

**PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM (PRRIP -or- Program)****Technical Advisory Committee (TAC) Virtual Meeting**

Wednesday, January 18, 2023; 10:00 AM - 5:00 PM CST

*Meeting held virtually 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

Emily Zmak - Alternate

U.S. Fish and Wildlife Service (Service)

Matt Rabbe - Member

State of Nebraska

Caitlin Kingsley - Member

Environmental Entities

Rich Walters – Member

Amanda Hegg - Member

Carrie Roberts – Member

Melissa Mosier – Alternate

Bethany Ostrom – Alternate

Upper Platte Water Users

n/a

Colorado Water Users

Jason Marks - Member

Downstream Water Users

Jim Jenniges – Member

Dave Zorn – Member

Brandi Flyr – Member

Mike Drain – Alternate

Executive Director's Office (EDO)

Jason Farnsworth, ED

Chad Smith

Malinda Henry

Tim Tunnell

Patrick Farrell

Mallory Jaymes

Kaley Keldsen

Michael Steele

Jonathan Wentz

Seth Turner

Jason Bruggeman

Sarah Fancher

Ed Weschler

Helen Davis

Other Participants

David Baasch – Crane Trust

Jean Eichhorst – NE DNR

Joel Jorgensen - NGPC

Melissa Marinovich – NGPC

Mike Archer – NE DNR

**WELCOME & ADMINISTRATIVE**

Merrill called the meeting to order at 10:02 AM Central Time.

AGENDA MODIFICATIONS

Henry asked to insert a brief conversation into the TARGET SPECIES section on Whooping Cranes to receive TAC feedback and guidance on information to be included on bids submitted for whooping crane monitoring through remotely operated drones.

[01 01-18-2023 PRRIP TAC Meeting Agenda](#)**MINUTES**

No modifications offered.

TAC MOTION: *Walters moved, and Zorn seconded to approve the October 12, 2022, TAC Meeting minutes. Minutes approved.*

[10-12-22 PRRIP TAC Meeting Minutes FINAL](#)**OFFICER ELECTIONS****TAC Chair and Vice Chair Nominations and Election**

Zmak nominated Scheel for Chair. Marks, Rabbe, and Zorn reinforced this nomination. Rabbe was nominated as Vice Chair. Merrill suggested an annual rotation of the TAC Chair with Walters on-deck as Chair for next year (2024).

TAC MOTION: *Marks moved, and Jenniges seconded to elect Scheel as the 2023 TAC Chair and Rabbe as the 2023 TAC Vice-Chair. There was no opposition to the motion, and the motion was passed.*

TAC MEETING FORMAT**New Format for TAC Meetings**

Farnsworth and Henry introduced the idea of providing more time and space for TAC direction of and input on TAC meetings and Program science. With the approval of the Extension Science Plan, there is a lot of new science implementation that would benefit from more TAC involvement and active participation throughout the process. The EDO is suggesting a change to the format of TAC meetings to encourage more collaborative efforts to bring TAC technical experience into science planning and evaluation. This includes: stakeholder led, EDO facilitated TAC meetings; TAC members providing input on meeting agendas and topics for discussion; full-day TAC meetings held at least quarterly with more time scheduled for technical discussions; TAC workgroups assembled to pull in TAC technical expertise to develop study and evaluation plans; and written TAC feedback solicited on products. Walters also mentioned documentation of TAC member voting on motions, yea or nay, with TAC minutes documenting any minority opinions. Rabbe said it was important to know when a formal recommendation from the TAC is needed and when it is not. Farnsworth suggested we run through this meeting organized to encourage TAC participation (though being held virtually due to weather) and check in at the end of the meeting for feedback and suggestions for moving forward.

