Platte River Recovery Implementation Program
ISAC Report to Governance Committee

Feedback on Feb. 20-22, 2024 Science Plan Reporting Session

June 11, 2024

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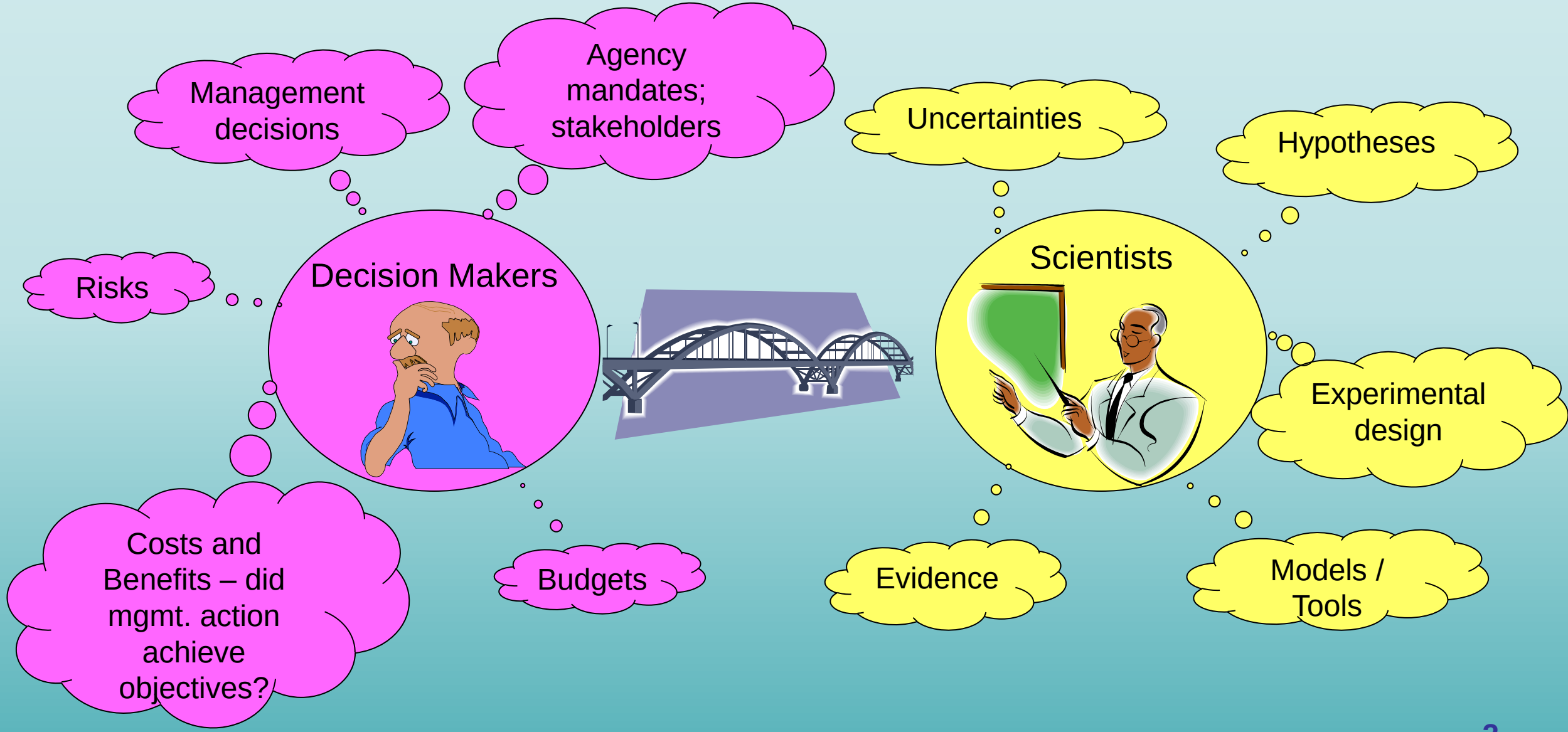
Making science relevant to decisions



Questions posed to ISAC - 1

Questions about the SoPR (simplified)
Q1: Do format and content of 2024 SoPR appropriately communicate Program progress toward addressing EBQs for intended audience (primarily GC)?
Q2: Are 2024 EBQ assessments logical? If not, why not? Respond to Q2 for each of 10 EBQs.
Q3: Does 2024 SoPR provide appropriate support / foundation / justification for key ideas and conclusions?
Q4: Is the Program implementing Extension Science Plan management actions, research, monitoring, data analysis and synthesis in a way that facilitates EBQ assessment throughout the Extension?
Other Questions (simplified)
Q5. Are approaches for evaluating **effectiveness of germination suppression flow releases** appropriate for quantifying costs and benefits? Should we consider other approaches?
Q6. Are conclusions regarding factors that impact **WC roost site selection** within AHR well-supported (data, methods, analyses, models), as detailed in WC Roost Site Selection Technical Report? Is the report appropriate for publication?
Q7. Pallid sturgeon: a) Worth collecting **data upstream of the Elkhorn River** for EBQ#7? b) Is understanding of **factors associated with immigration/occurrence and emigration** into/out of lower Platte River (LPR) enough to inform Program water management in the central Platte River? c) What will Program learn about **pallid sturgeon movement into, through, and out of LPR**? d) Does **larval trawling** at Platte / Missouri confluence help to answer EBQ#7? Should Program maintain larval trawling?
Q8. Piping plovers. a) Are approaches for **evaluating effectiveness of predator management** appropriate? b) Regardless of management effectiveness, is it worth continuing **camera work** beyond 2024?

Format, Content, Reasoning of SoPR

Decision Makers' Needs	ISAC Comments & Recommendations
1. Clear, concise, unbiased reports on Program performance for multiple audiences	1a. Great to see the SoPR! Appropriate format and content. Broaden audience by including Program overview at start.

Format, Content, Reasoning of SoPR

Decision Makers' Needs	ISAC Comments & Recommendations
2. Concise, credible assessments of progress on Extension Big Questions that synthesize what's been learned to help with management decisions.	2a. Acknowledge factors outside Platte which may contribute to observed trends in PPs and WCs

Format, Content, Reasoning of SoPR

Decision Makers' Needs	ISAC Comments & Recommendations
2. Concise, credible assessments of progress on Extension Big Questions that synthesize what's been learned to help GC with management decisions.	
	2b. Rephrase EBQ 1, 2, 4-7 so they're answerable with thumbs up / down., *and* reference management hypotheses.

Current EBQ #5. What factors influence WC stopover length within the AHR?

Revised EBQ #5. Does flow influence WC stopover length within the AHR?

Management Hypothesis: Length of WC stopover is a function of discharge.

Alternative Phrasing of EBQs for 👍 and 👎

Current EBQs	Possible Alternative Phrasing of EBQs
EBQ-1. How effective is it to use Program water to maintain suitable WC roosting habitat?	Can the use of Program water maintain suitable WC roosting habitat?
EBQ-2. How effective is Program management of Phragmites for maintaining suitable whooping crane roosting habitat?	Is the Program effective in managing Phragmites for maintaining suitable whooping crane roosting habitat?
EBQ-4. What factors influence WC decision to stop or fly over the AHR?	Does flow influence WC decisions to stop or fly over the AHR? *What other factors are important?*
EBQ-5. What factors influence WC stopover length within the AHR?	Does flow influence stopover length within the AHR? *What other factors are important?*
EBQ-6. Why is spring WC use of the AHR greater than fall WC use?	Is spring WC use of the AHR greater than fall WC use due to higher flows in the Spring? *What other factors are important?*
EBQ-7. What effect do Program flow management actions to benefit WC, PP, and LT in the central Platte River have on pallid sturgeon use of the lower Platte River?	Does Program flow management affect pallid sturgeon use of the lower Platte River?

EBQ-3 is fine as is. EBQ-8, 9 and 10: “Did we accomplish the stated learning objectives for …”

Format, Content, Reasoning of SoPR

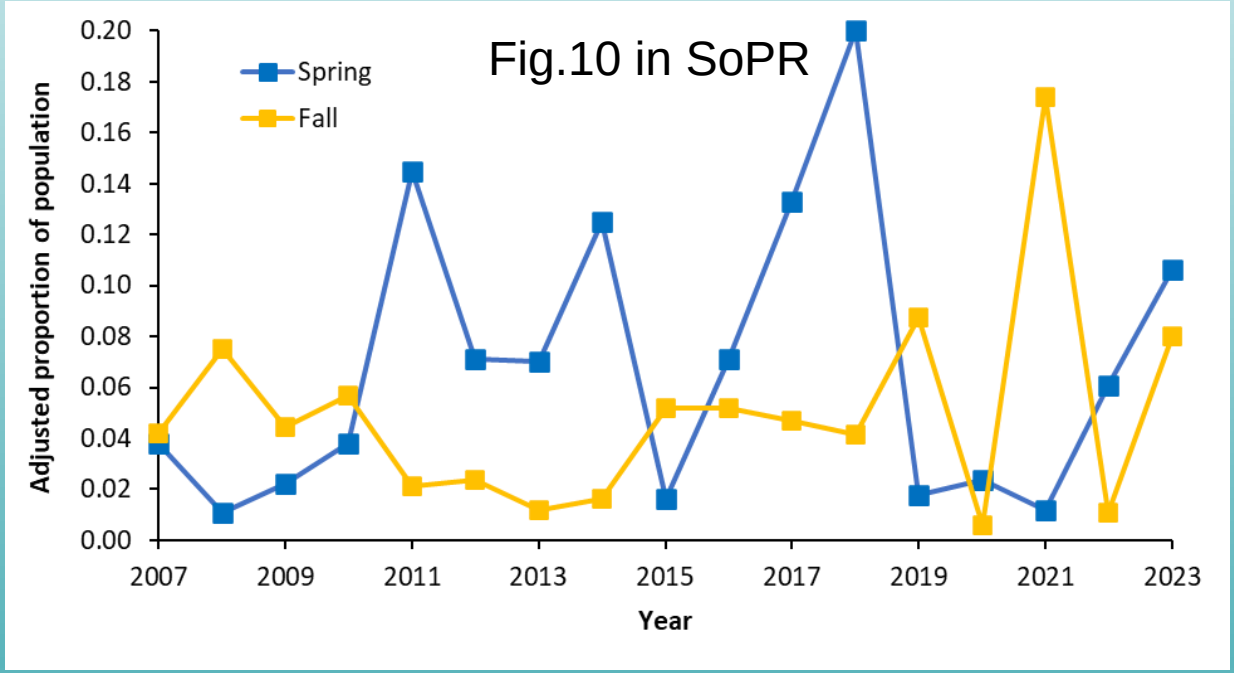
Decision Makers' Needs	ISAC Comments & Recommendations
2. Concise, credible assessments of progress on Extension Big Questions that synthesize what's been learned to help GC with management decisions.	
	2c. Continue to apply Structured Decision Making (SDM) to adjust management based on learning, as done in first increment.

