

2022



**DUCKS UNLIMITED  
SCIENCE PUBLICATIONS**



## PEER-REVIEWED ARTICLES BY DUI STAFF

- Askren, R.J., **E.R. Massey**, **J.D. James**, and D.C. Osborne. 2022. Migration chronology and multi-scale habitat selection of wintering midcontinent greater white-fronted geese. [Global Ecology and Conservation 39:e02290](#).
- Kemink**, K., **K. Kuechle**, **M. Sieges**, **S. Krohn**, C. Isaacson, J. Palarski, N. Conrad, A. Nelson, **B. Liu**, T. Buhl, and S. Ellis-Felege. 2022. Nest remains are insufficient to identify predator species at waterfowl nests. [Wildlife Research 22042](#).
- Klimas, S.T., J.M. Osborn, A.P. Yetter, **J.D. Lancaster**, C.N. Jacques, A.M.V. Fournier, and H.M. Hagy. 2022. Food selection by spring-migrating green-winged teal. [Journal of Fish and Wildlife Management 13:155–168](#).
- Krainyk, A., J.E. Lyons, G.J. Soulliere, **J.M. Coluccy**, B.C. Wilson, **M.G. Brasher**, M.A. Al-Saffar, and **D.D. Humburg**. 2022. Structured decision making to rank North American Wetlands Conservation Act proposals within joint venture regions. [Journal of Fish and Wildlife Management 13:375–395](#).
- Kuechle**, K.J., E.B. Webb, D. Mengel, and A.R. Main. 2022. Seed treatments containing neonicotinoids and fungicides reduce aquatic insect richness and abundance in Midwestern USA-managed floodplain wetlands. [Environmental Science and Pollution Research 29:45261–45275](#).
- Martin**, M.E., K. Kelly, and D.R. Brown. 2021. Nonbreeding season ecology and behavior of Eastern Towhees. [Wilson Journal of Ornithology 133:215–225](#).
- Masto, N.M., O.J. Robinson, **M.G. Brasher**, A.C. Keever, A.G. Blake-Bradshaw, C.J. Highway, J.C. Feddersen, H.M. Hagy, D.C. Osborne, D.L. Combs, and B.S. Cohen. 2022. Citizen science reveals waterfowl responses to extreme winter weather. [Global Change Biology 28:54695479](#).
- Mitchell**, B.J., **C.V. Terry**, K.M. Ringelman, **K.M. Kemink**, M.J. Anteau, and A.K. Janke. 2022. Wetland occupancy by duck broods in cropland-dominated landscapes of the United States Prairie Pothole Region. [Journal of Wildlife Management e22347](#).
- Osorio, R.J., A. Linhoss, A. Skarke, **M.G. Brasher**, J. French, and R. Baghbani. 2022. Modeling wave climates and wave energy attenuation in marsh terrace environments in the northern Gulf of Mexico. [Ecological Engineering 176:106529](#).
- Ringelman, K.M., **M.G. Brasher**, J.R. Marty, D.A. Butler, S. McDowell, and R. Temple. 2022. Evaluation of light-logging geolocators to study mottled duck nesting ecology. [Journal of Fish and Wildlife Management 13:515–523](#).
- Ryckman, M.D., **K.M. Kemink**, C.J. Felege, B. Darby, G.S. Vandenberg, and S. Ellis-Felege. 2021. Behavioural responses of blue-winged teal and northern shoveler to unmanned aerial vehicle surveys. [PLOS ONE 17:e0262393](#).
- Sahour, H., **K.M. Kemink**, and J. O'Connell. 2022. Integrating SAR and optical remote sensing for conservation-targeted wetlands mapping. [Remote Sensing 14:159](#).
- Spears**, J.G., K.E. Wallen, and D.C. Osborne. 2022. Value similarity and trustworthiness predict support for waterfowl management policy. [Wildlife Society Bulletin 46:e1375](#).
- Stuber, E.F., O.J. Robinson, E.R. Bjerre, M.C. Otto, B.A. Millsap, G.S. Zimmerman, **M.G. Brasher**, K.M. Ringelman, A.M.V. Fournier, A. Yetter, J.E. Isola, and V. Ruiz-Gutierrez. 2022. The potential of semi-structured citizen science data as a supplement for conservation decision-making: Validating the performance of eBird against targeted avian monitoring efforts. [Biological Conservation 270:109556](#).

