ISAC Report to Governance Committee

Feedback on Draft Extension Science Plan

December 2021

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ISAC actions since last GC meeting

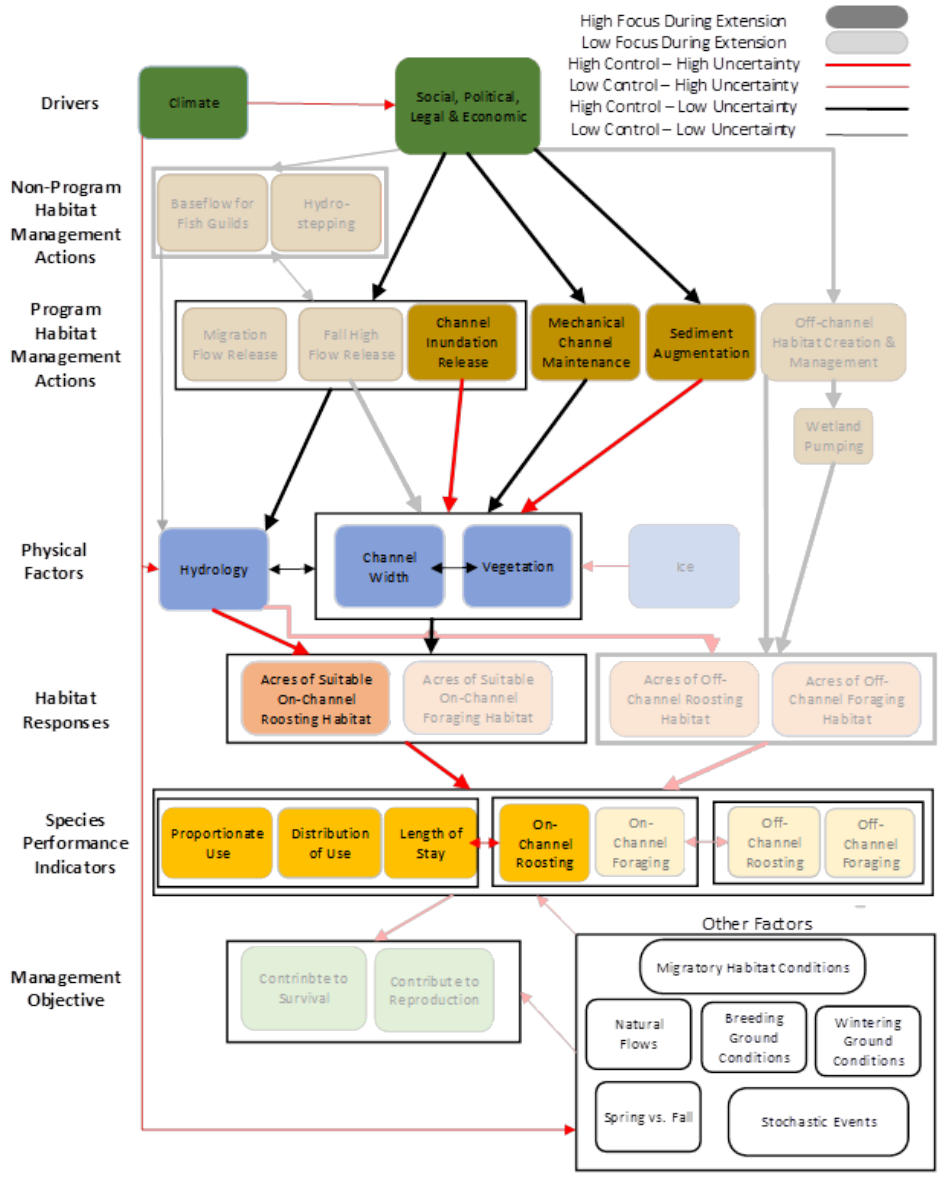
- ISAC met with EDO and TAC on Nov 16 to review the draft Extension Science Plan
- ISAC provided EDO with detailed feedback
- Today: overview for GC of some key science issues for the extension

