ISAC Report to Governance Committee

Feedback on Feb. 14-16 Science Plan Reporting Session

March 7, 2023

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ISAC Membership Updates

Welcome to Aaron Pearse and Michal Tal

Topics

1. Target species: Pallid Sturgeon
2. Target species: Whooping Cranes
3. Sediment Augmentation
4. Wet Meadows
5. Phragmites
6. Non-program science
7. State of the Platte Report

Target species: Pallid Sturgeon
Genetics (SIU research group)

Strengths

- Good progress in year 1.
- Identified age-0 and adult pallid sturgeon in the Platte.

Weaknesses

- Presentation assumed high-level understanding of modern genetics.

ISAC recommendations for future presentations and reports

- Ask Heist group to explain their work at a more basic level and make links to program goals in future presentations and project reports.

Target species: Pallid Sturgeon

Habitat and Use (UNL/NGPC Research Group)

Strengths

- Strong team.
- Successful first year of data collection under challenging conditions.

Weaknesses

- Lacking a statistically rigorous design and analysis plan linked to project objectives.
- Study will only be able to identify potential spawning sites, not actual spawning sites.
- Did the UNL team fully use NGPC expertise?

Target species: Pallid Sturgeon
Habitat and Use (UNL Research Group)

ISAC recommendations for next steps

1. Convert generic project goals into quantitative objectives with hypotheses and data analysis plan.
2. Ensure the graduate students have sufficient support.
3. EDO should continue to work closely with team to ensure that project meets PRRIP objectives.
4. EDO should assess at April 5 meeting if PRRIP goals are achievable given current plans, capacity, and progress to date.

Target species: Whooping Crane

Riverine Roost Site Selection Analysis

Strengths

- Useful to carry out this re-analysis of whooping crane site selection using all available program data, including the most recent.
- It is useful to consider off-channel metrics.

Weaknesses

- Analysis does not use all available data (missing the publicly available telemetry data from 2010-2018).
- Unit discharge (cms/m) measure is hard to interpret given large cross-channel variability.

Target species: Whooping Crane

ISAC recommendations for next steps:

1. Continue with data analysis.
2. Discharge metric(s): Reconsider how water depth, channel morphology, and flow can be represented to best explain nocturnal roost selection.
3. Engage the TAC as to how on- and off-channel metrics might interact in a way that could affect recommendations and management actions.
4. Consider a finer representation of landcover that delineates wetlands from grasslands and redo diurnal habitat selection modeling to see if you've learned anything new.

Sediment Augmentation

Strengths

- Sediment augmentation is the appropriate strategy to mitigate single-thread channel degradation in response to a clear water return.
- EDO is collecting comprehensive data and conducting high-quality analyses.

Sediment Augmentation

Weaknesses

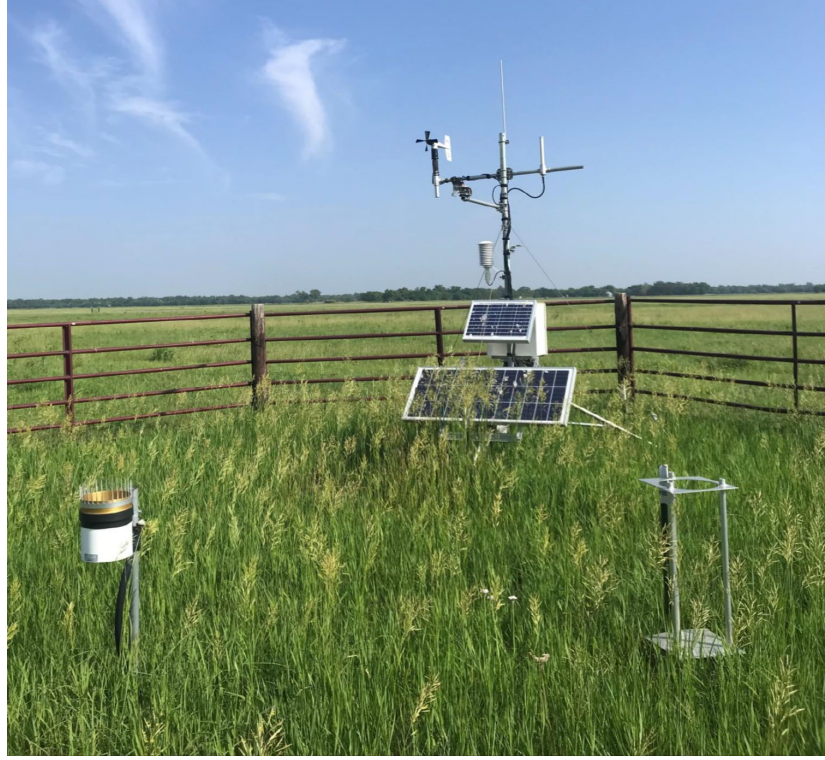
- While the ‘change since augmentation’ analyses were very well done, there was no pre- vs post-augmentation comparison.
- It was not clear how each analysis was used to answer program big questions and specific program hypotheses.