Wagner, M.R., M.L. Schummer, **G. Cripe**, **M. Halliday**, **J.M. Coluccy**, and **K.S. Fleming**. 2022. Land Protection Partnership in the Montezuma Wetlands Complex, New York, USA. [Case Studies in the Environment 6:1711654](#)



## PEER-REVIEWED ARTICLES FROM DUI-SUPPORTED RESEARCH

Bonczek, E.S., K.M. Ringelman, J.R. Marty, and S.A. Collins. 2022. Temporal variation and landcover influence survival in adult female mottled ducks. [Journal of Wildlife Management 86:e22247](#).



## TECHNICAL PLANS & REPORTS BY DUI STAFF

Hartley, M.J., and A.J. Weldon, editors. 2022. American Black Duck Conservation Plan. Atlantic Coast Joint Venture, [www.acjv.org/documents/ACJV-American-Black-Duck-Conservation-Plan.pdf](http://www.acjv.org/documents/ACJV-American-Black-Duck-Conservation-Plan.pdf)

Soulliere, G.J., B.A. Andres, **M.J. Petrie**, A. Mini, W. Vermillion, and J. Vest. 2022. Assessing Joint Venture approaches for integrated planning and habitat delivery across bird taxa. Unified Science Team and North American Waterfowl Management Plan Science Support Team Technical Report No. 2022-1. 20pp.

Soulliere, G.J., R.J. Gates, M.W. Eichholz, D.N. Ewert, J.N. Straub, W.E. Thogmartin, M.D. Nelson, **J.M. Coluccy**, F.A. Nelson, and D.R. Luukkonen. 2022. Evolution of the Upper Mississippi / Great Lakes Joint Venture Technical Committee and Science Team: 2003-2022 and a roadmap forward. Upper Mississippi River / Great Lakes Joint Venture Technical Committee Technical Report No. 2022-2.

Soulliere, G.J., **M.J. Petrie**, D.R. Eggeman, **D.D. Humburg**, **M.G. Brasher**, A.R. Gramza, J.C. Barnes, A.M. Bartuszevige, B.C. Wilson, K.A. Spragens, and B.A. Avers. 2022. Status of integrating human dimensions into Joint Venture bird conservation planning and habitat delivery. Unified Science Team and North American Waterfowl Management Plan Science Support Team, Technical Report No. 2022-02. 39pp.



## POPULAR ARTICLES BY DUI STAFF

**Brasher, M.G.** 2022. Status of waterfowl. Ducks Unlimited Magazine November/December:44-54.

**Coluccy, J.M.** 2022. Masters of the air and water. Ducks Unlimited Magazine March/April:32-33.

**James, D.J.** 2022. Prehistoric waterfowl. Ducks Unlimited Magazine July/August: 34-36.

Kaminski, R.M., **M.G. Brasher**, and N.M. Mastro. 2022. Will the ducks bounce back. Ducks Unlimited Magazine May/June 32-34.



## PEER-REVIEWED ARTICLES BY DUC STAFF

Berzins, L.L., C.A. Morrissey, **D.W. Howerter**, and R.G. Clark. 2022. Conserving wetlands in agroecosystems can sustain aerial insectivore productivity and survival. [Canadian Journal of Zoology 100:617-629](#).

**Bortolotti, L.E.**, **R.B. Emery**, **L.M. Armstrong**, and **D.W. Howerter**. 2022. Landscape composition, climate variability, and their interaction drive waterfowl nest survival in the Canadian Prairies. [Ecosphere 13:e3908](#).

