Science Plan research questions are designed to quantify the bang for buck the Program gets out of flow (cfs) through the choke point. Program science will generate information to evaluate tradeoffs. The EDO will go back to the GC in September with this policy-level framing document to help outline how the Science Plan gathers information to help answer the 3000 cfs question. Caven said VESPR's efforts on the chokepoint are designed to widen the participants and perspective on this issue, including a social science effort to get information from local residents about their perception of risk and topics of interest for them. The technical study should be completed by the end of 2022, but then will go through external review. The social study should be written up by the end of 2022. Looks like there is lots of interest from locals in recreation access.

TARGET SPECIES

2022 Plover and tern monitoring and predator management update

Mohlman gave a brief mid-season summary of nesting and losses at OCSW sites thus far. Losses to hail and to a wider array of predators this year have reduced productivity after a good start to 2022. Flyr asked if any cameras were lost to storms this year. Keldsen said three trail cameras were broken by hail, no video cameras were damaged.

EDO Presentation: 04_LTPP Update

Spring 2022 WC monitoring report
Jaymes introduced changes to the WC monitoring report for TAC consideration and feedback. She also gave a summary of Spring WC use of the AHR including channel width metrics and flow associated with use locations, proportion of the AWB population using the AHR, and crane use days. She noted the distribution of use across the AHR, including use of the new Chapman complex to the east. She also mentioned that FWS has provided an updated AWB population estimate of 543 WC from the 2021-2022 winter survey. These estimates come with wide confidence intervals and should be expected to increase next year as additional survey areas are added. Zorn asked about the reporting of flows beginning on March 1st in the report when Program monitoring begins on March 6th. He suggested that be corrected together with the associated minimum and maximum flow values to make sure they occurred within the monitoring period.

EDO Document: 05_Implementation of the WC Monitoring Protocol – Spring 2022 Draft w TAC revisions
EDO Presentation: 06_Spring 2022 WC Report

Corrections to the report:
Section on whooping crane use in response to flow included in figures and reporting of minimum and maximum flow values that should be limited to Program monitoring period from March 6 through April 29. These corrections have been made by the EDO (see link above for corrected report).

TAC MOTION: *Rabbe moved and Jenniges seconded to recommend the Spring 2022 WC Monitoring Report be forwarded to the GC for review.* Motion approved.

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. A small group of WC experts met in June to look at WC telemetry data to make suggestions for the scale for this analysis. She briefly explained that the analysis compares use sites from aerial monitoring data 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 and would like TAC feedback on the following:

1) Scale for the available choice set
2) Scale for the habitat buffer
3) Point- vs. area-based in-channel metrics
4) Number of random available points

Farrell presented methods and results using telemetry data to inform the scale for the choice set and the habitat buffer that support EDO suggestions for the analysis. Caven asked if the EDO had done any spatial autocorrelation analyses for variables of interest. Farrell said not yet, we have not gotten our explanatory variables nailed down yet. Feedback from Flyr and Caven: Performing the analysis at multiple scales may be useful for understanding the importance of landscape features at different scales. Model selection process will tell you which scale is best. Alternative types of analyses that do not compare use to available locations were also suggested by Flyr, Caven and Jenniges, including 1) using telemetry data to compare the habitat associated with an 8-mile deviation distance from original flight path prior to selecting a use location (habitat flown over but not selected for use) vs. habitat associated

with a 2-mile or less deviation distance (habitat flown over and selected for use), and 2) develop a heat map that demonstrates the distribution of WC use over the AHR to obtain information about habitat characteristics WC use. Henry said these alternatives have been noted as options to provide multiple avenues of support, but do not replace this resource selection analysis as it adds data to prior analyses to evaluate selection criteria through time. The group discussed the EDO suggestion for using the median 0.41 miles as the habitat buffer around use and available locations. Caven preferred using the mean 0.77 miles as the buffer for evaluating landscape, which is the same scale Niemuth et al. supported as an appropriate habitat buffer. Rabbe supported the inclusion of side channels as available habitat for the choice set as side channels have been used by whooping cranes in the past. Henry said the smaller group had discussed using area-based metrics to capture heterogeneity for in-channel measurements, but that was prior to obtaining the information from telemetry showing that most whooping cranes use only a radius of a 0.1 mile in-channel around their roost location during the first 24-hour period at a stopover. Average values of area measurements based upon multiple measurements over this small scale are also problematic due to spatial autocorrelation. Farnsworth mentioned that at this scale, heterogeneity would be minimal for in-channel metrics making area-based measurements no more informative than point-based measurements. The TAC then discussed the number of random points to compare to use locations. Twenty random available points will maintain consistency with previous analyses.