Logistical committee:

- In 2021 ISAC met quarterly with the EDO.
- Quarterly meeting set-up keeps the ISAC more engaged

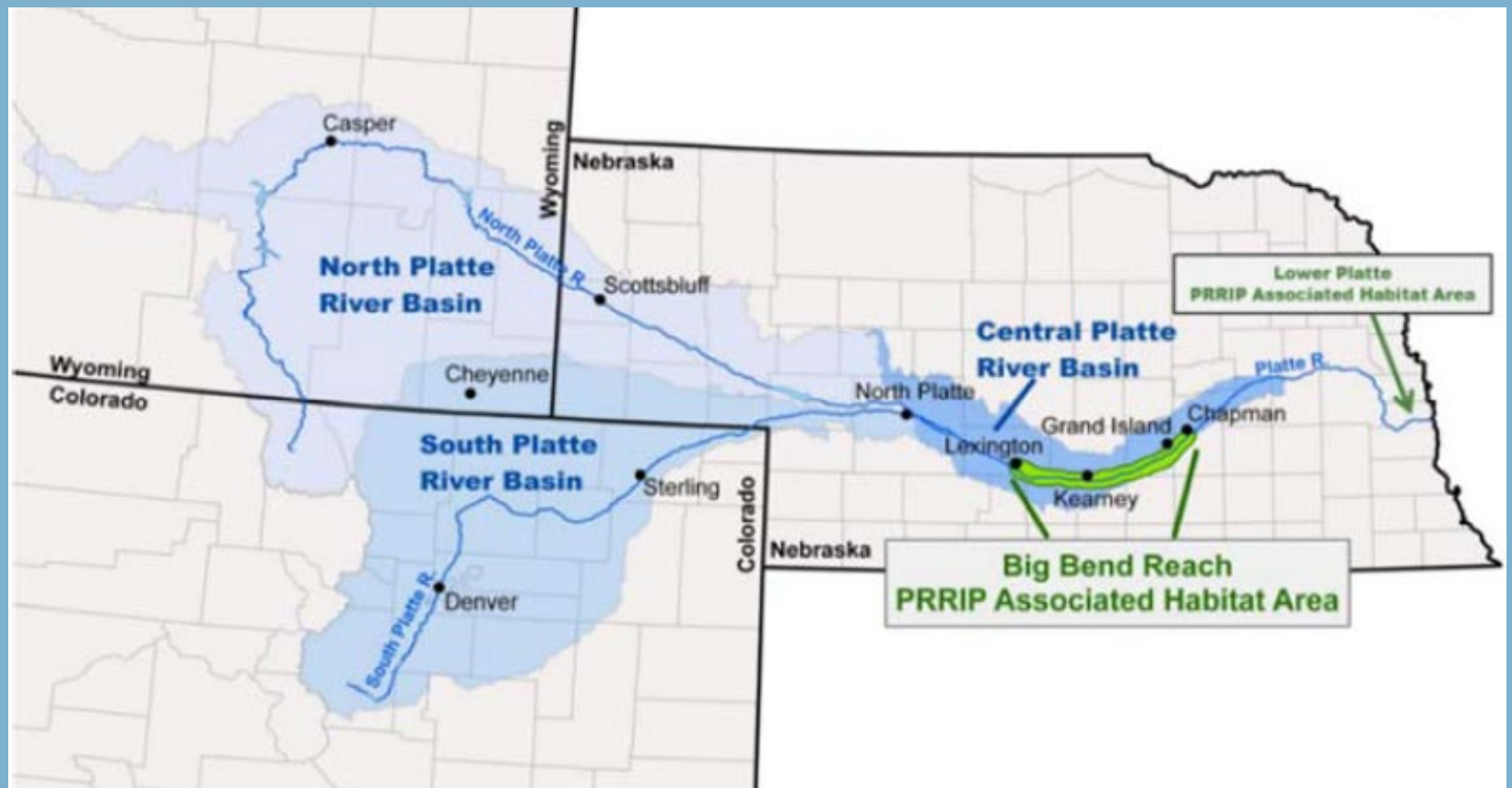
ISAC commends EDO &TAC

1. Excellent draft Extension Science Plan
2. Setup with Extension Big Questions (EBQ) and parking lot
3. Conceptual Ecological Model (CEM) diagrams & tables
4. Multi-year implementation schedule and synthesis timeline



