

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

**TO:** Technical Advisory Committee (TAC)  
**FROM:** Executive Director's Office  
**RE:** **ISAC Recommendations for 2024 Whooping Crane Roost Site Selection Technical Report**  
**DATE:** October 7, 2024

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Prior to the Science Plan Reporting Session in February 2024, the EDO presented the following questions about the WC Roost Site Selection Technical Report to the ISAC for feedback:

*6a) Are the conclusions regarding factors that impact whooping crane (WC) roost site selection within the Associated Habitat Reach (AHR) well-supported by the data, methods, analyses, and model selection techniques detailed in the WC Roost Site Selection Technical Report?*

*6b) Would you review this report favorably for publication?*

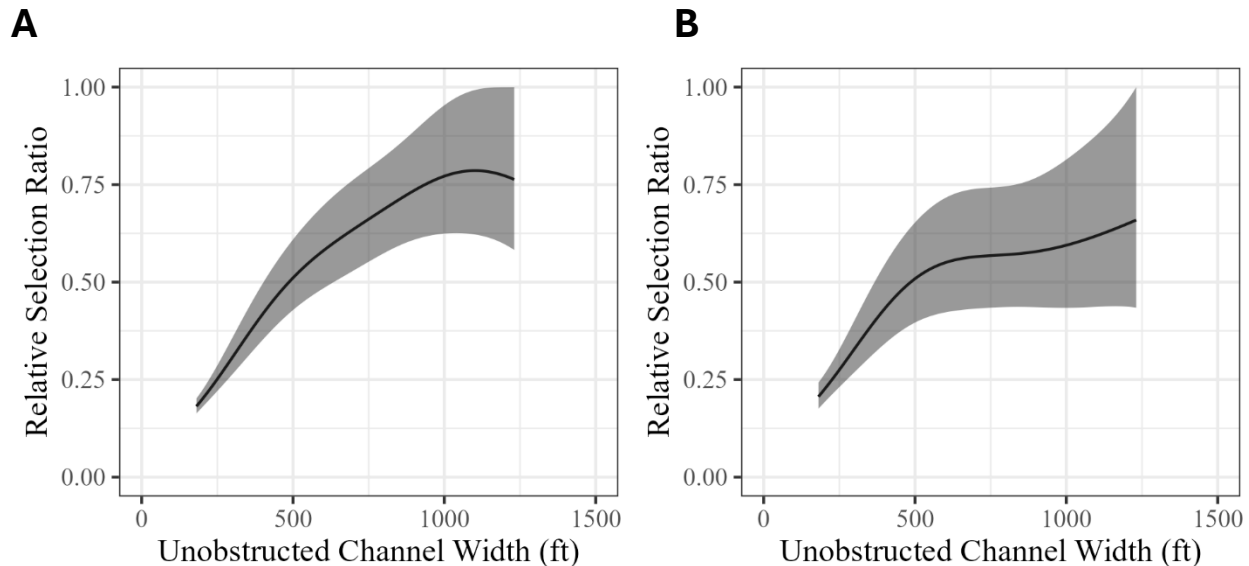
In April 2024, the ISAC provided answers to these questions ([Responses to ISAC Discussion Questions for the February 2024 SPRS](#)). The EDO followed up with [EDO Responses to ISAC Comments](#) and asked the ISAC to further clarify their recommendations at the Summer ISAC meeting in July 2024. Specifically, the EDO asked:

*Resource selection relationships (like the UOCW relationship in this report) could potentially be used in a SDM framework to estimate resource allocation tradeoffs. How might the Program assess the uncertainty (i.e., interpret confidence intervals) in these relationships as they relate to expected WC response to increasing levels (\$) of management? For example, how much confidence would you place in WC response to incremental increases in UOCW past 500ft, 650ft, 800ft, 1,000ft, etc.? What data would you use as SDM input for expected outcome? We anticipate the GC will want to understand confidence in “bang for buck” across the range of modeled WC response to management actions.*

The ISAC provided more specific guidance on this issue in their [ISAC Report: Responses to ISAC Discussion Questions for the July 2024 ISAC Meeting](#). Taken together, the ISAC recommended making four changes to the report to broaden the informational base from which conclusions are drawn, provide a method for estimating “bang for buck” and the confidence in that estimate for Program decision making, and to improve statistical methods to make them more consistent with anticipated requirements for future publication. These changes are summarized here for TAC discussion:

- 1) Use the same dataset for model selection and parameter estimation.
  - a. The report currently uses only first, unique roost locations for model selection and all roost locations (i.e. first roost and all subsequent roost locations for multiple day observations of same crane group) for parameter estimation to build the shape of the relationship.
  - b. Specific ISAC recommendations include:

- i. Bolster the reasons to only use the first, unique roost locations in model selection and parameter estimation in methods section (e.g. adhering to modeling assumptions, data continuity, etc.).
- ii. Report parameter estimations using only first, unique roost locations, which will change the selection relationships for explanatory variables including unobstructed channel width (Figure 1A and 1B).



**Figure 1. (A)** Relative selection ratios of unobstructed channel width for all whooping crane roosts, and **(B)** only first, unique roosts, collected by systematic aerial monitoring from spring 2001 – spring 2022 on the central Platte River in the Associated Habitat Reach. The solid lines represent the average relationships between the 5th and 95th percentile of each variable at roost locations, while the shaded area represent the 90% confidence interval.

- 2) Eliminate the use of overlapping confidence intervals to make conclusions about ‘statistical similarity’ when interpreting selection relationships.
  - a. Instead of overlapping confidence intervals, the Program should use bootstrapping to compare whether two values of an explanatory variable have similar selection by whooping cranes. For example, bootstrapping data inputs into the model used for inference would allow us to understand if selection at 650 ft of unobstructed channel width was similar to 1100 ft.
- 3) Integrate the multiple sources of information presented in the report (for example, Table 5, Appendix 3, and Appendix 4) together with thresholds from predicted relationships to better understand the WC roost site selection data and when making interpretations to inform management.



- 4) Evidence should be included to better understand the Program's contribution to roosting and conditions available for roosting by whooping cranes.
  - a. Identify how many roosts were in areas managed by the Program, compared to not managed by the Program.
  - b. Include distributions of important explanatory variables for areas of the channel managed by the Program, as well as areas not managed by the Program and understand if there are different conditions available for roosting based on ownership.

The EDO agrees with these changes and would like to incorporate them into an updated version of the report for TAC review before seeking final approval for the report. These changes would both increase the utility of the report for Program decision-making and produce a more publication-ready report.