**RELEVANT SCIENCE ONBOARDING***Science Onboarding Framework*

Smith provided a summary of proposed framework for onboarding non-Program science into Program learning and when appropriate into decision-making. Drain said he likes the idea of defining a process but was unsure about whether it is the role of the TAC to direct the ISAC to review non-Program science or whether that should come from the GC. His suggestion was for the TAC to make a recommendation to the GC, and the GC to ask for ISAC review if they deem warranted. He said the TAC should consider the information provided by non-Program science but does not want to encourage the development of outside science that could be used to influence the Program's Big Questions or push policy. Baasch expressed concern regarding the Program's harsh review of or disregard for non-Program science which has the purpose of filling information gaps. Walters said the onboarding framework is way to incorporate and understand non-Program science, collaborating through the TAC to move it up to the GC for consideration. He sees it as a step forward to make sure the Program understands external science and know how to use the information it provides. Zmak said that non-Program science should inform Program objectives and Science Plan questions but not change Program direction or agreed upon Program objectives. She asked about the timing of onboarding, how often the TAC will be asked to review non-Program science. Smith and Farnsworth said the TAC will be asked to review in a timely manner as items are produced through a standing agenda item at quarterly TAC meetings. The EDO can also provide an annual wrap-up. Rabbe asked how to decide what gets brought to the TAC and how far back to go. He suggested we open up the dialogue bringing anything deemed as relevant to the TAC for discussion and letting the TAC decide where it goes next. He suggested the first step should be with the TAC, not the EDO. Jorgensen mentioned that some of the hesitation to bring non-Program science to the Program has to do with the tone of EDO review of these efforts which has alienated partners in the past. Jorgensen asked why the EDO needs to prepare a summary for the TAC. Farnsworth said selected papers for EDO critique have stemmed from the Service deeming them as best available science, which makes it in the Program's best interest to review and bring these items in. Jorgensen reiterated that the process should begin with the TAC, letting the TAC decide where to go from there. Baasch suggested that the TAC be active in onboarding as well, not just the EDO. Rabbe said there is value in an open dialogue recorded in the TAC minutes, not always going to agree. He said the role of the TAC is to help define what is and is not relevant, what information the Program can use, but not in approving or defining "best available science". Farnsworth agreed that this is not a "best available science" discussion. He would like the TAC to consider data used, methods, variables, and what can be incorporated in the Program's structured decision-making process to increase predictive capacity of models that evaluate potential implications of management actions. For example, using the Rainwater Basin Joint Venture landcover product in our whooping crane roost site selection analyses. Use the tools available but leave the discussion or interpretation to the authors. Walters suggested relevant literature be brought first to workgroup of TAC members with experience in a relevant topic area that could include EDO staff to write a summary. Farnsworth reminded that the Adaptive Management Working Group had such technical expertise. Rabbe preferred going through the full TAC first, allowing the TAC to assign a subgroup to evaluate in more detail and write a summary that would be provided for full TAC discussion as necessary. Baasch said that behind the scenes workgroups that do not involve the authors of those works may reduce transparency. Rabbe suggested the authors be invited to the initial TAC review of non-Program science before it goes to the workgroup. He also asked the TAC to edit the Onboarding Framework document provided for this meeting and compile edits to be discussed at the February Reporting Session. Smith said he would revise based upon the TAC discussion today, review again at the Reporting Session with the ISAC and the TAC, give it to the GC in March to check in with them and then



maybe bring it back to the TAC in April. At that April TAC meeting he suggested we do a trial run moving a non-Program article through the framework.

EDO Document: [03 Science Onboarding Framework](#)

TARGET SPECIES

2022 Plover and Tern Monitoring and Research Report

Keldsen gave a brief summary of nesting, fledge ratios, and losses at OCSW sites for the 2022 nesting season. A summary of Incidental Take of plovers during the First Increment and First Increment Extension was presented. Keldsen reviewed annual descriptive statistics of predator presence at sites with status quo and additional predator management. She summarized the predator community present at the sites this year, those responsible for documented predation, and losses due to predation in 2022. Baasch commented that a decrease in the number of unknown losses is good but noted that the Program has little control over losses due to predation. Zorn noted that the June update communicated poor outcomes due to weather, and that the high end of season fledge ratios for 2022 are likely due to higher renesting than indicated by the [Swift et al. 2020](#) paper. Jenniges and Zorn said they do not want to see the report continue to increase in length moving into the future. Henry said the EDO has removed sections summarizing past research from the report in favor of a summary table with links at the end. Current predator research has taken its place to address Extension Big Question 8 and 9. This cycling off of older science that has been discontinued, replaced by current research relevant to Science Plan Big Questions is the plan moving forward. In addition, the report has been broken down into easily digestible pieces (habitat management and availability, plover monitoring, tern monitoring, predator monitoring) with a linked table of contents to allow readers to select what they are interested in reviewing. Jenniges suggested the EDO break out the predator section of the report into a separate document. Rabbe suggested the literature review table at the end could be removed. Henry asked if those changes were to be made to the 2022 report prior to TAC approval or are suggestions for future reports. The TAC agreed to leave the 2022 report as written.

