

A photograph of a field with a deer and whooping cranes. The field is covered in dry, golden-brown grass. In the background, there are bare trees and a fence line. The sky is a pale blue.

Diurnal Habitat Selection of Whooping Cranes – Update

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January 2024 TAC Meeting

Past Actions



PRRIP – TAC Memorandum

08/29/2023

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

TO: Governance Committee (GC)
FROM: Technical Advisory Committee (TAC)
RE: *Whooping Crane (Grus americana) use patterns in relation to an ecotope classification in the Central Platte River Valley, Nebraska, USA.* (Ecotope Article)
DATE: August 29, 2023

A 2022 article in *Avian Conservation and Ecology* ([Baasch et al. 2022; Ecotope Article](#)) focused on whooping crane (WC) diurnal (daytime) use of the Program's Associated Habitat Reach (AHR), specifically addressing prior Program research ([Howlin and Nasman 2017; WEST Report](#)) that concluded WC select corn over wet meadows. The Ecotope Article authors hypothesized that these results were due to the Program's definition of wet meadows (Land Plan Table 1) that includes both upland and wetland landcover. The authors' developed new landcover classes that separated wetland and upland

COMPARISON TO RELEVANT/REFERENCED PRRIP RESEARCH	
Ecotope Article (2022)	WEST Report (2017)
Research Objective	
Analysis of off-channel whooping crane diurnal habitat use with a focus on finer-scale (ecotope-based) herbaceous and agricultural wetland landcover classes to evaluate selection of wetland versus upland components of the landscape as a potential explanation for discrepancies between AHR and corridor-wide diurnal habitat selection results.	Analysis of diurnal habitat selection by whooping cranes for the purpose of informing PRRIP habitat management.
Study Area	
PRRIP Associated Habitat Reach	PRRIP Associated Habitat Reach
Methods	
General: Use-availability likelihood using binomial family Generalized Linear Mixed-Effects Models (GLMM).	Use-availability likelihood using penalized regression splines to approximate functional response within a General Additive Model (GAM) framework.
Use Data: USFWS public sightings database & PTT-marked crane locations 1995-2015 &. All sightings >10 m outside high banks of any river channel with location accuracy estimated at ≤ 400 m. Total 306 public sightings and 41 PTT-marked locations.	PRRIP systematic aerial monitoring protocol fall 2022 to spring 2023. Limited to systematically detected WC groups with continuous observation data. Continuous data subsampled to include 1 roost location per crane group per day. Diurnal observations determined to be independent if separated by 2.5 hrs. Multiple observations weighted by length of time WC group spend in land cover type. 247 spring observations and 131 fall observations (278 total)

Current Efforts

Mid February

WEST Analysis Update

- 1 - Rerun WEST analysis without riverine locations using Ecotope landcover.
- 2 - Rerun WEST analysis with the Ecotope landcover.
- 3 - Rerun WEST analysis without riverine locations (original analysis landcover).

Ecotope Analysis Update

- 1 – Rerun with specific crop types
- 2 – Rerun with a discrete-choice framework
- 3 - Rerun Ecotope analysis with constrained available locations in a discrete-choice framework

Late February

- Memo to inform discussion at April 2024 TAC meeting