Format, Content, Reasoning of SoPR

Decision Makers' Needs	ISAC Comments & Recommendations
2. Concise, credible assessments of progress on Extension Big Questions that synthesize what's been learned to help GC with management decisions.	
	2d. Test management hypotheses using contrasts in actions over space as well as time.

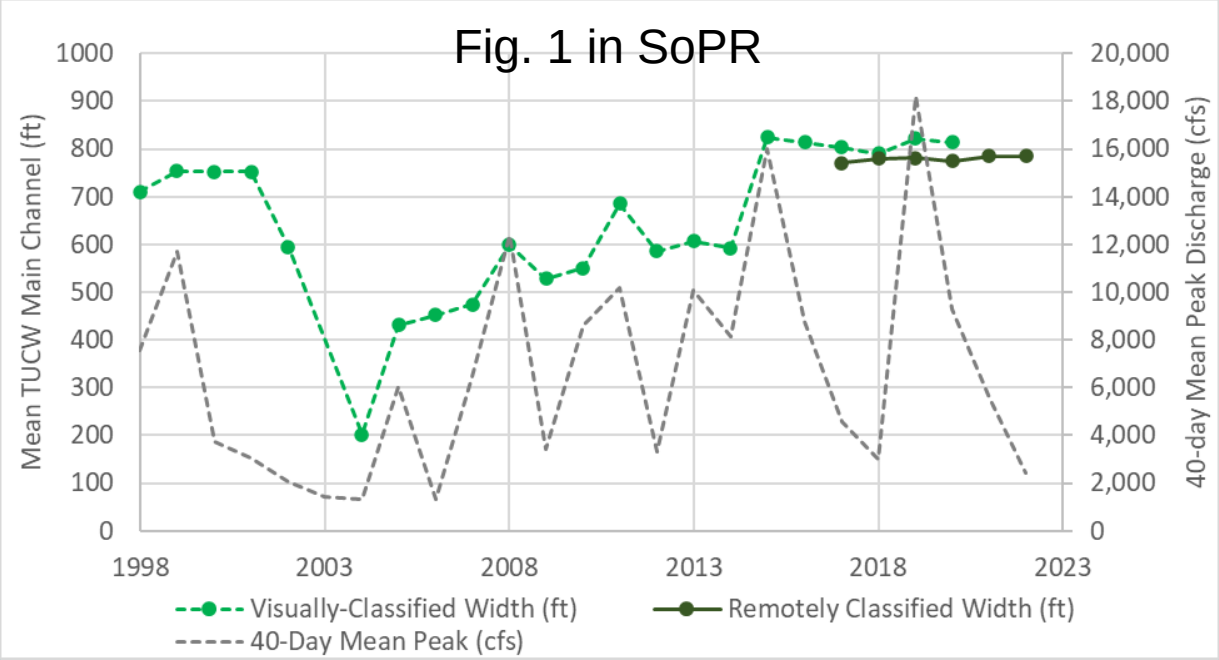
Using Program water to maintain channel widths (1)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ #1. How effective is it to use Program water to maintain suitable WC roosting habitat?	1a. Assess if AHR "habitat-limited" or "crane-limited".



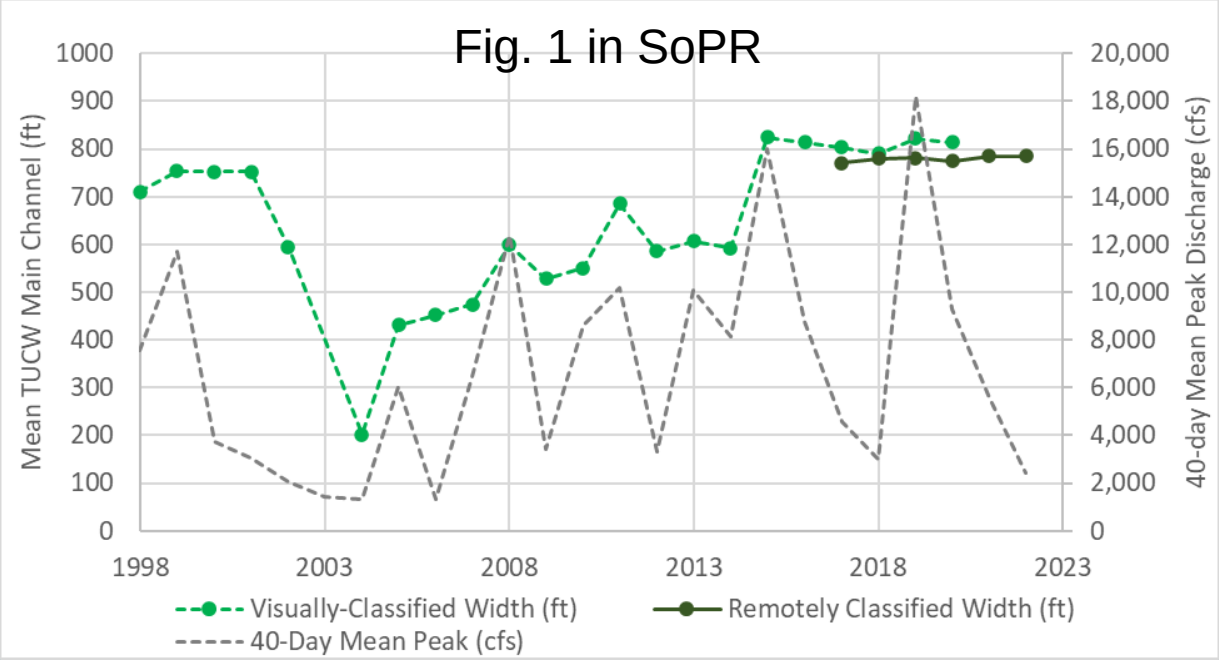
Using Program water to maintain channel widths (2)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ #1. How effective is it to use Program water to maintain suitable WC roosting habitat?	
	1b. Consider multiple factors affecting channel width: year to year variation in natural flow; inundation flows; mechanical mgmt.; herbicide. What's relative importance of each factor?