- Creed, I.F., **P. Badiou**, E. Enanga, D.A. Lobb, J.K. Pattison-Williams, P. Lloyd-Smith, and **M. Gloutney**. 2022. Can restoration of freshwater mineral soil wetlands deliver nature-based solutions to agricultural landscapes? [Frontiers in Ecology and Evolution 10:932415](#).
- Delancey, E.R., A. Czekajlo, **L. Boychuk**, F. Gregory, M. Amani, B. Brisco, J. Kariyeva, and J.N. Hird. 2022. Creating a detailed wetland inventory with Sentinel-2 time-series data and Google Earth Engine in the Prairie Pothole Region of Canada. [Remote Sensing 14:3401](#).
- Dillon, R.M., **J.E. Paterson**, P. Manorome, K. Ritchie, L. Shirose, E. Slavik, and C.M. Davy. 2022. Seasonal and interspecific variation in the prevalence of *Ophidiomyces ophidiicola* and Ophidiomycosis in a community of free-ranging snakes. [Journal of Wildlife Diseases 58:791–802](#).
- Dyson, M.E., S.M. Slattery**, and B.C. Fedy. 2022. Multiscale nest-site selection of ducks in the Western Boreal Forest of Alberta. [Ecology and Evolution 12:e9139](#).
- Gutowky, S.E., G.J. Robertson, M.L. Mallory, **N.R. McLellan**, S.G. Gilliland, J. Paquet, A.A. d'Entremont, and R.A. Ronconi. 2022. Increased abundance and range expansion of harlequin ducks *Histrionicus histrionicus* wintering in Eastern Canada. [Endangered Species Research 49:187–198](#).
- Haque, A., G. Ali, and **P. Badiou**. 2022. Event-based analysis of wetland hydrologic response in the Prairie Pothole Region. [Journal of Hydrology 604:127237](#).
- Hjort Toms, A., L.V.T. Browning, S.Y.J. Angoh, **J.E. Paterson**, and C.M. Davy. 2022. Night moves: Nocturnal movements of endangered spotted turtles and Blanding's turtles. [Journal of Zoology 316:40–48](#).
- Holgerson, M.A., D.C. Richardson, J. Roith, **L.E. Bortolotti**, K. Finlay, D.J. Hornbach, K. Gurung, A. Ness, M.R. Andersen, S. Bansal, J.C. Finlay, J.A. Cianci-Gaskill, S. Hahn, B.D. Janke, C. McDonald, J.P. Mesman, R.L. North, C.O. Roberts, J.N. Sweetman, and J.R. Webb. 2022. Classifying mixing regimes in ponds and shallow lakes. [Water Resources Research 58:e2022WR032522](#).
- Kowal, P.D., P. Badiou, R.B. Emery**, L.G. Goldsborough, **D.A. Wrubleski, L.M. Armstrong**, and **B. Page**. 2022. Improvement in water clarity and submersed aquatic vegetation cover after exclusion of invasive common carp from a large coastal wetland, Delta Marsh, Manitoba. [Frontiers in Environmental Science 10:992690](#).
- Shiple, A.A.**, M.J. Sheriff, J.N. Pauli, and B. Zuckerberg. 2022. Weather and land cover create predictable “stress-scape” for a winter-adapted bird. [Landscape Ecology 37:779–793](#).
- Spares, A.D.**, M.J. Dadswell, **N.R. McLellan**, and M.J.W. Stokesbury. 2022. Opening the door: *Alosa pseudoharengus* (Alewife) passage through tide gates in two adjacent rivers on the Chignecto Isthmus, Bay of Fundy, Canada. [Northeastern Naturalist 29:239–261](#).
- Zhang, Z., F. Chen, M. Barlage, **L.E. Bortolotti**, J. Famiglietti, Z. Li, X. Ma, and Y. Li. 2022. Cooling effects revealed by modeling of wetlands and land-atmosphere interactions. [Water Resources Research 58:e2021WR030573](#).



**PEER-REVIEWED ARTICLES BY DUC-SUPPORTED RESEARCH**

- Norris, G.S., S.D.S. Virgin, D.W. Schneider, E.M. McCoy, J.M. Wilson, K.L. Morrill, L. Hayter, M.E. Hicks, and M.A. Barbeau. 2022. Patch-level processes of vegetation underlying site-level restoration patterns in a megatidal salt marsh. [Frontiers in Ecology and Evolution 10:1000075](#).

Srayko, S.H., T.D. Jardine, I.D. Phillips, and D.P. Chivers. 2022. Seasonal mass migration of water boatmen (Hemiptera: Corixidae) as wetland-river linkage and dietary subsidy to riverine fish. [Ecosystems 25:1571–1588](#).



## TECHNICAL PLANS & REPORTS BY DUC STAFF

Bansal, S., B.A. Tangen, R.A. Gleason, **P. Badiou**, and I.F. Creed. 2022. Land management strategies influence soil organic carbon stocks of prairie potholes of North America. Pages 273–285 in *Wetland carbon and environmental management*, Geophysical Monographs 267. John Wiley & Sons, New York, New York, USA.

Bowman, T.D., J.L. Churchill, C. Lepage, S.S. Badzinski, S.G. Gilliland, **N. McLellan**, and E. Silverman. 2022. Atlas of sea duck key habitat sites in North America. Sea Ducks Joint Venture, Anchorage, Alaska, USA.