Sediment Augmentation

ISAC recommendations for next steps:

1. Continue to augment sediment downstream of the J2 return.
2. Evaluate possible additional sources of sediment (lateral erosion, breakthrough channel).
3. State clear questions and hypotheses related to program goals.
4. Focus data analyses on key endpoint: Can sediment augmentation maintain wider channels and create potential WC habitat?
5. Does EDO need to continue to conduct such in-depth data analyses annually?

Wet Meadows



Strengths

- A great deal of careful analysis was done.
- Nice job on combining multiple data sources.
- Modeling has potential uses for evaluating the suitability of different sites to become wet meadows.

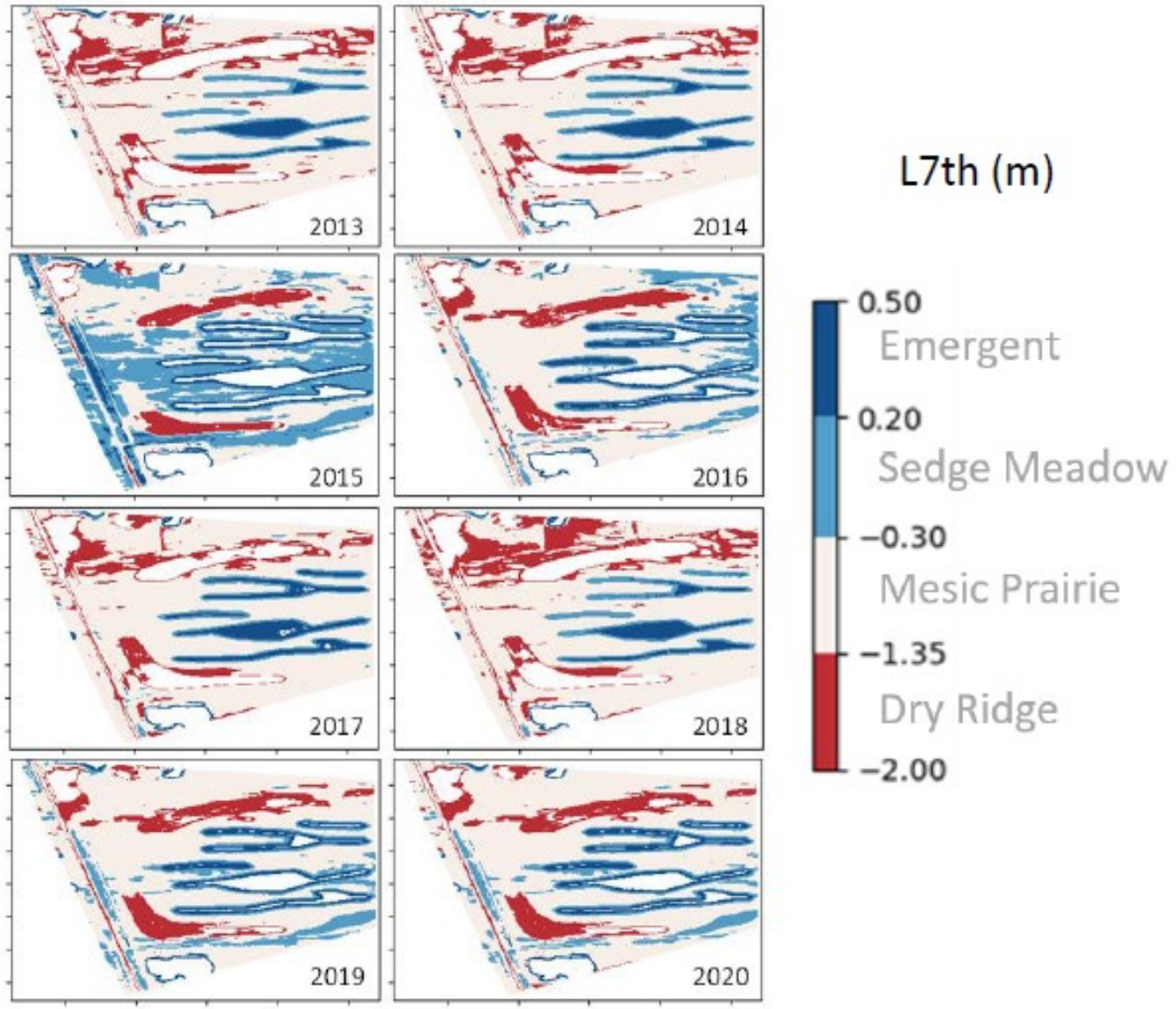
Weaknesses

- Study limitations constrain what can be learned: only 2 sites, limited information on what vegetation and soils were there originally, the meadows appear to have been drained, cultivated, and fallowed over time.

Wet Meadows

ISAC recommendations for next steps:

1. Spend time at the sites.
2. Ground truth the analyses.
3. Are the presented analyses sufficient for the GC to define the role of wet meadows on Platte River recovery for the 2nd increment?



Phragmites

Strengths

- Extensive data collection in 2022.
- EDO has considerable data and modeling resources to determine the likelihood that specific flow conditions will be effective at limiting the spread of a phragmites patch and identifying thresholds below which they will have no impact.

Weaknesses

- Inundation area and flow depth vary with the shape of the channel, but current sampling plan assumes that inundation flows have the same impact everywhere.

Phragmites

ISAC recommendations for next steps:

1. For each patch, measure flow and herbicide exposure.
2. Use hydraulic modeling, remote sensing, and field measurements (sensors and census) to quantify the flow conditions that are effective at limiting patch expansion.
3. Reformulate the study question: Where are target flows insufficient to prevent the expansion of a phragmites patch requiring the additional application of herbicide?
4. Improved experimental design needed (see report).
5. Program needs stronger evidence that inundation stops germination.

Non-program science