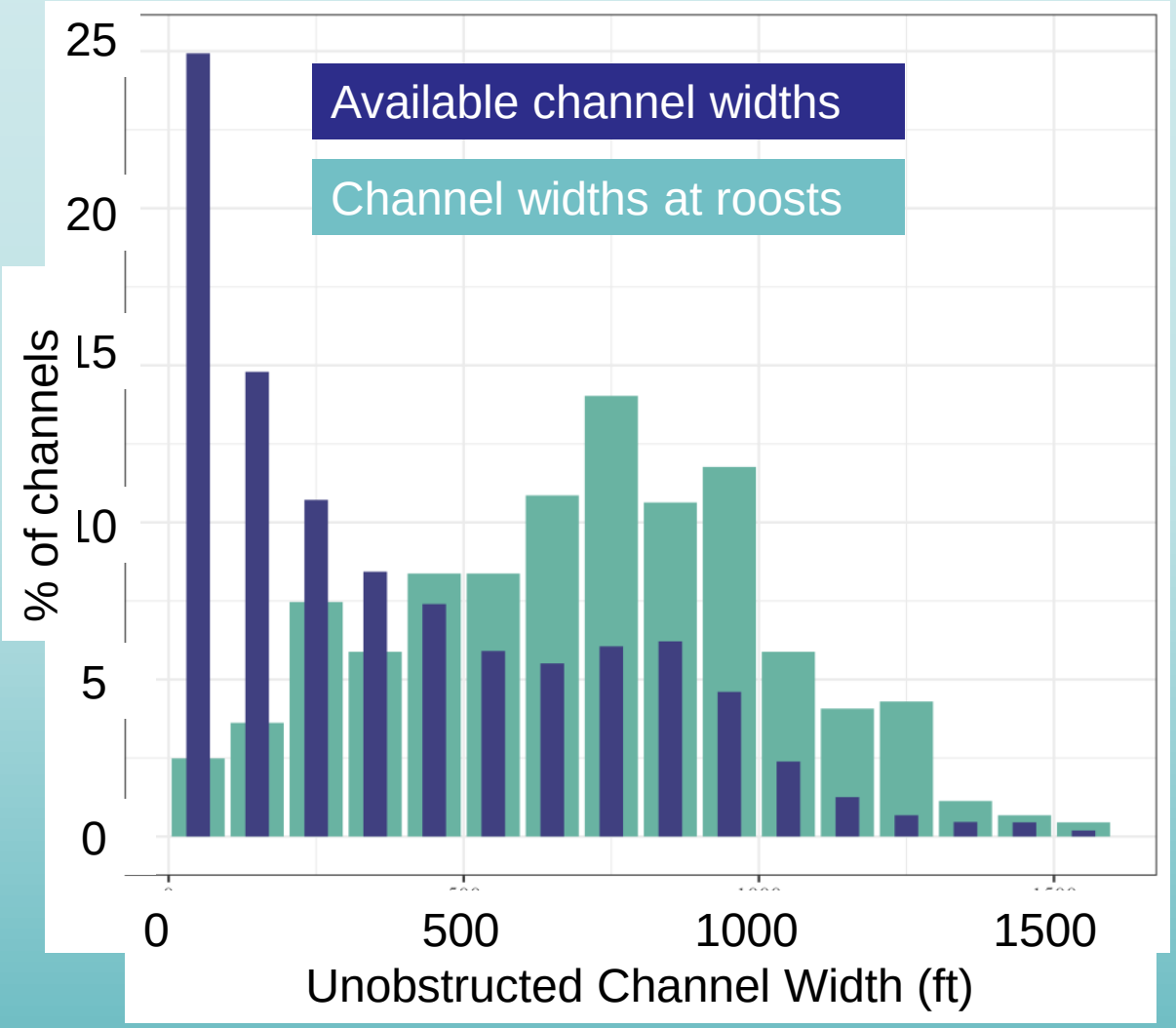


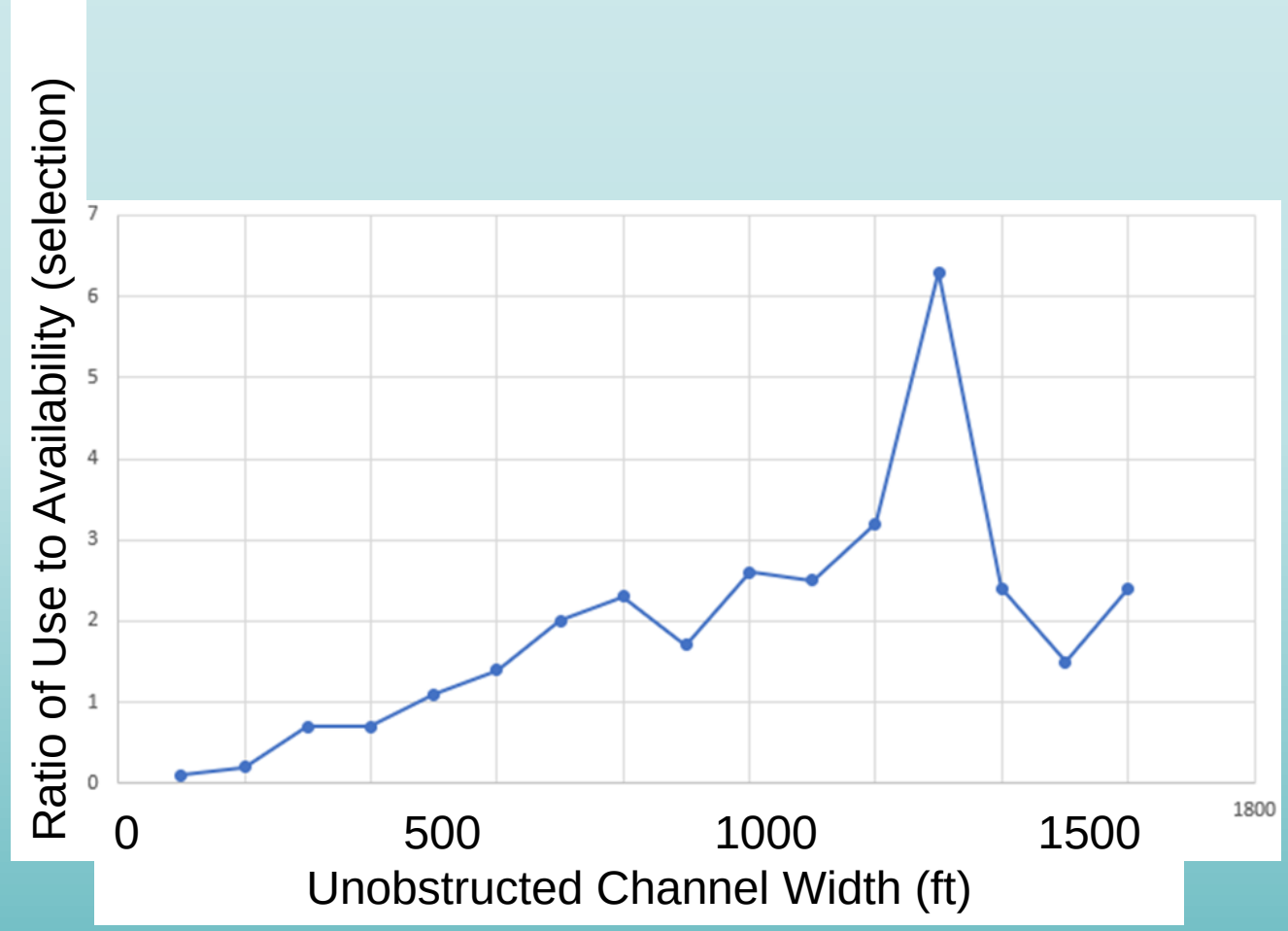
Using Program water to maintain channel widths (3)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ #1. How effective is it to use Program water to maintain suitable WC roosting habitat?	
	1c. Clarify use of different channel width metrics: UOCW, TUCW, MUCW. What are the appropriate targets for MUCW? Assess tradeoffs of different types of errors.



Using Program water to maintain channel widths (4)





Appendix 3 of WC Roost Site Selection Report

Ratio of use to availability. Derived from data in Appendix 4 of WC Roost Site Selection Report

Managing *Phragmites* to maintain WC habitat (1)

Decision Makers' Needs	**ISAC Comments & Recommendations**
EBQ #2. How effective is Program mgmt. of Phragmites for maintaining suitable WC roosting habitat?	2a. Will 2025 evaluation address past inconsistencies in herbicide application, and consequences for assessing effectiveness? How to resolve in future?

Chapman; October 2023

Managing *Phragmites* to maintain WC habitat (2)

Decision Makers' Needs	**ISAC Comments & Recommendations**
EBQ #2. How effective is Program mgmt. of Phragmites for maintaining suitable WC roosting habitat?	
	2b. Clarify to everyone that management objective is maintaining channel widths, not increasing them.

Chapman; October 2023

Managing *Phragmites* to maintain WC habitat (3)

Decision Makers' Needs	**ISAC Comments & Recommendations**
EBQ #2. How effective is Program mgmt. of Phragmites for maintaining suitable WC roosting habitat?	
	2c. Simultaneously assess relative effectiveness of inundation flows, mechanical mgmt. and herbicide [all parts of Program management].

Chapman; October 2023

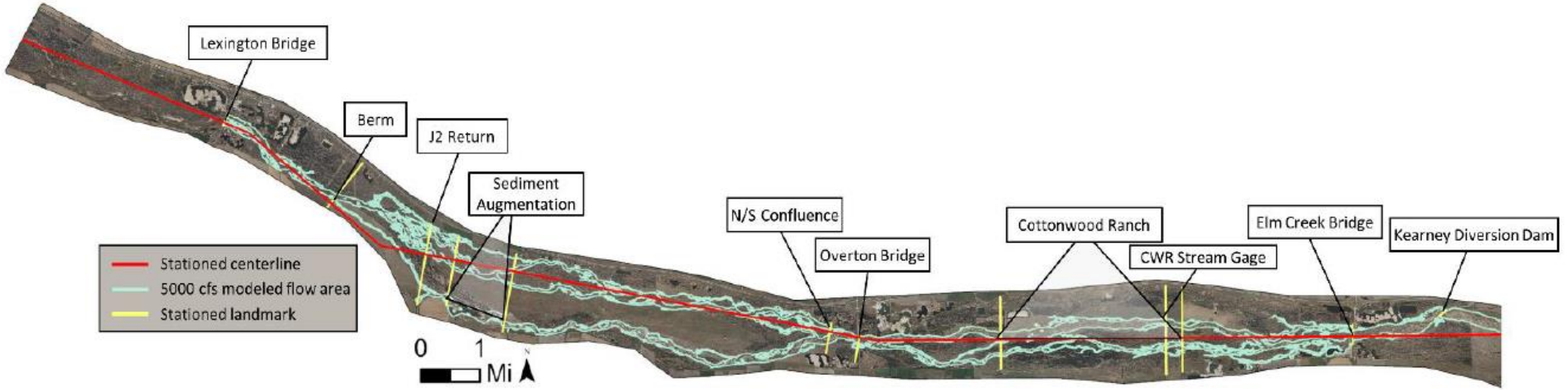
Managing *Phragmites* to maintain WC habitat (4)

Decision Makers' Needs	**ISAC Comments & Recommendations**
EBQ #2. How effective is Program mgmt. of Phragmites for maintaining suitable WC roosting habitat?	
	2d. Take advantage of spatial contrast in the level of inundation, using variation in channel widths, morphology, and tributary inputs. Think more about flow split at Rowe Sanctuary.