TAC MOTION: *Jenniges moved, and Zorn seconded to recommend the 2022 Plover and Tern Monitoring and Research Report to the GC for their review. There was no opposition to the motion, and the motion passed.*

**Note: The TAC suggested that the Predator Management and Monitoring section of the report and the Past Research Synthesis table be taken out of the report and presented as separate documents in the future.*

EDO Document: [04 PRRIP 2022 Plover and Tern Monitoring and Research Report](#)

EDO Presentation: [05 2023 Jan TAC PPL Results Final](#)

Fall 2022 WC Monitoring Report

WC Monitoring Period

Jaymes summarized monitoring methods and results from the fall 2022 monitoring period. She explained changes to Figure 3 in the report which shows the proportion of the AWB population using the AHR during the fall and the crane use days each fall season from 2007-2022. Updates to FWS AWB population estimates in 2015 and 2016 affected proportion of the AWB population using the AHR in the fall of those years. Jaymes pointed out that crane use days have been calculated using various protocols over the years making this metric difficult to compare from 2007-2022. In addition, monitoring periods



have changed over time, and the inclusion of observations from different survey periods over time also affects comparability of WC use over time. Jaymes reviewed the changes in the whooping crane monitoring period over time and when winter surveys were conducted between spring and fall monitoring periods. She also demonstrated when observations made during the winter surveys that occurred within the Program's current monitoring window change Figure 3 in the report by adding observations to the proportional use and crane use days metrics. The EDO is seeking feedback on data to use to consistently reflect these performance metrics over the long term. Jaymes also summarized the evolution of the report over the last few years including remote sensing-based habitat metrics, reporting survey effort in more detail, and separating PRRIP observations through systematic monitoring from USFWS public sightings but presenting both in the report. Scheel suggested via email that the EDO revise the way ice-affected gage data are represented in Figure 7 and summarized in the Executive Summary. The EDO presented an alternative way to represent these data for the TAC to consider. The revised figure was well-received by the TAC. Turner (in chat) mentioned that USGS will estimate cfs for these ice-affected gages at some point, so the EDO can check back prior to bringing the report to the GC in March. Baasch asked if it would be better to use interpolated flow data to account for distance from the nearest gage to whooping crane location in these reports. Rabbe said seasonal reports use nearest gage. Henry/Farnsworth said that reports do not use interpolated gage data, but analyses will. Farnsworth said the telemetry analysis to address the importance of flow for WC stopover decisions will need to adjust for distance from nearest gage and use the 2D model to adjust for flow splits as well. Zorn asked about the number of crane use days reported for fall 2022. Were the additional 3 -days of monitoring this season included in the calculation of crane use days? Jaymes said not for fall of 2022 because PRRIP did not make any observations during these days. Henry said that there have been seasons when the monitoring period has been extended a few days because of continued presence of whooping cranes within the AHR as per the monitoring protocol. In that case, when observations were made, those observations were included in the calculation of crane use days. Baasch recommended the Program adjust the monitoring season to capture only the 95% percentile window. Rabbe asked about the changes in monitoring dates. Baasch said that to his recollection, when the Program changed dates to include days earlier in the spring, the monitoring window was kept wide so we could go back and analyze the prior window as well. Baasch was not in favor of separating the PRRIP and USFWS observations in Table 1 as it excludes known birds in the area and does not give a complete picture of WC use of the Platte. Henry said the report does not exclude those observations as both PRRIP and USFWS observations are included in the table. If USFWS observes a group that PRRIP does not, that gets included as a data line in the table. The table simply presents those data as a result of different monitoring protocols that rely upon different sources of information. Rabbe said the Service's Biological Opinion will use both sources of information. Zorn said that both methods likely miss birds, staying consistent with reporting is what is important. Rabbe suggested we consider the Service's regulatory dates included in the Biological Opinion and updated for the Extension to make sure there is consistency.

Corrections to be made to the report:

- 1) Pg 5, lines 16-17: Replace "Instantaneous discharge at the nearest gaging station at the time crane groups were observed, ranged from ICE cfs - 128 cfs (Discharge data is provisional)." with "For the first crane group observed, instantaneous discharge at the nearest gaging station at the time of the observation was 128 cfs (discharge data are provisional). Two of the three crane groups observed this season were present at a time when the nearest gaging station was affected by ice."