ISAC recommendations on key science issues in the extension

1. Monitoring
2. Pallid Sturgeon
3. Whooping Cranes
4. Water Management



Haiku: Monitoring

Monitors beware.
Hypotheses drive science.
GC wants answers!

Active vs Maintenance Learning

- Current draft splits Big Questions into active and maintenance learning
- The maintenance learning is not generally hypothesis driven
- Example:
  - EBQ #8 – How much of an effect does predation have on PP productivity?
  - Learning Objective 3: Determine when losses are incurred, at the nest or during brood rearing.

- **Recommendation**: Determining the effect of predation of Piping Plover recruitment is an important issue and deserves the same level of attention as Whooping Cranes.

Monitoring should be hypothesis driven

"It is much easier to establish surveillance monitoring programs based on a [supposed] need for additional 'baseline' information, and therefore postpone the careful thought that goes into hypothesis formulation and analysis."

Nichols, J.D. & Williams, B.K. (2006). Monitoring for conservation. Trends Ecol. Evol., 21, 668–673.

Key question:

What evidence would make you change your mind?

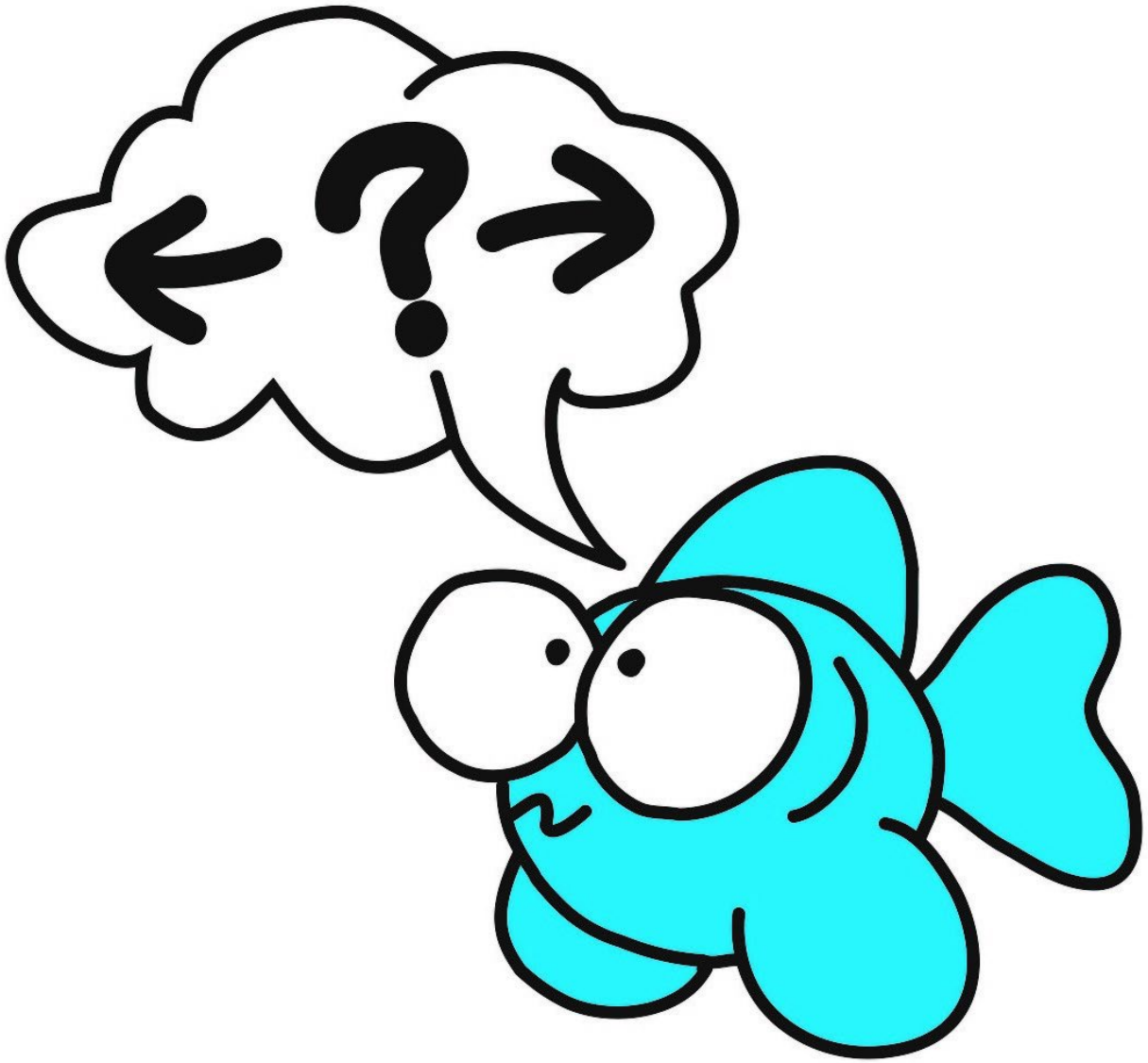
Monitoring should be hypothesis driven

- Program has done a terrific job making informed decisions based on high quality science.
- In extension, important to keep this focus.
- Learning Objectives are not a substitute for hypothesis-driven monitoring.
- Use natural contrasts (e.g., flows, weather) as well as deliberate contrasts in management actions to test hypotheses.