Chapman; October 2023

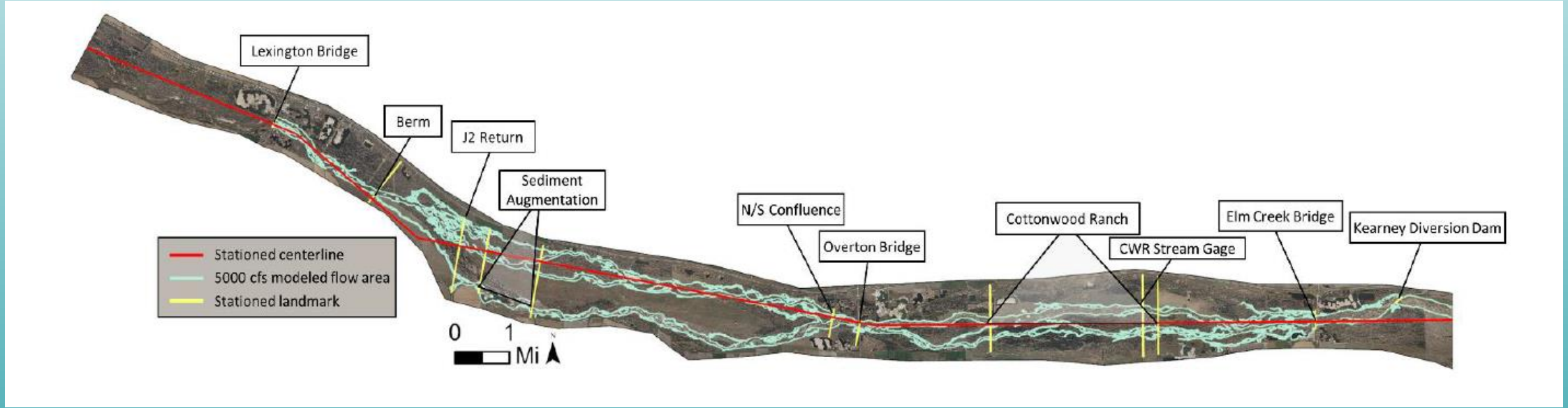
Sediment augmentation to maintain WC habitat (1)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ #3. Is sediment augmentation necessary to create and/or maintain suitable WC habitat?	3a. Data synthesis report is excellent. Will be even better after peer review.



Sediment augmentation to maintain WC habitat (2)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ #3. Is sediment augmentation necessary to create and/or maintain suitable WC habitat?	
	3b. Where specifically does Program want to maintain suitable WC habitat? Along the J2 channel? Downstream of Overton? Both?



Sediment augmentation to maintain WC habitat (3)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ #3. Is sediment augmentation necessary to create and/or maintain suitable WC habitat?	
	3c. Use EDO's dynamic approach to tracking annual need for augmentation and amount of sediment required. Look at sub-reach sediment budgets rather than all of J2 reach.
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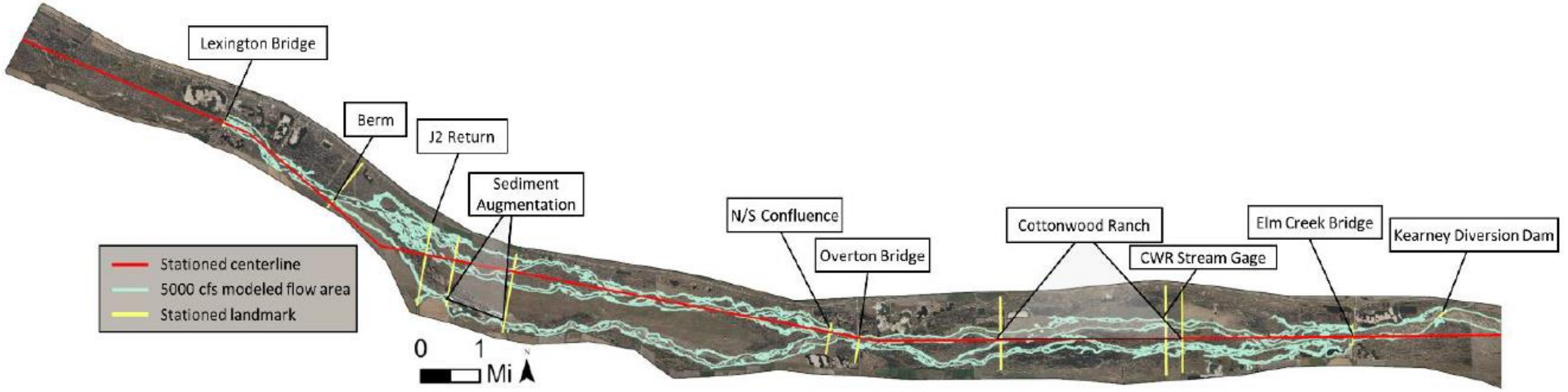
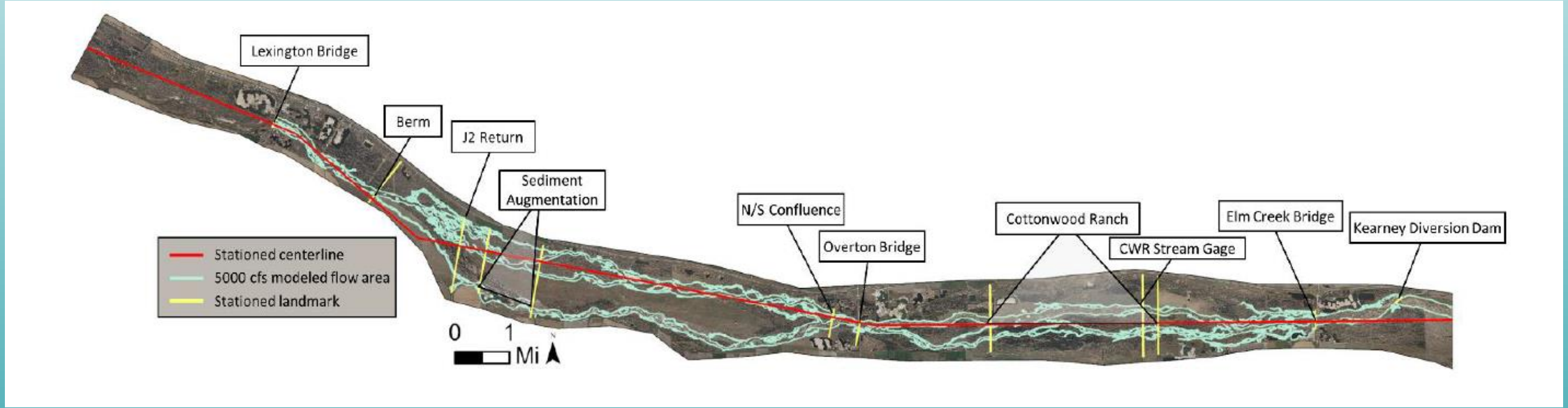


Sediment augmentation to maintain WC habitat (4)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ #3. Is sediment augmentation necessary to create and/or maintain suitable WC habitat?	
	3d. ISAC thinks the sand dam proposal would decrease, not increase sediment transport. Instead, examine sediment supplied by N. channel and by lateral migration of S. channel.



Factors influencing WC decisions to stop in AHR (1)

Decision Makers' Needs	**ISAC Comments & Recommendations**
EBQ-4. What factors influence WC decision to stop or fly over the AHR? Does flow matter? Should flow be used when birds are here to increase stopovers, or when birds are not here to maintain channel widths?	4a. Number of telemetered WCs will be declining. IF you want to assess WC responses to flow and other factors, THEN next few migration seasons will offer best opportunity.

Factors influencing WC decisions to stop in AHR (2)

Decision Makers' Needs	**ISAC Comments & Recommendations**
EBQ-4. What factors influence WC decision to stop or fly over the AHR? Does flow matter? Should flow be used when birds are here to increase stopovers, or when birds are not here to maintain channel widths?	
	4b. Use existing non-telemetry data as well as telemetry data to address EBQ-4.

Factors influencing WC decisions to stop in AHR (3)

Decision Makers' Needs	**ISAC Comments & Recommendations**
EBQ-4. What factors influence WC decision to stop or fly over the AHR? Does flow matter? Should flow be used when birds are here to increase stopovers, or when birds are not here to maintain channel widths?	
	4c. Describe the relative strengths of correlations with WC stopovers from **all** hypothesized factors (e.g., time of day, channel width), not just flow.

Factors influencing WC stopover length (1)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-5. What factors influence WC stopover length within the AHR?	5a. Crane groups can change membership and size over time. EDO and TAC should discuss ways to define groups and stopover length (which may correlate with group size).

Factors influencing WC stopover length (2)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-5. What factors influence WC stopover length within the AHR?	
	5b. Do WC's respond to flow *per se* or to factors like channel width and water depth?

Factors influencing WC stopover length (3)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-5. What factors influence WC stopover length within the AHR?	
	5c. Why give first roosts greater importance in statistical analyses than later roosts? Don't use confidence intervals to justify 'statistical similarity' (in roost site selection report).

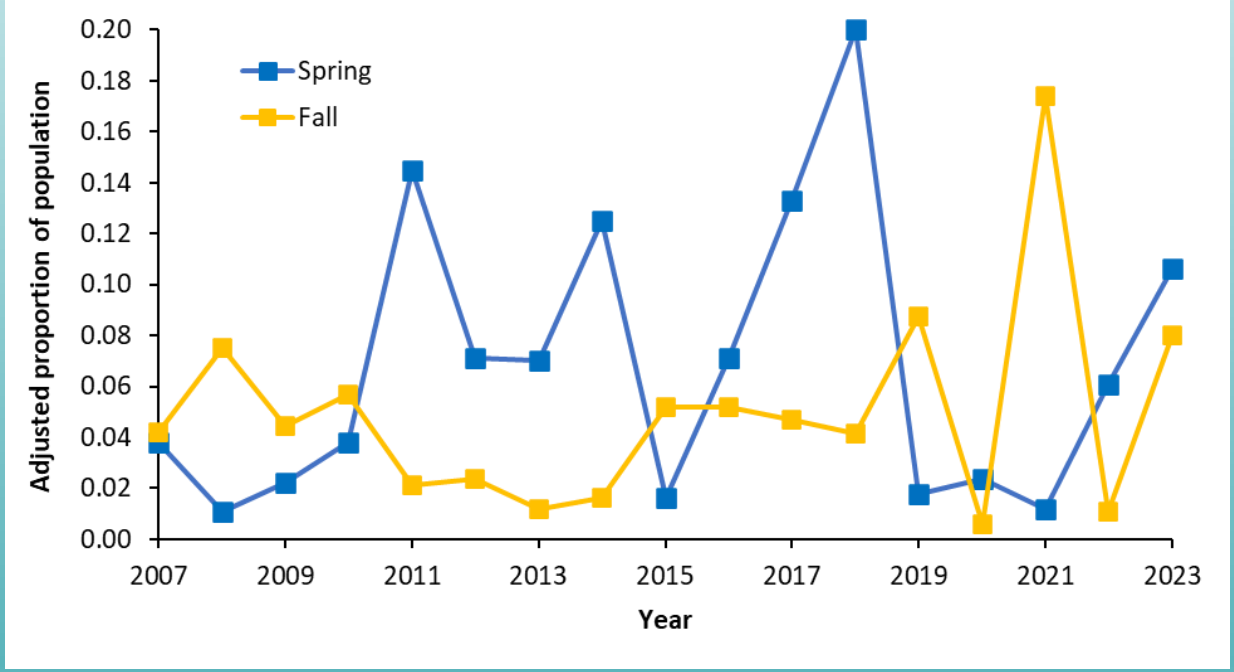
Factors influencing WC stopover length (4)