- 2) Pg 17, Figure 7: Replace blue line representing flow as 0 cfs from 11/13-11/18 when gages were ice-affected with an area shaded in grey to represent period for which flow data are not available.
- 3) Data will be updated with USGS final approved flows (including estimated flow for ice affected gages) when available.

TAC MOTION: *Jenniges moved, and Zmak seconded to recommend the Fall 2022 WC Monitoring Report with the corrections made as enumerated above to the GC for their review. There was no opposition to the motion, and the motion was passed.*

EDO Document: [06 Implementation of the WC Monitoring Protocol – Fall 2022 DRAFT](#)

EDO Document: [06 Implementation of the Whooping Crane Monitoring Protocol - Fall 2022 DRAFT w TAC corrections](#)

EDO Presentation: [07 2023 Jan TAC WC update](#)

Baasch suggested the EDO document trends in survey effort each year. Rabbe asked about a relationship between the proportion of flights flown and number of cranes observed. Zorn would like the data reported to be limited to the 95% window. Moving forward, any observations outside of that window should go into a separate monitoring report (like a winter monitoring report). Farnsworth pointed out that he was hearing the TAC give conflicting advice on how to proceed. Some want to include USFWS observations (no strict monitoring window enforcement) to represent all known WC use of the AHR. Others want to strictly limit observations to the 95% window. Farnsworth suggested we put a workgroup together to discuss this further with the database for reference to add clarity to this issue, flush out decision points and bring back to the TAC to make recommendations for altering the monitoring protocol. Baasch was in support of reviewing the monitoring period at 5-year intervals. He suggested not starting so early in the fall and not going so long in the spring. Henry asked the TAC what data they would want to see. Baasch said telemetry data, USFWS public sighting data, and PRRIP observations. Rabbe again suggested consideration of the Service's Nebraska-wide regulatory dates with the 1st sighting in NE and the last sighting in NE determining the monitoring/advisory period. He asked about whether the TAC wanted to match PRRIP monitoring with USFWS regulatory dates as included in the Program's Biological Opinion and updated for Extension. Henry asked for volunteers for a workgroup to look at the data, flush out decision points, and bring this item back to the TAC. Rabbe volunteered along with Baasch. Baasch suggested Roberts as a participant in this group as well. Henry will follow up with volunteers to set up a date and time to meet.

WC Fall/Spring Combined Use of AHR

Zorn brought up the figure generated by the EDO at Rabbe's request that combines WC use metrics (proportional use and crane use days) over the fall and following spring. Henry explained how the calculations were done to generate the figure. Zorn asked what that figure means, how it should be interpreted, and if it is biologically relevant? Rabbe said that he had suggested the figure because the landcover and vegetation cranes are experiencing is similar in the fall and the subsequent spring without a growing season between them, but there is more annual variability in the data than he thought there would be and probably no significant long-term trend. The USFWS considers annual use as an indicator (e.g. annual use at Aransas, annual use at Wood Buffalo). How does annual use of the Platte compare? Baasch said this idea was presented to the ISAC in the past. The ISAC did not think it was valid and advised the EDO not to use this metric. Zorn asked again about biological relevance citing that selection



may be based on other characteristics that are different from spring to fall. Henry said if the Service would like this figure updated at some interval, the EDO can do that. She was asked if the EDO has a recommendation for combined fall and spring use. She said that the Science Plan (Extension Big Question 6) asks specifically to gather information on how the decision context around WC use of the Platte differs between the spring and the fall, so the EDO will continue to separate use by season to answer this question. Henry said there are also some very different habitat characteristics and biological life history circumstances surrounding fall and spring migration that should be considered. Combining over seasons likely confuses these signals.

EDO Document: [08 WC Combined Use](#)

WC Monitoring by Drone

Jaymes informed the TAC that the EDO had been contacted in response to the RFB for WC monitoring about the potential for performing WC monitoring using drones. She summarized the information she had and asked for TAC feedback and guidance on information to be included on bids submitted for whooping crane monitoring through remotely operated drones. Baasch asked whether there was a 1000 ft height requirement for the drone flight. Mallory said she would look into that. Baasch asked if the Program would be reviewing video footage or get a live feed. Zorn asked if the drone required maintenance of a line of site during the flight. The Service was asked if the drone flight constitutes a disturbance or can we decrease from 1000 ft to 500 ft minimum height. Rabbe said he would check the Service requirement. Rabbe asked about other restriction or legal requirements to fly over public land. Mallory said the person submitting the bid said the drone could be flown remotely from South Carolina. Hegg said a live feed would be important for verification of sighting by a ground crew. Baasch asked if the Service would allow a test flight over sandhill crane roosts to assess disturbance with them first at the 500 ft height. Rabbe asked how we would address consistency in protocols over time? Henry said we could take the same approach as they did at Aransas and implement both methods simultaneously for a few seasons to compare results. Farnsworth suggested doing the entire test with decoys to see if the drone provides the same image quality necessary for detection.