Recommendation: all PPRIP monitoring should be designed within targeted (focused) monitoring guidelines.

Haiku: Pallid Sturgeon

Where do sturgeon go?
Should answer that question first;
Why is much harder.



EBQ 7: What effect do Program flow management actions have on pallid sturgeon use of the lower Platte River?

Current Science Plan draft gives 7 learning objectives by no hypotheses

Recommendation: EDO should draft preliminary hypotheses for EBQ7.

Hypotheses will

- Guide UNL research to provide products relevant to PRRIP needs.
- Aid in designing the 2026-27 PPRIP Water Management Study.

Haiku: Whooping Cranes #1

Why do whoopers stop?
Can PRRIP increase stopovers
These are good questions!

Whooping Crane stopovers

Science recommendation:

Keep in mind that spring and fall migration may have different stopover drivers.

Whooping Crane stopovers

EBQ #4 – Does flow influence WC decision to stop or fly over the AHR?
EBQ #5 – Does flow influence WC stopover length within the AHR?

- Telemetry data sets including a larger area / more stopovers should help to reveal what factors are consistently correlated with stopovers
- WC telemetry is conducted by an outside entity.

Recommendation: Establishing a reliable agreement for WC telemetry should be a high priority for the EDO during Extension.

Haiku: Whooping Cranes #2

Big flows do great work,
Widening channels for whoopers;
Take full advantage!

Channel maintenance for Whooping Cranes

- Large natural river flows can widen the channel and provide benefits for whooping cranes