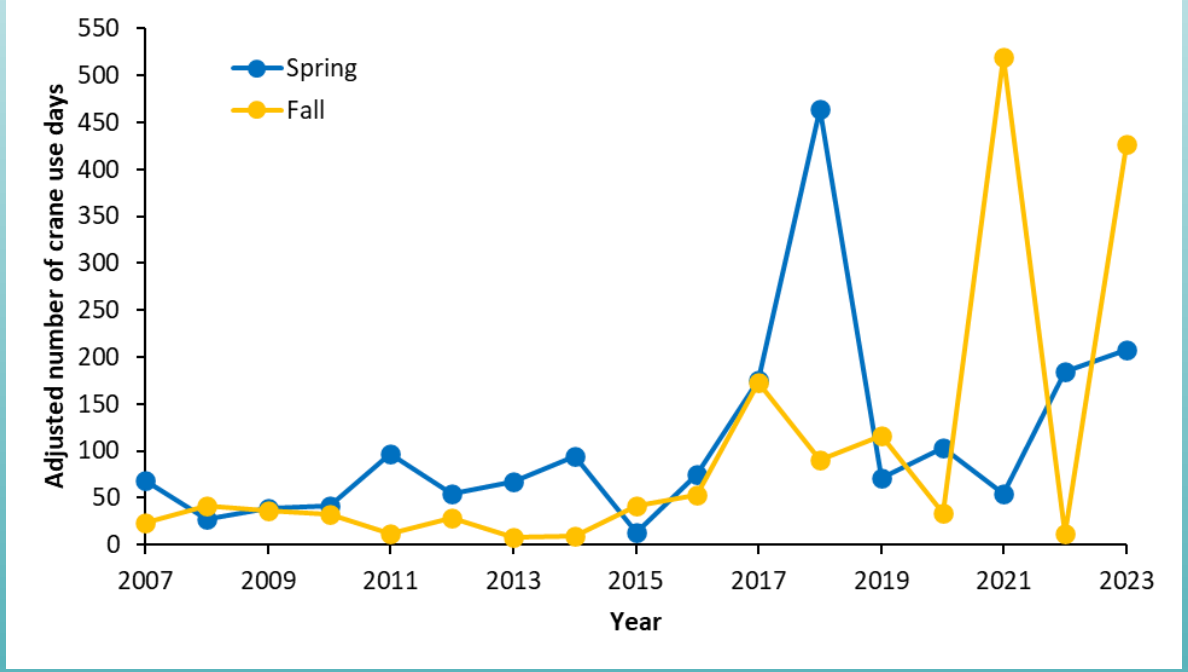
Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-5. What factors influence WC stopover length within the AHR?	
	5d. Consider the multiple sources of information presented in the roost site selection report when setting or modifying targets for channel widths.

Spring vs Fall use of AHR by WCs (1)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-6. Why is spring WC use of the AHR greater than fall WC use? When should water be put down the channel?	6a. Could address seasonality under EBQ-4 and EBQ-5, then remove this EBQ.

Fig.10 in SoPR

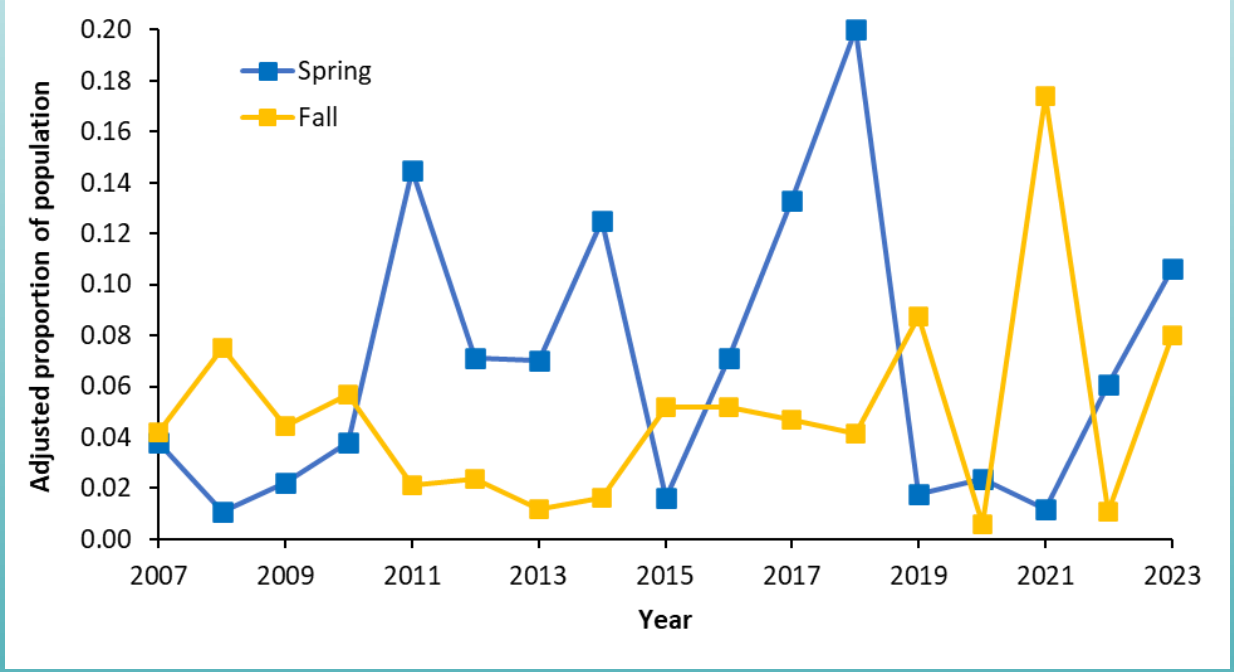


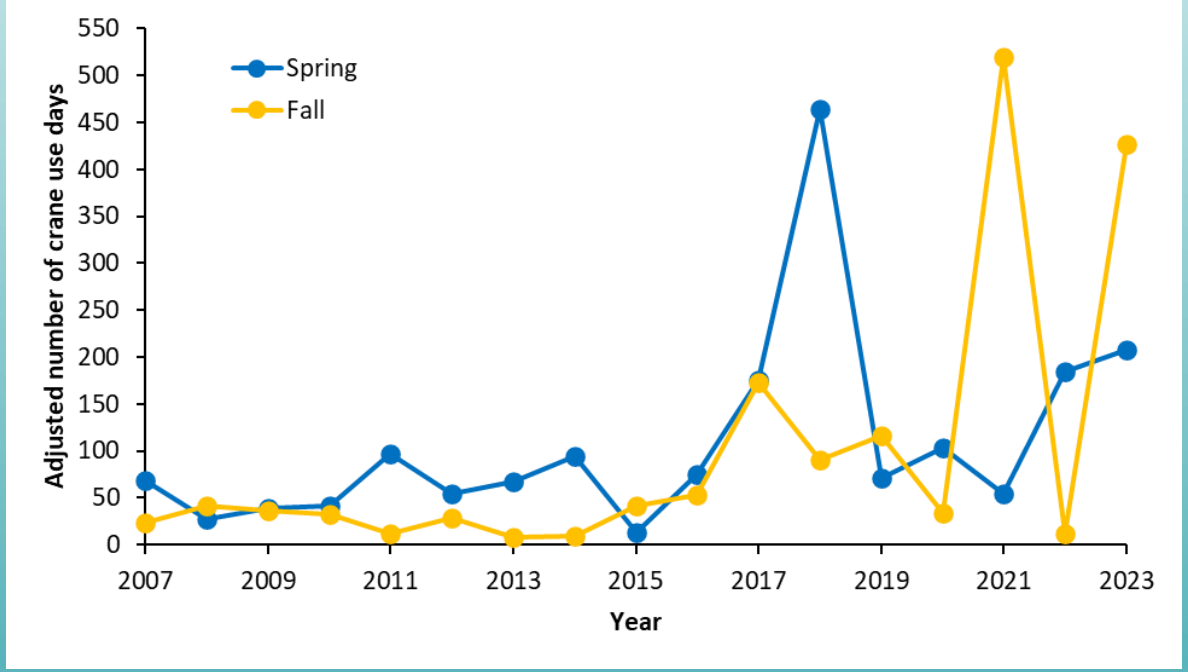


Spring vs Fall use of AHR by WCs (2)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-6. Why is spring WC use of the AHR greater than fall WC use? When should water be put down the channel?	
	6b. Not clear that use is higher in spring, but year to year variability is increasing. Why?

