



2019

**DUCKS UNLIMITED
SCIENCE PUBLICATIONS**



PEER-REVIEWED ARTICLES DIRECTED OR CO-DIRECTED BY DUI STAFF

- Brasher, M.G.**, J.J. Giocomo, D.A. Azure, A.M. Bartuszevige, **M.E. Flaspohler**, D.E. Harrigal, B.W. Olson, J.M. Pitre, **R.W. Renner**, S.E. Stephens, and J.L. Vest. 2019. The history and importance of private lands for waterfowl conservation in North America. *Wildlife Society Bulletin* 43:338–354.
- Kemink, K.M.**, **C.T. Gue**, C.R. Loesch, **R. Cressey**, **M. Sieges**, and M. Szymanski. 2019. Impacts of oil and gas development on duck broods. *Journal of Wildlife Management* 83:1485–1494.
- Krainyk, A., B.M. Ballard, **M.G. Brasher**, B.C. Wilson, M.W. Parr, and C.K. Edwards. 2019. Decision support tool: Mottled duck habitat management and conservation in the Western Gulf Coast. *Journal of Environmental Management* 230:43–52.
- Lewis, B.S., Jr., M.W. Eichholz, **T. Yerkes**, and **J.M. Coluccy**. 2019. Food resources for wintering and spring staging American black ducks. *Journal of Fish and Wildlife Management* 10:492–499.
- Lu, M., **E.R. Herbert**, A.J. Langley, M.L. Kirwan, and J.P. Megonigal. 2019. Nitrogen status regulates morphological adaptation of marsh plants to elevated CO₂. *Nature Climate Change*. 9:764–768.
- Toay, B.W.**, **K.M. Kemink**, and **R.R. Meidinger**. 2019. Breeding site fidelity of blue-winged teal in South Dakota. *Journal of Wildlife Management* 83:1143–1150.
- Widney, S.D. Smith, **E. Herbert**, J. Schubauer-Berigan; F. Li, S. Pennings, and C.B. Craft. 2019. Chronic but not acute saltwater intrusion leads to large releases of inorganic N in a tidal freshwater marsh. *Science of the Total Environment* 695 (2019) 133779.



TECHNICAL PLANS AND REPORTS AUTHORED OR CO-AUTHORED BY DUI STAFF

- Fleming, K.K., **M.K. Mitchell**, **M.G. Brasher**, **J.M. Coluccy**, **J.D. James**, **M.J. Petrie**, and **D.D. Humburg**, G.J. Soulliere. 2019. Derivation of regional, non-breeding duck population abundance objectives to inform conservation planning in North America — 2019 revision. North American Waterfowl Management Plan Science Support Team Technical Report No. 2019-01.
- Krainyk, A., J.E., Lyons, **M.G. Brasher**, **D.D. Humburg**, G.J. Soulliere, **J.M. Coluccy**, **M.J. Petrie**, D.W. Howerter, S.M. Slattery, M.B. Rice, and J.C. Fuller. 2019. Spatial integration of biological and social objectives to identify priority landscapes for waterfowl habitat conservation: U.S. Geological Survey Open-File Report 2019-1029, 41 p., <https://doi.org/10.3133/ofr20191029>.
- Kuechle, K.J.** 2019. Quantifying Neonicotinoid Concentrations in Missouri Wetlands and the Potential Effects to the Associated Avian Community. *The Bluebird*, 86:18–20.
- Kuechle, K.J.**, E.B. Webb, and D. Mengel. 2019. Factors Influencing Neonicotinoid Insecticide Concentrations in Missouri Floodplain Wetlands. *MDC Science Notes*, 14.
- Petrie, M.J.** 2019. Central Valley Joint Venture Implementation Plan, Chapter 9: Non-breeding waterfowl.
- Petrie, M.J.** 2019. Central Valley Joint Venture Implementation Plan, Chapter 11: Integrated bird objectives and habitat delivery.