WC Telemetry Stopover and Stay Length Analysis

Henry gave a brief summary of Extension Big Questions 4-6 that ask about the factors associated with WC stopover and stay length decisions and the seasonal context of those decisions. The implementation timeline has the initial round of analyses to address these questions scheduled for this year. These analyses will utilize telemetry locations throughout the migratory corridor and the characteristics surrounding those locations to get a broader understanding of what is important to whooping cranes corridor wide and how the Platte compares. The Program will be collaborating with the Whooping Crane Tracking Partnership to develop this study and work with the data. The ball is in our court to develop a draft study plan for them to review and revise. The EDO is asking for a TAC workgroup to help develop this study plan over the next few weeks, meeting in person to discuss ideas and revising drafts based on these discussions between meetings. Farnsworth encouraged new folks to get involved in TAC workgroups to get background and context for the Program. Baasch mentioned the Trust is working on classifying all WC roost locations corridor-wide (about 6800 locations) by wetland landcover. Baasch volunteered for the workgroup. Rabbe said he would check with his supervisor so he does not over-commit given other priorities and get back to the EDO on this. Roberts, Flyr and Walters volunteered. Marks said he would ask Urie to participate in this group as well. Henry will follow up with volunteers to set up a date and time to meet.



WC Riverine Roost Site Selection Analysis

Farrell revisited the ongoing WC riverine roost site selection analysis to update the TAC on 1) comparability between hand-delineated on-channel point-based metrics of unobstructed channel width and nearest forest, and 2) to get TAC feedback on incorporating a new landcover product developed by the Rainwater Basin Joint Venture (RWBJV) and partners in [Baasch et al. 2022](#) that will allow the EDO to incorporate finer-scale wetland landcover categories into the current list of off-channel area-based explanatory variables. Farnsworth asked what does reclassification of developed landcover into forest/developed or rural/developed do to reduce differences between hand-delineation and remote-sensed metrics? Farrell said it may reduce differences by about 10% by using those refined classes available in the new landcover product, so possible to clean it up a bit more using these classes. Farnsworth said that differences created by using different angles for measurement exist even if hand-delineation were used across all years due to the differences between observers. So, our best shot at reducing the error is to clean up those rural developed landcover classes with forest cover. Baasch asked how the EDO plans on doing this moving into the future. Farrell said this is the most recent source for landcover information. The EDO has then added known sources of landcover change as layers to adjust for changes over time like annual disking and tree removal. Walters said he thinks the difference of 4% is within acceptable limits of error. Baasch said some remotely sensed estimates are over and some are under the hand-delineated value, but on average they are very close. This should not influence the outcome of the analysis. Manley asked about the scale of error, and its importance to WC. If you are off by 10 ft, is it likely to fall outside the channel, and is that important to WC? Rabbe said distance to obstruction is important, but not beyond a given threshold. Farrell said metrics were capped to 400 m so some extreme measures will be less extreme. Farnsworth said the confidence intervals from the previous analyses are in the range of 100 m and our estimates are off by about 10 ft or less on average, so our accuracy with remotely sensed measurements is much greater than our predictive capacity. Rabbe said the difference between the two methods is negligible and we should move forward with remotely sensed metrics. Farrell posed the following questions:

- 1) Use both hand-delineated (2001-Spring 2017) and remote sensed metrics (Fall 2017-Spring 2022) for the current long-term analysis?
- 2) Use remote-sensed metrics from here forward?

TAC MOTION: *Walters moved, and Jenniges seconded to use both hand-delineated and remote sensed metrics for the current long-term analysis and to use remote-sensed metrics from here forward. There was no opposition to the motion, and the motion was passed.*

Farrell reviewed the new wetland categories within grasslands and agricultural fields included in the new RWBJV product and asked if the TAC was on board using those grassland subclasses in the analyses. Jenniges asked how those classes were delineated and if there had been any ground truthing. Baasch said that it followed the Brei/Bishop classifications of the 2005 RWBJV product, but added soil types, wetland index, and flooding frequency as layers. Jenniges requested more information than what was contained within the published article. Rabbe said the TAC needed time to read and digest the article before they can weigh in on how to use it. Farnsworth said that the EDO is trying to complete the analysis on time and asked the TAC to allow the EDO to use the product, include finer-scale landcover classifications for now, and then back it out to the more general classifications if the TAC decides it does not like the way the finer-scale classifications were done. Farrell posed this question for TAC voting:

- 3) Should our updated riverine analyses separate grassland classes into these finer categories?