Fig.10 in SoPR

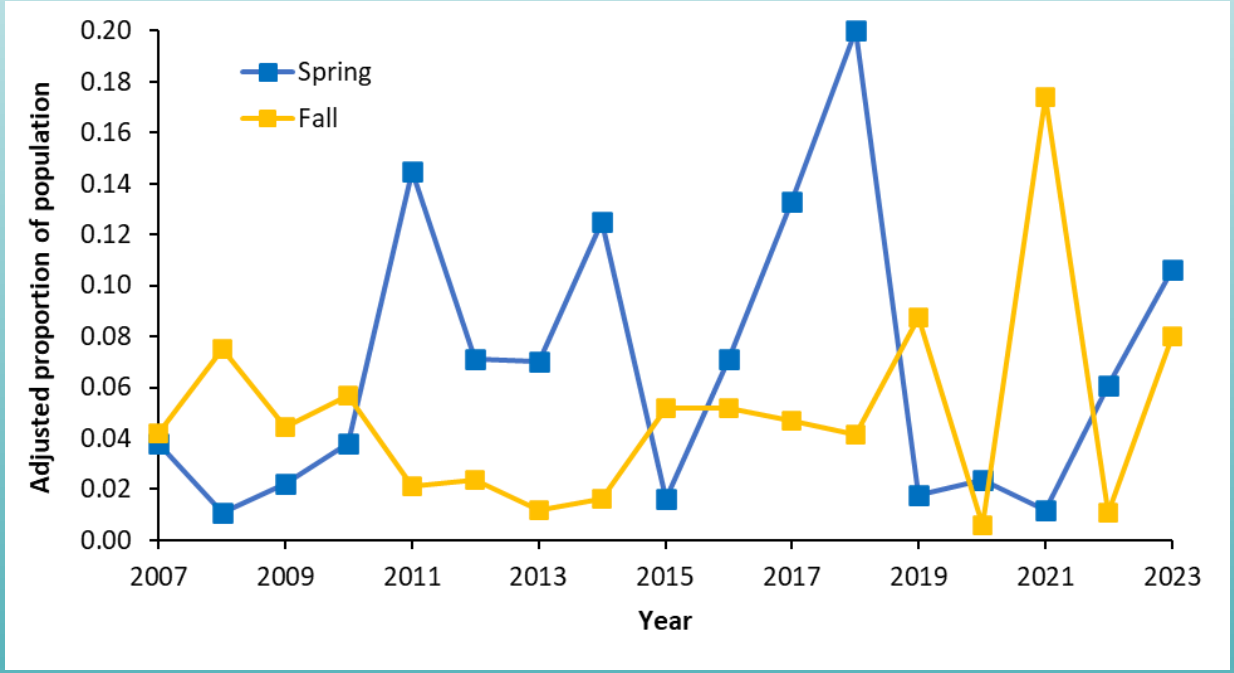


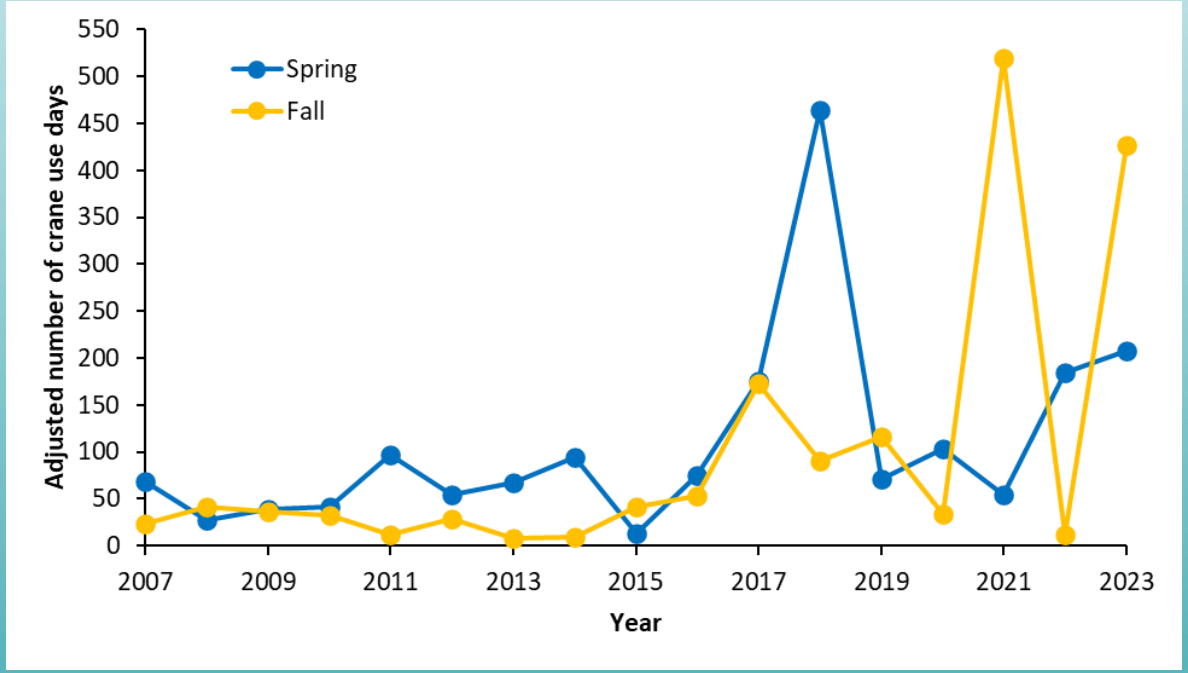


Spring vs Fall use of AHR by WCs (3)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-6. Why is spring WC use of the AHR greater than fall WC use? When should water be put down the channel?	
	6c. The two WC metrics are complimentary and communicate different things. Add *Average Length of Stay* as another indicator of habitat quality?

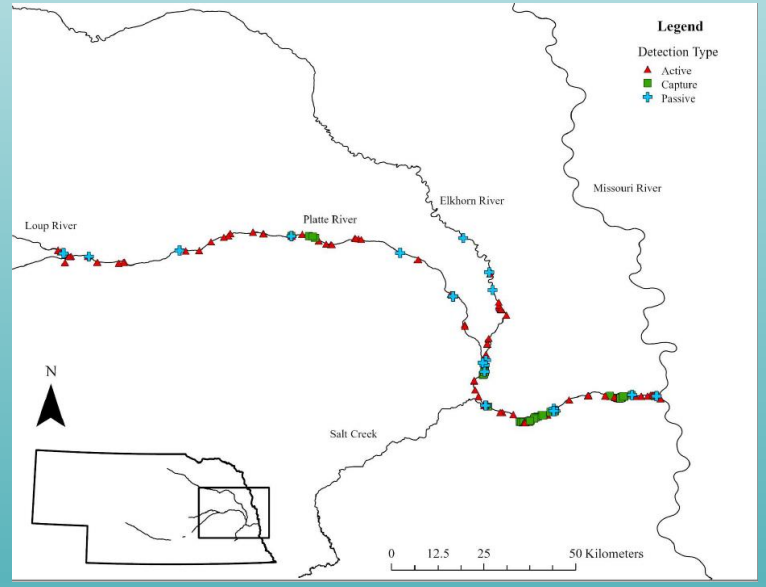
Fig.10 in SoPR





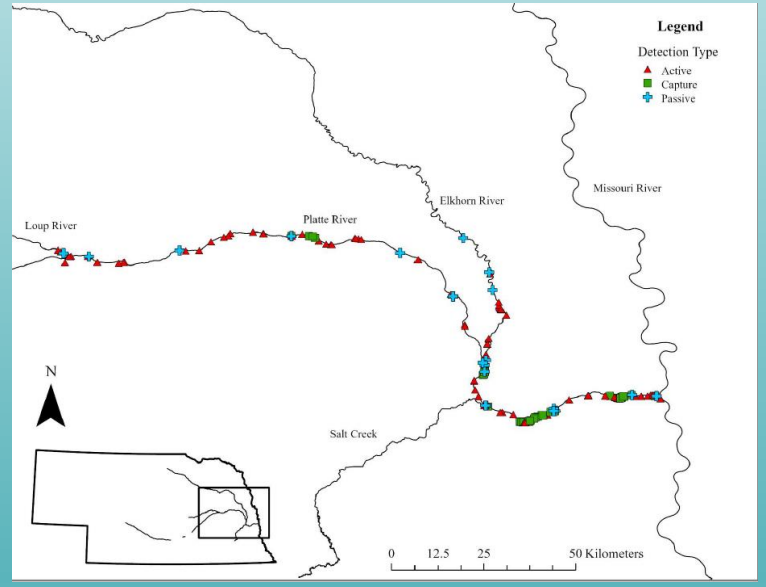
Effects of Program flow mgmt. on pallid sturgeon (1)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-7. What effect do Program flow management actions to benefit WC, PP, and LT in the central Platte River have on PS use of LPR?	7a. Objectives 2 and 3 (identify spawning habitat; verify spawning) are beyond capacity of UNL team. Focus on Obj. 1 - factors affecting migration into / out of Platte R and tribs.



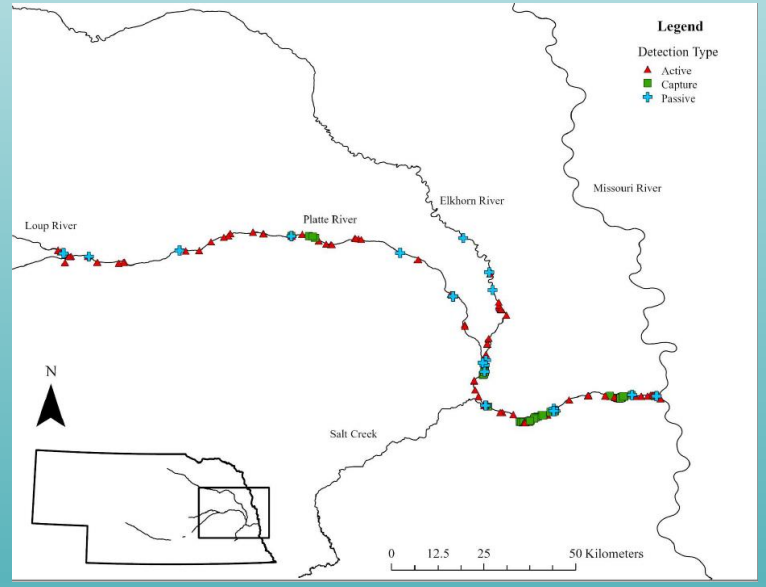
Effects of Program flow mgmt. on pallid sturgeon (2)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-7. What effect do Program flow management actions to benefit WC, PP, and LT in the central Platte River have on PS use of LPR?	
	7b. Temperature affects PS movement and spawning. Include temperature in HDR hydrologic model, ideally in 2D. How much Program water to change LPR temp by 1°C?