POPULAR ARTICLES AUTHORED OR CO-AUTHORED BY DUI STAFF

- Blankenship, D.**, **M.J. Petrie**, and **G. Link**. 2019. Conserving California's wetlands. *DU Magazine* J/F.
- Brasher, M.G.** 2019. Where are the ducks? *DU Magazine* J/F.
- Ellis-Felege, S.N., **K. Kemink**, and **T. Gue**. 2019. Duck nesting ecology. *DU Magazine* M/A.
- Humburg, D.D.** 2019. Keep up with Arctic geese. *DU Magazine* J/A.
- James, J.D.** 2019. The art of deception. *DU Magazine* M/J.
- Jones Mahlum, B.**, and **J. Davis**. 2019. From the ground up. *DU Magazine* M/J.
- LeSchack, C.**, and **G. Tori**. 2019. 30 years, 30 million acres. *DU Magazine* N/D.
- Moorman, T.E.** 2019. The magic of migration. *DU Magazine* S/O.
- Reid, F.**, and S. Stephens. 2019. Protecting the Boreal Forest. *DU Magazine* N/D.



PEER-REVIEWED ARTICLES DIRECTED OR CO-DIRECTED BY DUC STAFF

- Badiou, P., B. Page, and L. Ross.** 2019. A comparison of water quality and greenhouse gas emissions in constructed wetlands and conventional retention basins with and without submerged macrophyte management for storm water regulation. *Ecological Engineering* 127:292–301.
- Brasher, M.G., J.J. Giocomo, D.A. Azure, A.M. Bartuszevige, M.E. Flashpohler, D.E. Harrigal, B.W. Olson, J.M. Pitre, R.W. Renner, **S.E. Stephens**, and J.L. Vest. 2019. The history and importance of private lands for North American waterfowl conservation. *Wildlife Society Bulletin* 43:338–354.
- Loder, A.L., I.S. Spooner, **N.R. McLellan**, J. Kurek, and M.L. Mallory. 2019. Water chemistry of managed freshwater wetlands on marine-derived soils in coastal Bay of Fundy, Canada. *Wetlands* 39:521–532.
- Mantyka-Pringle, C., L. Leston, D. Messmer, E. Asong, E.M. Bayne, **L.E. Bortolotti**, G. Sekulic, H. Wheeler, **D.W. Howerter**, and R.G. Clark. 2019. Antagonistic, synergistic and direct effects of land use and climate on prairie wetlands ecosystems: Ghosts of the past or present? *Diversity and Distributions* 25:1924–1940.
- Merchant, M.A., R.K. Warren, R. Edwards, and J.K. Kenyon.** 2019. An object-based assessment of multi-wave SAR, optical imagery and topographical datasets for operational wetland mapping in boreal Yukon, Canada. *Canadian Journal of Remote Sensing* 45:308–332.
- Morissette, J.L.,** E.M. Bayne, K.J. Kardynal, and K.A. Hobson. 2019. Regional variation in responses of wetland-associated bird communities to conversion of boreal forest to agriculture. *Avian Conservation & Ecology* 14:12.
- Slattery, S.M.,** and R.G. Clark. 2019. Annual survival in female white-winged scoters and lesser scaup. *Journal of Wildlife Management* 83:1151–1162.
- Tiné, M., L. Perez, R. Molowny-Horas, and **M. Darveau.** 2019. Hybrid spatiotemporal simulation of future changes in open wetlands: A study of the Abitibi-Témiscamingue region, Québec, Canada. *International Journal of Applied Earth Observation and Geoinformation* 74:302–313.
- Vickruck, J.L., L.R. Best, M.P. Gavin, **J.H. Devries**, and P. Galpern. 2019. Pothole wetlands provide reservoir habitat for native bees in prairie croplands. *Biological Conservation* 232:43–50.
- Wilson, H.F., N.J. Casson, A.J. Glenn, **P. Badiou**, and **L. Boychuk.** 2019. Landscape controls on nutrient export during snowmelt and an extreme rainfall runoff event in northern agricultural watersheds. *Journal of Environmental Quality* 48:841–849.
- Zhao, Q., T.W. Arnold, **J.H. Devries, D.W. Howerter**, R.G. Clark, and M.D. Weegman. 2019. Land-use change increases climatic vulnerability of migratory birds: Insights from integrated population modelling. *Journal of Animal Ecology* 88:1625–1637.