ISAC recommends that the EDO and TAC do not adopt the proposed framework for onboarding non-program science.

Non-program science
ISAC recommendations for next steps

1. Encourage collaboration between EDO, program participants, and other researchers.
2. For all EDO documents and presentations: Cite, scrutinize, and carefully evaluate all relevant peer-reviewed publications. Explain what your new work is adding.
3. Present a distilled synthesis of current understanding for all documents presented to the GC, especially in the State of the Platte report.
4. GC should ask all program entities to make the Program aware and provide periodic updates regarding new scientific endeavors and products that may have value and relevance to Program activities, science, and decisions.
5. When there are competing alternative hypotheses that affect management decisions, use your Structured Decision Making framework to reconcile.

State of the Platte Report

- 2019 was the last State of the Platte Report
- State of the Platte Reports are needed for decision makers and for continued success with your structured design making program.

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State of the Platte Report

ISAC recommendations for next steps:

- Issue State of the Platte Report in early 2024
- The GC might require the EDO to publish regular (biennial?) State of the Platte Reports.

Conclusions

- EDO has first-rate staff who produce high-quality scientific research.
- Future science meetings need to address Science Plan more directly.
  - Important to have big picture questions for the ISAC that the GC is interested in.
  - Need to get back to the Science Plan and State of the Platte report.
- ISAC will provide additional recommendations and technical details in their written report to the GC

Discussion and Questions

Independent Scientific Advisory Committee Recent Activities

- September 2022: Attended joint GC/ISAC meeting + ISAC report.
- February 2023: Attended PRRIP Science Plan Reporting Session
- Today: presentation
- Upcoming:
  - ISAC preparing a more detailed report to be submitted to the GC.
  - Three ISAC members will meet with UNL pallid research group in April.

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