TAC MOTION: *Rabbe moved, and Walters seconded to use the finer-scale wetland landcover classes within grasslands included in the new RWBJV product (Baasch et al. 2022) in the WC riverine roost site selection analysis. There was no opposition to the motion, and the motion was passed.*

**Note: Jenniges was not opposed as long as the following caveat was met. He requested a written description of how the authors derived these classes.*

Farrell then asked:

4) Should our updated riverine analysis also add ag wetland as a variable?

Jenniges asked how much WC used this specific land class? The publication defines use as within 1 km of these ag wetland areas. Did WC actually use these low-lying spots within ag fields? Rabbe said there is error associated with locational data from the public sighting database. Jenniges said there is no information as to whether the low-lying areas were wet at the time of use. Baasch said that without GPS accuracy you cannot tell if WC use the actual feature. Farnsworth said that this is why he recommends the Baasch et al. 2022 paper as the first one to run through the Onboarding Framework as it is relevant and on point. He suggested once again doing the analysis at the finer scale incorporating ag wetlands with the option to bring it back out to a wider agricultural scale if the TAC decides it does not want to use it.

TAC MOTION: *Jenniges moved, and Merrill seconded to use the finer-scale ag wetland landcover class within agriculture included in the new RWBJV product (Baasch et al. 2022) in the WC riverine roost site selection analysis. There was no opposition to the motion, and the motion passed.*

**Note: Baasch said that a Q/A session with Caven for a better explanation of how these landcover classes were derived will be scheduled for March. Jenniges was ok with that.*

EDO Presentation: [09 Whooping Crane Roost Site Selection Analysis Update](#)

NORTHERN LONG-EARED BAT

Northern Long-Eared Bat Listing

Rabbe updated the TAC on the status of the northern long-eared bat. The species will be uplisted from threatened to endangered on Jan. 30th, 2023. He said the Service still has some background work to do before they can provide a clear path of what that will mean for the Program. He did say that the 4D Rule will no longer be valid. All projects with expected take will have to have their own permit with take limits set. The expectation is that the date range for prohibition of tree clearing will expand to April 1 – November 1 (formerly was Jun-July). If tree clearing is planned during that date range, will need to perform a bat survey (mist net or acoustic survey) prior to clearing. The Service will also need to issue a “take not likely to occur” determination prior to tree clearing. March 6 – Nov 15 is the WC monitoring season. If tree clearing is planned during this period it may still require a bat survey and a Service “take not likely to occur” determination. Jenniges asked if the Service has established caveats with regard to how much tree clearing is okay, tree clearing at what scale is allowable? Rabbe said the Service is developing a determination key to follow which will provide guidelines including things like the scale of tree clearing generally allowable. Will need to follow the key to see where your anticipated action falls but will still need to submit it to the Service for their determination. The key is just a guide. After the Service gets more background work done, Rabbe hopes they will get to a Programmatic consultation.

EDO Document: [10 FWS NE 2016-279 NLEB](#)

**LAND***Grassland Vegetation Monitoring*

Rabbe expressed interest in using the data collected from the Program's Grassland Vegetation Monitoring Survey to help the Program manage land for diversity and to benefit other species. He said the report provides an evaluation of changes over time to assess positive and negative trends. This information can be used to determine if there are land management changes that could be made to address any concerns that arise and provide better habitat for multiple species. The Program could manage some grasslands for structure and others for diversity. Henry said the 2022 report will be available by January 23rd, 2023. The TAC agreed to review this report and discuss in more detail in April.