**Page, B., P. Aminian, and O. Steele**. 2022. Determining the nutrient retention capacity of newly restored small wetlands in southwestern Ontario for a second water year. Ducks Unlimited Canada, Stonewall, Manitoba, Canada.

Stewart, D., **D. Hennigar, R. Ingham, and E. Balke**. 2022. Factors influencing the persistence of created tidal marshes in the Fraser River estuary. Ducks Unlimited Canada, Surrey, British Columbia, Canada.



## PEER-REVIEWED ARTICLES FROM DU FELLOWSHIP SUPPORT



Brown, J.I., R.J. Harrigan, and P. Lavretsky. 2022. Evolutionary and ecological drivers of local adaptation and speciation in a North American avian species complex. [Molecular Ecology 31:2578–2593](#).

Brown, J.I., F. Hernández, A. Engilis Jr., B.E. Hernández-Baños, D. Collins, and P. Lavretsky. 2022. Genomic and morphological data shed light on the complexities of shared ancestry between closely related duck species. [Scientific Reports 12:10212](#).

Clements, S.J., B.M. Ballard, G.R. Eccles, E.A. Sinnott, and M.D. Weegman. 2021. Trade-offs in performance of six lightweight automated tracking devices for birds. [Journal of Field Ornithology 92:506–517](#). (Published too late for 2021 publication list)

Clements, S.J., J.P. Loghry, B.M. Ballard, and M.D. Weegman. 2022. Carry-over effects of weather and decision-making on nest success of a migratory shorebird. [Ecology and Evolution 12:e9581](#).

Ellis, S.L., M.G. Lohman, J.S. Sedinger, P.J. Williams, and T.V. Riecke. 2022. Long-term trends and drought: Spatiotemporal variation in juvenile sex ratios of North American ducks. [Ecology and Evolution 12:e9099](#).

Koons, D.N., T.V. Riecke, G.S. Boomer, B.S. Sedinger, J.S. Sedinger, P.J. Williams, and T.W. Arnold. 2022. A niche for null models in adaptive resource management. [Ecology and Evolution 12:e8541](#).

Navarre, K.L., J.M. Warren, and D.N. Koons. 2022. Hydrology management influences nest survival but not clutch size in lesser scaup. [Avian Conservation & Ecology 17:29](#).

Riecke, T.V., M.G. Lohman, B.S. Sedinger, T.W. Arnold, C.L. Feldheim, D.N. Koons, F.C. Rohwer, M. Schaub, P.J. Williams, and J.S. Sedinger. 2022. Density-dependence produces spurious relationships among demographic parameters in a harvested species. [Journal of Animal Ecology 91:2261–2272](#).

Tarsa, E.E., B.M. Holdaway, and K.M. Kettenring. 2022. Tipping the balance: The role of seed density, abiotic filters, and priority effects in seed-based wetland restoration. [Ecological Applications 32:e2706](#).



## THESES & DISSERTATIONS FROM DU-SUPPORTED RESEARCH



Bonczek, E.S. 2022. Breeding ecology of mottled ducks in southwestern Louisiana. Dissertation, Louisiana State University, Baton Rouge, USA.

Clements, S.J. 2022. Ecology of mid-continent migratory shorebirds, performance of tracking devices, and modelling animal social structure and demography. Dissertation, University of Missouri, Columbia, USA.

Dittmer, E.M. 2022. Sanctuary and land cover use patterns by mallards: Dale Bumpers White River National Wildlife Refuge. Thesis, University of Arkansas at Monticello, USA.

Martinez Bonilla, E. 2022. A contrast of two novel deterrents of goose herbivory at Westham Island foreshore tidal marsh. Masters Project, Simon Fraser University/British Columbia Institute of Technology, Burnaby, Canada.

Tanguay, M.S. 2022. Wetland- and landscape-level effects on scoter (*Melanitta* spp.), and scaup (*Aythya* spp.) and macroinvertebrates in wetlands of the Central Mackenzie Valley, Northwest Territories. Thesis, University of Saskatchewan, Saskatoon, Canada.



**THREE COMPANIES WITH A SHARED MISSION:**

Ducks Unlimited conserves, restores and manages wetlands and associated habitats for North America's waterfowl. These habitats also benefit other wildlife and people.