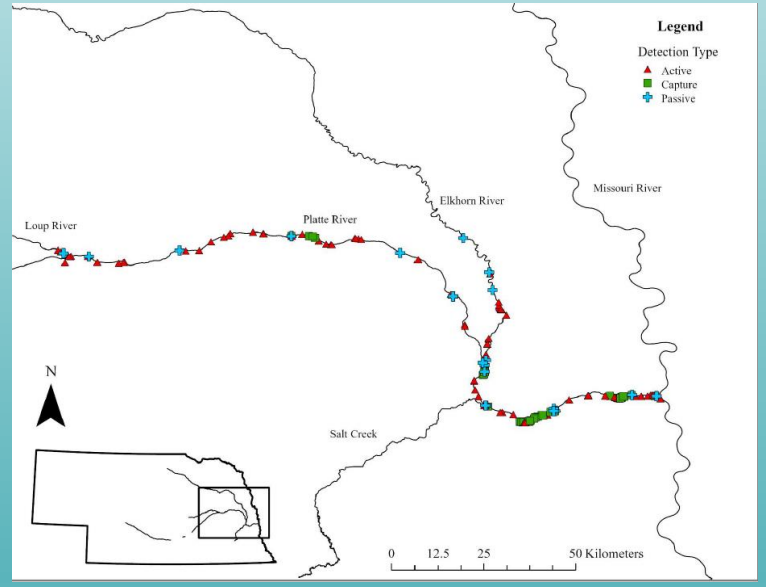
Effects of Program flow mgmt. on pallid sturgeon (3)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-7. What effect do Program flow management actions to benefit WC, PP, and LT in the central Platte River have on PS use of LPR?	
	7c. It's worthwhile continuing passive tracking of PS upstream of Elkhorn River to understand PS responses to flow and temperature, including in Loup River.



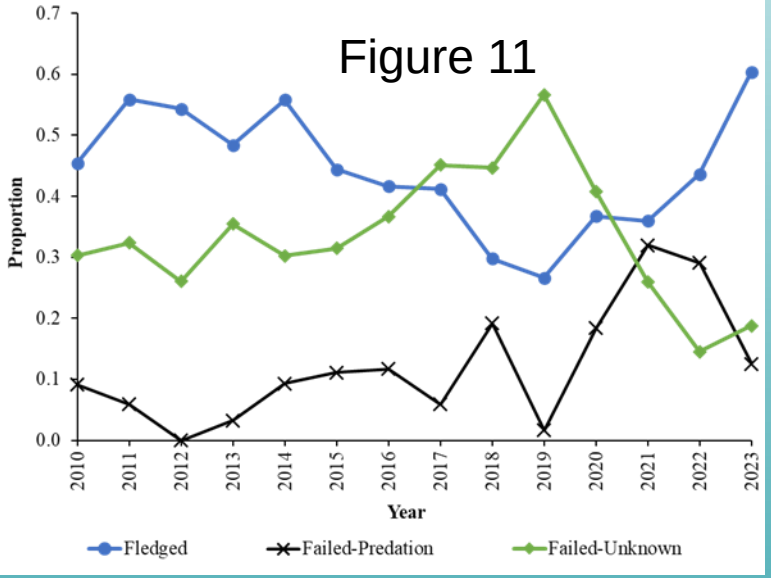
Effects of Program flow mgmt. on pallid sturgeon (4)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-7. What effect do Program flow management actions to benefit WC, PP, and LT in the central Platte River have on PS use of LPR?	
	7d. Explore how tribs and LMOR affect discharge and temperature in LPR. Understand past, present and future hydrologic conditions in LPR to explore potential effects on PS.



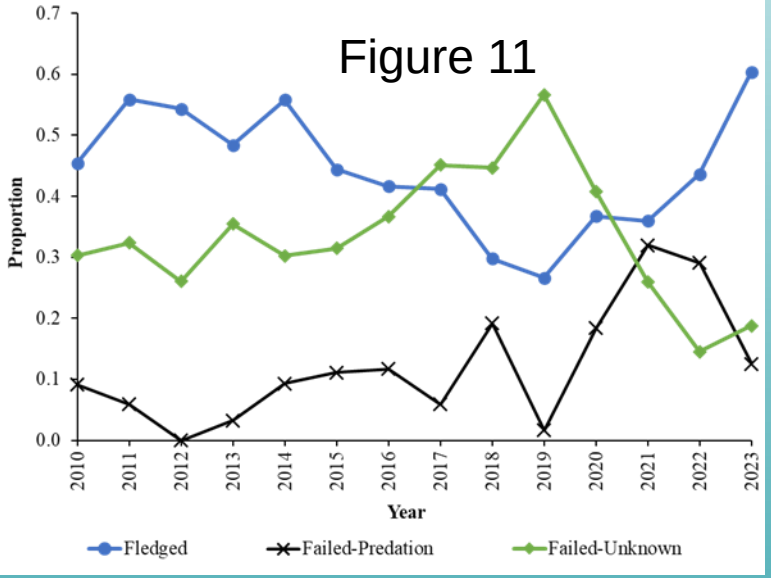
Effects of predation on piping plovers (1)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-8. How much of an effect does predation have on PP productivity (fledging)? *EBQ-9. How effective is Program mgmt. at mitigating losses of PP productivity due to predation?*	8a. Put Program findings in context. How does average 25% loss of productivity to predation compare with Missouri program, and to other peer-reviewed studies?



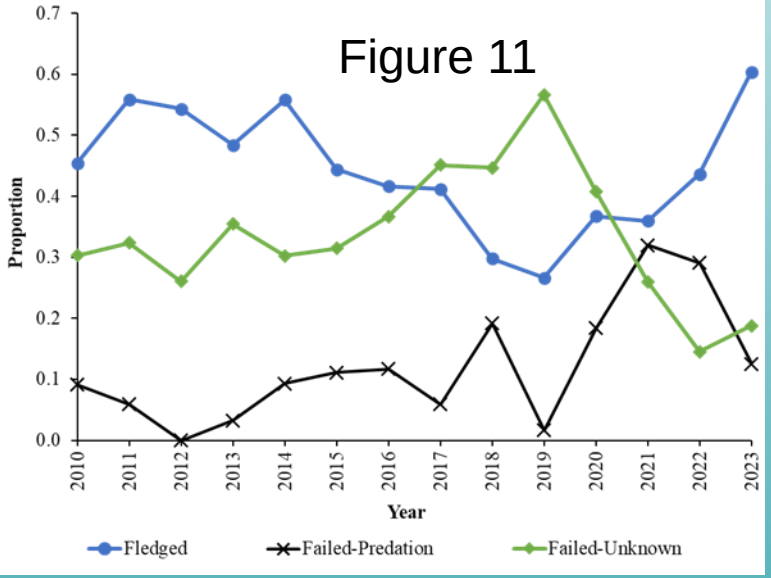
Effects of predation on piping plovers (2)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-8. How much of an effect does predation have on PP productivity (fledging)? *EBQ-9. How effective is Program mgmt. at mitigating losses of PP productivity due to predation?*	
	8b. Will scheduled 2024 evaluation of predator mgmt. examine wider range of factors affecting PP fledging besides nest predation? Compare cost-effectiveness of different predation control measures? Evaluate other options?



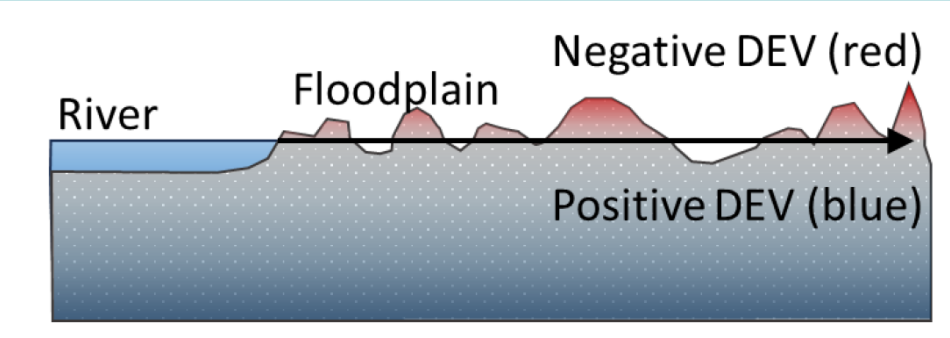
Effects of predation on piping plovers (3)

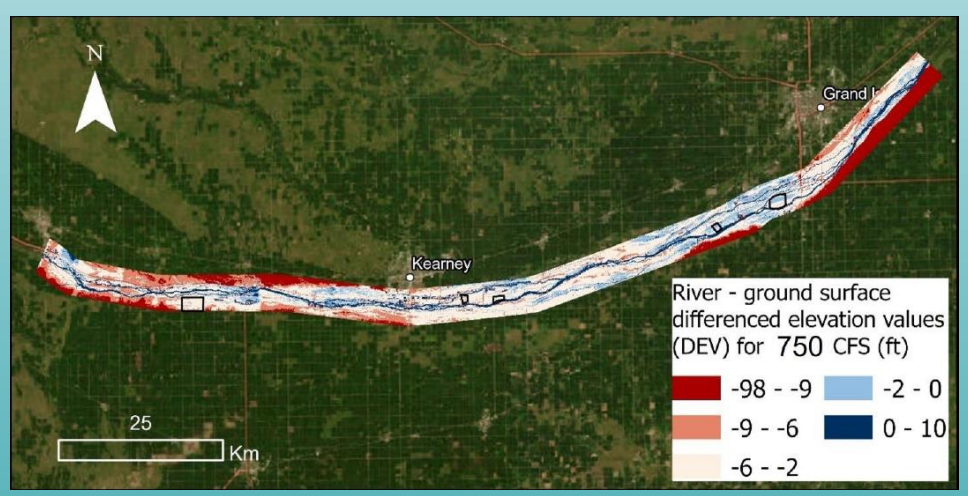
Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-8. How much of an effect does predation have on PP productivity (fledging)?	
EBQ-9. How effective is Program mgmt. at mitigating losses of PP productivity due to predation?	
	9a. Data that Program's collecting should help to answer EBQ-9, even though sand pits vary in their attributes. Start with the simplest possible analyses and then proceed as your small data set allows. Continue to use nest cameras.