EDO Document: [11 2019 PRRIP Grassland Vegetation Monitoring Report](#)

WATER*Drought Preparedness*

Manley introduced drought as of general interest to WY and to the Program, though it had not been addressed recently by the TAC. He said that 2022 was the 4th driest year on record while Dec 2022 was the 25th wettest in 120 years. He asked how these non-controllable things impact what we can control, like chemical and mechanical management. He noted that humidity can impact fledging and productivity and asked if the Program could do something to improve relative humidity. He asked the TAC if there were items relevant to meteorological drought that could be brought forward to the Program. Farnsworth said that the EDO will think more about how drought impacts productivity, land management, effectiveness of herbicide or need for herbicide. Roberts said that Nebraska DNR is currently working on drought planning. We could check in with them on the status and to make connections. Farnsworth said Tunnell would circle back with the TAC with some land management techniques utilized during meteorological drought.

FUTURE AGENDA ITEMS*Background and Timing*

Walters said that with all the new science coming out, the TAC will need to again discuss the importance of wet meadows to the Program. Rabbe said that the Grassland Vegetation Monitoring discussion fits in with this nicely and will be revisited in April. Henry mentioned that the effectiveness of June flow releases on *Phragmites* expansion would be discussed during the Feb Reporting Session. Evaluation of sediment augmentation effectiveness is also on the Reporting Session agenda.

TAC MEETING REVIEW & WRAP-UP

- Henry mentioned that Ed Heist from Southern Illinois University will be presenting results on pallid sturgeon genetics that rely upon Program-funded GTseq technology at the Middle Basin Pallid Sturgeon meeting on Jan 19th and at the MRRP Science Staff Meeting Feb 7-9th.
- Henry circled back with the TAC for feedback on the new TAC meeting format implemented at this meeting. Drain said he appreciated the greater time allocated to technical discussions. Rabbe said TAC leadership will be asking TAC members to step in and work more actively. Drain said he is okay with the 4x/month full day meetings. Zmak said full day meetings are okay when held in person. If meetings are virtual, two ½ day meetings are preferable. Scheel, Rabbe, Merrill, and Zmak will get together with the EDO to make a strategy to implement new ideas for stakeholder engagement during the next three meetings.

**Action Items:**

- Scheel elected as the 2023 TAC Chair and Rabbe as the 2023 TAC Vice-Chair.
- EDO will set up a meeting with Scheel, Rabbe, Merrill, and Zmak to set up a strategy for the next 3 TAC meetings that encompasses new ideas for stakeholder engagement and meeting format.
- EDO will revise Onboarding Framework for Reporting Session, give it to the GC in March, and bring it back to the TAC in April with a trial run moving a non-Program article through the revised framework.
- 2022 PP Monitoring and Research Report recommended by TAC to go to the GC in March
- EDO will make the recommended revisions to the Fall 2022 WC Monitoring Report and post under Jan 18 TAC meeting documents. Report was recommended by TAC to go to the GC in March.
- EDO will reach out to set dates and times for the following TAC workgroups
 - WC Monitoring Period Evaluation
 - WC Telemetry Study Plan Development.
- EDO will gather more information for the TAC on the potential for monitoring WC by drone to bring back to the TAC for consideration.
- EDO will use both hand-delineated and remote sensed metrics for the current long-term analysis of WC roost site selection and to use remote-sensed metrics from here forward.
- EDO will perform the WC riverine roost site selection analysis using the finer scale wetland landcover classes in the new RWBJV product ([Baasch et al. 2022](#)) with the potential for backing that out to a broader classification if directed by the TAC.
- [Baasch et al. 2022](#) will provide additional detail in written form and as a Q/A session in March as to how these classes were derived to better inform the TAC.
- The TAC will review [Baasch et al. 2022](#) and provide feedback on the whether they are in favor of using the finer scale landcover classes for WC riverine roost site selection analysis or not.
- Service will do more background work on the NLEB listing and return to the TAC with updated information on what the endangered status of this species means for the Program moving forward.
- EDO will provide the TAC with the 2022 Grassland Vegetation Monitoring Report for their review and will include this as an agenda item on the April TAC meeting.
- EDO will provide the TAC with information on how the Program addresses both meteorological and hydrological drought at the April TAC meeting.
- Scheel, Rabbe, Merrill, and Zmak will get together with the EDO to make a strategy to implement new ideas for stakeholder engagement during the next three meetings.

Future calendar events:

- **Feb 14-16th, 2023** Science Reporting Session in Omaha, NE
- **April 12, 2023** 2nd Quarter TAC meeting, Kearney, NE
- **July 19, 2023** 3rd Quarter TAC meeting, Kearney, NE
- **October 10, 2023** 4th Quarter TAC meeting, Kearney, NE

TAC MEETING END

The TAC meeting adjourned at 4:25 PM Central Time.