2022 INFORMS Annual Conference
October 16-19, 2022
Indianapolis, IN

Title: *Designing a research study to inform management decisions for waterfowl and wetlands*

Session: *Case Studies in Decision Analysis for Natural Resources Conservation and Management*

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Abstract: Water control structures create wetland habitat for wildlife but are expensive to maintain, and many are past their intended lifespans in Michigan. Michigan's Wildlife Division wants to understand the wildlife and recreational benefits of managed wetlands so they can make strategic management decisions. Waterfowl and wetland experts participated in a decision analysis workshop to clarify their management challenges, identify and prioritize factors influencing decisions, and clarify uncertainties. The workshop informed a study design to evaluate waterfowl and recreational use of managed wetlands; fieldwork which is ongoing and that will be integrated into a decision-support tool.

Bibliography:

Burgman, M. (2005). Logic trees and decisions. In *Risks and Decisions for Conservation and Environmental Management* (pp. 207–241). Cambridge University Press.

Gleason, M. G., Caselle, J. E., Heady, W. N., Saccomanno, V. R., Zimmerman, J., McHugh, T. A., & Eddy, N. (2021). *A Structured Approach for Kelp Restoration and Management Decisions in California*. https://www.scienceforconservation.org/assets/downloads/Kelp_StructuredDecisionMaking_Final_Report_April_2021.pdf

Gregory, R., Failing, L., Harston, M., Long, G., McDaniels, T., & Ohlson, D. (2012). *Structured decision making: A practical guide to environmental management choices*. John Wiley & Sons.

Hemming, V., Camaclang, A. E., Adams, M. S., Burgman, M., Carbeck, K., Carwardine, J., Chadès, I., Chalifour, L., Converse, S. J., Davidson, L. N. K., Garrard, G. E., Finn, R., Fleri, J. R., Huard, J., Mayfield, H. J., Madden, E. M., Naujokaitis-Lewis, I., Possingham, H. P., Rumpff, L., … Martin, T. G. (2022). An introduction to decision science for conservation. *Conservation Biology*, *October 2021*, 1–16. https://doi.org/10.1111/cobi.13868