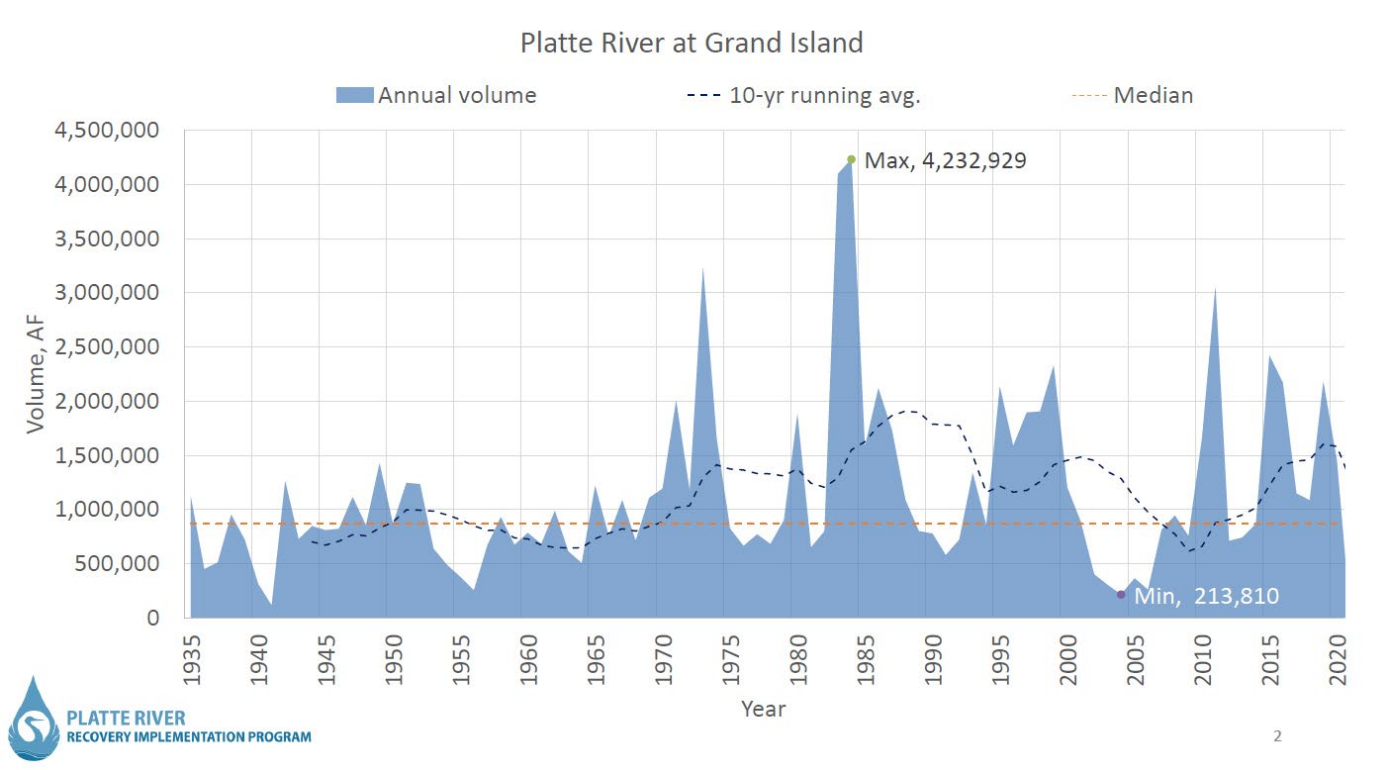
Recommendations:

- Continue river management for Whooping Cranes with nature in mind.
- Plan management actions to maximize the benefits from large, natural flows.

Haiku: Program Water

Prediction is hard
'Specially about the future;
Prepare for extremes!

Water Management



Nonstationarity and extremes of flow will likely be important

Recommendation:

Imagining implementation of the Plan under a range of future climate scenarios will improve odds of successful program

Use of Program Water

- EBQ #1 – How effective is it to use Program water to maintain suitable whooping crane roosting habitat?
  - What if June-July flows of 2000 cfs are not sufficient to suppress germination?

- During dry years, will uses of program water to promote whooping crane stopovers lead to an essentially dry river channel at the downstream end of the AHR?
  - How does this impact pallid sturgeon in the Lower Platte?

A continuing challenge is that water uses are interrelated

Conclusions

- EDO has made excellent progress on the Draft Science Plan
- Further interaction among the EDO, TAC, and ISAC will help in finalizing the plan – we have very productive conversations!

December 2021 ISAC Check-in with PRRIP GC

Questions?