TAC RECOMMENDATION:

1) Scale for the available choice set – test multiple scales; include side channels in the available choice set
2) Scale for the habitat buffer – 0.77 mile radius around each use/available location
3) Point- vs. area-based in-channel metrics - point-based in-channel metrics (adding area-based proportion open water and proportion of active channel unobstructed by vegetation), area based landcover metrics
4) Number of random available points – 20 random points

EDO Document: 07_WC Riverine Roost Site Selection
EDO Presentation: 08_WC riverine roost site selection

Pallid sturgeon habitat, spawning, and genetic research

Henry gave an update on PS research on the Platte. UNL/NGPC crews have tagged or detected 28 pallid sturgeons in the Platte thus far. Daily, active tracking ran through the end of June to follow spawning and post-spawning behavior. Spawning suspected at the Elkhorn confluence with the Platte in early May. Larval sampling downstream of the site and at the Missouri Confluence until end of June. Still processing samples, but Pegg doesn't think any larval sturgeon were collected. Monthly sweep samples from Columbus down to the confluence will continue to look for any tagged pallids still in the system. Passive telemetry receivers also in place from the Loup down to the Missouri confluence. Several pallids have used the Elkhorn this year and didn't descend until late June. Most upstream detections of pallid sturgeon in the Platte River thus far were 4 pallids registered on a passive receiver at Leshara.

Development of GT-seq primers and protocol is underway, being carried out by Matthew Campbell of GT-Seek. Currently validating correct species identification based upon developed primers using GT-seq using 96 previously genotyped samples. Troubleshooting to get to a final panel of loci that produce reliable data for species identification using the new GT-seq technology. Fin clips from 16 pallid adults

and juveniles collected by the UNL team this year are currently being genotyped in Heist's lab using older microsatellite markers to identify species and parentage (wild or hatchery). Results expected by end of July. PhD student from China scheduled to begin work in Heist lab on August 1st.

Jenniges asked how spawning could be confirmed if no larval sturgeon were collected. Henry and Farnsworth said spawning behavior was observed, aggregations of adult fish exhibiting up and down movements typical of spawning. This included a known mature, reproductively ready male UNL had tagged.

PHRAGMITES

2022 Phragmites pilot study

Volke gave an update on experimental design, sample locations, data collected, and timeline for continued data collection through 2022. Rabbe asked what the timeline for the study was. Henry said 3-6 years with iterative evaluations at the 3- and 6-year points to check in and adjust as necessary. Walters asked if collecting data on the kill period after spraying and which patches were active or regrowing after herbicide application. Volke said the repeated sampling will get this information. Caven asked if there was an effort to balance the design with regard to disking. River becomes more sediment balanced as you move west to east. Disking may have a different effect depending upon sediment balance and your only disked site is on the eastern Chapman complex. What are plans for disking at other locations moving forward? Volke said including the disked site at Chapman was taking advantage of disking done prior to study initiation and learning how *Phragmites* responds, but no pre-disk data for Chapman. Disking at this site was not directly targeting *Phragmites* in the same way that herbicide treatments are applied. Farnsworth said we can incorporate any area disked into the evaluation as a variable. Rabbe asked how to deal with the germination suppression flow release as a variable? Volke said the water surface elevation data collected on site in conjunction with patch locational data will get at this. Remote sensing data will also be able to get at this. More precise answers may be best obtained in a greenhouse study. Rabbe asked what the potential effect of this study, specifically not spraying Phragmites in non-spray zones, might be on the effectiveness of inundation flow releases. Farnsworth says we will continue to discuss and develop an analysis plan for separating these effects.

EDO Document: 09_Phragmites Study Update
EDO Presentation: 10_Phragmites study update

SEDIMENT AUGMENTATION

2022 Sediment augmentation work plan

Weschler presented a brief overview of sediment augmentation since 2017 (including cut and augmentation areas and sediment volumes) and the plans for sediment augmentation for fall 2022.