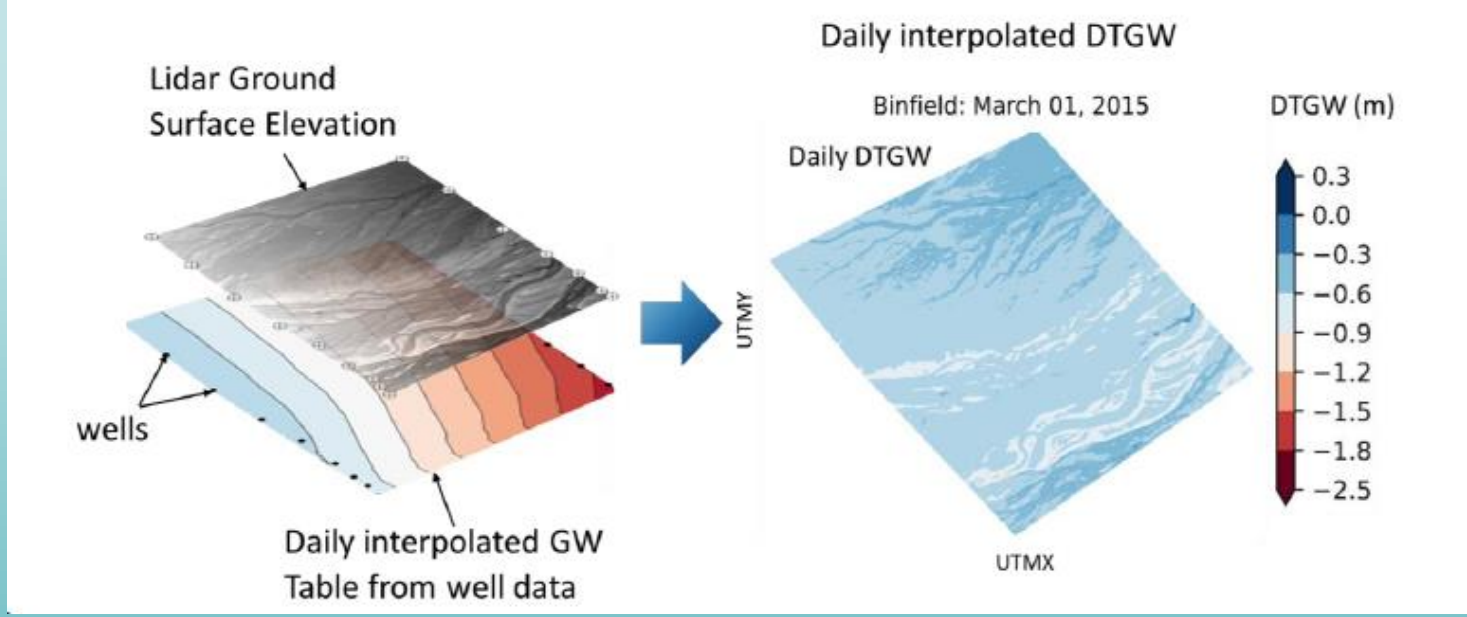


Wet meadows research (1)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-10. Wet meadows research	10a. Finish peer-review process. Converge to final GC-approved product.

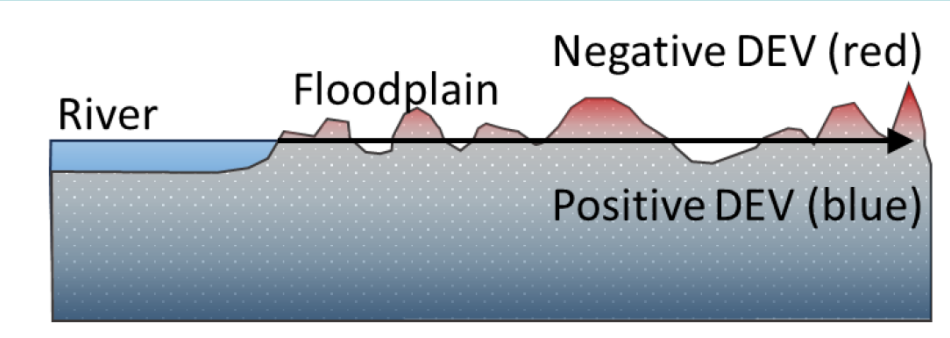


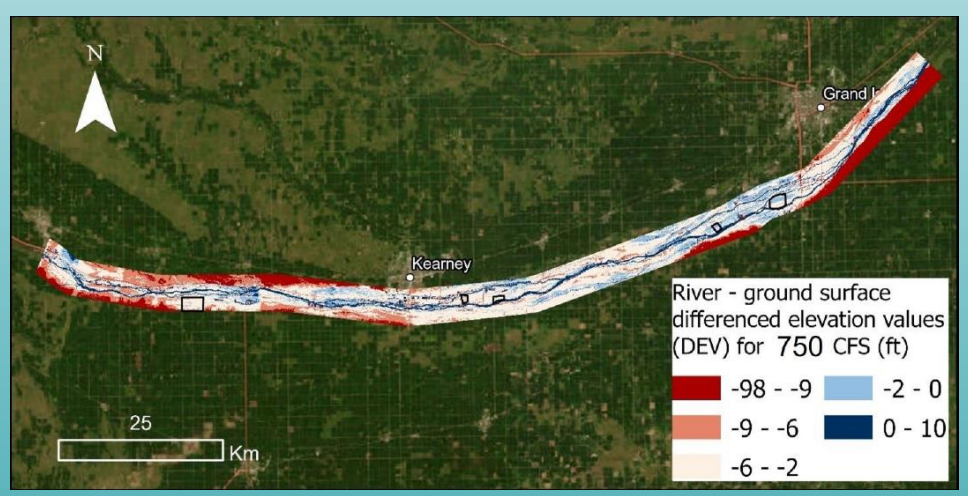


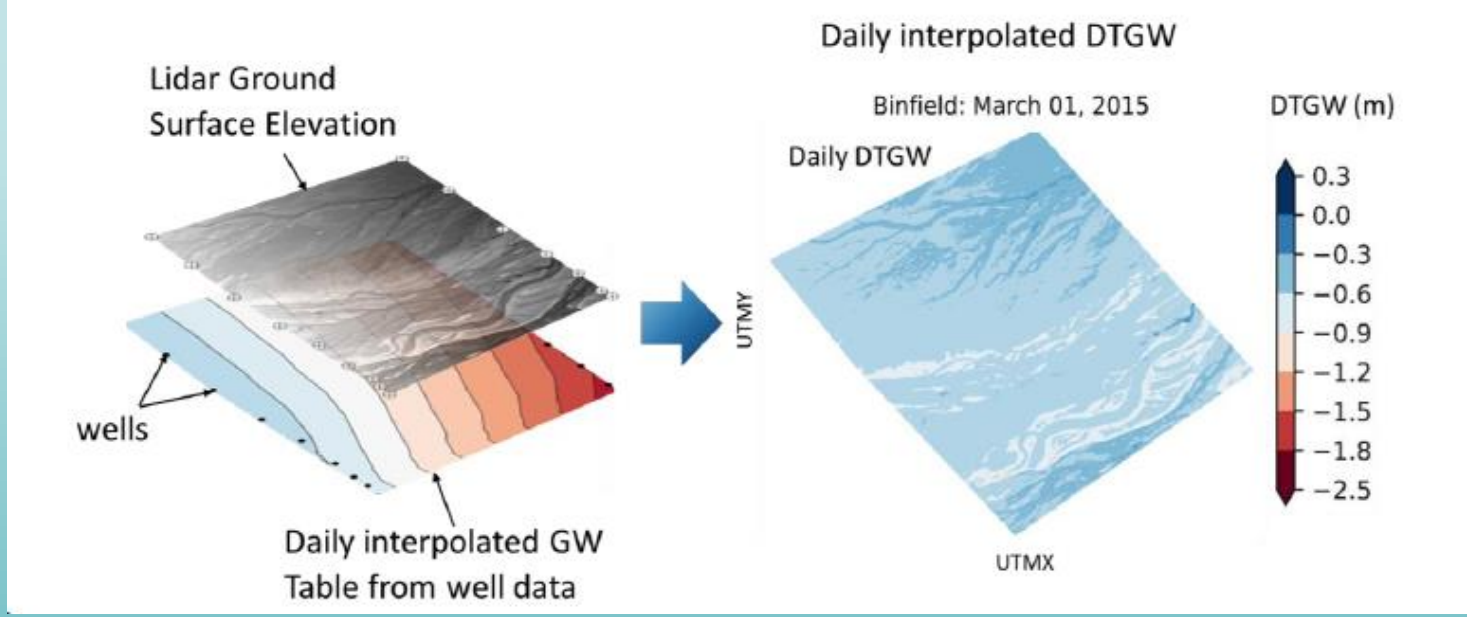


Wet meadows research (2)

Decision Makers' Needs	ISAC Comments & Recommendations
EBQ-10. Wet meadows research	
	10b. Given what you've learned, is it worth evaluating mechanical sculpting of wet meadows topography at existing / potential sites? Or would benefits not justify costs?







Thanks for listening!

Happy to answer your questions…