EDO Presentation: 11_2022 Sediment Augmentation Work Plan

Sediment augmentation evaluation plan

Hinshaw introduced herself as a new member of the EDO staff working to evaluate the effectiveness of sediment augmentation to slow or prevent channel incision at the J-2 return from propagating downstream to negatively impact WC roosting habitat. She talked briefly about her initial plans to understand the problem and how it has evolved over time. She is currently working to gather and organize the data and background information collected by the Program for review. She has been

looking at historical aerial imagery to identify channel changes over time. She presented an initial look at changes in relative elevation (data obtained from the reach wide monitoring efforts) to visualize, interpret, and quantify channel response to sediment augmentation. She proposed evaluation of channel degradation and aggradation, slope, and channel width over time as variables of interest for evaluating effectiveness of sediment augmentation.

EDO Presentation: 11.5_ Sed Aug Evaluation Plan

STAKEHOLDER SCIENCE

A proposed investigation into the genomic connectivity, metapopulation dynamics, and adaptive capacity of Northern Great Plain's Piping Plovers

Jorgensen gave a brief overview of a proposed genetics project to obtain information about metapopulation connectivity and genetic diversity corresponding with environmental variables. Along with samples from other breeding locations, the project proposes capture and genetic sampling of plovers on Program OCSW nesting sites. The project counts on collaboration with Sarah Sonsthagen from UNL, NE Cooperative Fish and Wildlife Research Unit. Henry asked if non-capture, non-invasive sampling was an option. Sonsthagen said no, genomic study would rely on saliva for cleaner sampling. Zorn asked about sample size. Sonsthagen said 20 individuals sampled once per location, with the lower limit being 10-15 individuals. Henry asked if that meant 20 from the central Platte or 20 from each nesting site. Jorgensen said the plan was to sample 20 individuals from Lake McConaughy down through the central Platte as a breeding unit.

Refining abiotic-biotic relationships in wet meadows

Kanz presented his collaborative work with Oklahoma State University and the Crane trust to examine the relationship between the macroinvertebrate community, abiotic factors, and restored, reconstructed, and relict wet meadows. Farnsworth asked if the 79 sites were sampled repeatedly over the 3-year study. Kanz said no, only once. Depth to water was the only variable collected three times during May to July for each of the 79 sites. Farnsworth asked about the diversity index chosen for the study. Henry asked about how to interpret the overlap in the macroinvertebrate community structure among restored, reconstructed, and relict wet meadows. She suggested including data from outside a wet meadow for comparison.

Presentation: 13_ Refining relationships in wet meadows

PROGRAM SCIENCE PRESENTATIONS

Henry informed the TAC of EDO participation in the following conferences and meetings presenting Program science.

- Conservation Nebraska – May 23, 2022, Kari Mohlman, Plover monitoring and management by the Program, https://www.youtube.com/watch?v=VDiua3sSc88
- Geological Society of America – Oct 9-12, 2022, Patrick Farrell, Predicting the ability of river flow to maintain suitable channel conditions for whooping cranes
- Natural Legacy Conference – Oct 11-13, 2022, Jonathan Wentz, Plover monitoring and research
- Platte Basin Conference – Oct 24-27, 2022
    - Patrick Farrell and Mallory Jaymes, Whooping crane selection of the central Platte River Valley: roost site characteristics and factors related to stopover decisions

- Kristen Cognac, Quantifying hydrologic constraints on a wet meadow restoration along the central Platte River, Nebraska, USA

TAC MEETING REVIEW & WRAP-UP

This being Andy Caven's last meeting with the Program, he announced Melissa Mosier as taking his place representing the Environmental Organizations as a voting member on the TAC. Bethany Ostrom will serve as the alternate. Rich Walters continues as a voting member and Brice Krohn as an alternate.

Action Items:

- EDO will work together with FWS and NGPC to get Leaman OCSW into the PRRA Program and open for public fishing on September 1st, 2022.
- EDO will further develop a framing document to outline how the Science Plan gathers information to determine how much water is needed through the chokepoint each year. The EDO will go back to the GC in September with this policy-level framing document.
- EDO will make the indicated corrections to the Spring 2022 WC Report and forward to the GC for review at their September GC meeting.
- EDO will evaluate the potential for multiple scales of analysis for the WC roost site selection analysis and move forward with the analysis following the recommendations noted above.

Future calendar events:
September 13-14thGC Quarterly Meeting in Kearney, NE (planned gatherings for retirement send-offs)
September 15-16th ISAC Onboarding Meeting in Kearney, NE
October 12th TAC Quarterly Meeting in Kearney, NE
Feb 14-16th, 2023 Science Reporting Session in Omaha, NE

TAC MEETING END

The TAC meeting concluded at 4:15 PM Central Time.