PEER-REVIEWED ARTICLES RESULTING FROM DUC STAFF SUPPORT

- Annich, N.C., E.M. Bayne, and C.A. Paszkowski. 2019. Identifying Canadian toad (*Anaxyrus hemiphysus*) habitat in northeastern Alberta, Canada. *Herpetological Conservation and Biology* 14:503–514.
- Lamb, J., P. Paton, J. Osenkowski, S. Badzinski, A. Berlin, T. Bowman, C. Dwyer, L. Fara, S. Gilliland, K. Kenow, C. Lepage, M. Mallory, G. Olsen, M. Perry, S. Petrie, J.-P. Savard, L. Savoy, M. Schummer, C. Spiegel, and S. McWilliams. 2019. Spatially-explicit network analysis reveals multi-species annual-cycle movement patterns of sea ducks. *Ecological Applications* 29: e01919.
- Sheppard, J.L., C.L. Amundson, T.W. Arnold, and D. Klee. 2019. Nesting ecology of a naturalized population of mallards *Anas platyrhynchos* in New Zealand. *Ibis* 161:504–520.



TECHNICAL PLANS AND REPORTS AUTHORED OR CO-AUTHORED BY DUC STAFF

- Krainyk, A., J.E. Lyons, M.G. Brasher, D.D. Humburg, G.J. Soulliere, J.M. Coluccy, M.J. Petrie, **D.W. Howerter, S.M. Slattery, M.B. Rice,** and J.C. Fuller. 2019. Spatial integration of biological and social objectives to identify priority landscapes for waterfowl habitat conservation. U.S. Geological Survey open-file report 2019-1029, Reston, Virginia, USA.
- North American Bird Conservation Initiative Canada. 2019. The state of Canada's birds, 2019. Environment and Climate Change Canada. Ottawa, Ontario, Canada. (**J.H. Devries**)
- Pearce, J.M., P.L. Flint, M.E. Whalen, S.A. Sonsthagen, J. Stiller, V.P. Patil, T. Bowman, S. Boyd, S.S. Badzinski, H.G. Gilchrist, S.G. Gilliland, C. Lepage, P. Loring, D. McAuley, **N.R. McLellan**, J. Osenkowski, E.T. Reed, A.J. Roberts, M.O. Robertson, T. Rothe, D.E. Safine, E.D. Silverman, and K. Spragens. 2019. Visualizing populations of North American sea ducks: Maps to guide research and management planning. U.S. Geological Survey open-file report 2019-1142, Reston, Virginia, USA.



OTHER DUC SUPPORTED LITERATURE

- Adde, A., D. Farina, L. Imbeau, and **M. Darveau**. 2019. Milieux humides et riverains dans cinq unite d'aménagement forestier exploitées par Rayonier Advanced Materials au Québec : portraits et enjeux. Canards Illimités Canada, Québec, QC, Canada.
- Christensen, M.**, and N. Vadeboncouer. Mud Bay monitoring report 2019. 2019. City of Surrey, British Columbia, Canada and The Federation of Canadian Municipalities, Ottawa, Ontario, Canada.
- Ducks Unlimited Canada. 2019. Wetland best management practices for forest management planning and operations: Practitioner guide. First edition. Forest Management and Wetland Stewardship Initiative, Edmonton, Alberta, Canada.
- Emmons & Olivier Resources Canada Inc. (EOR). 2019. Municipal conservation of wetlands for flood resiliency. Ducks Unlimited Canada, Barrie, Ontario, Canada.



POPULAR ARTICLES AUTHORED OR CO-AUTHORED BY DUC STAFF

- Devries, J.** 2019. A call to action for waterfowl. DU Magazine S/O.
- Mantyka-Pringle, C., **L. Bortolotti**, and L. Leston. Warmer, wetter climate benefits some birds as wetlands vanish. The Conversation. November 4, 2019. <https://theconversation.com/warmer-wetter-climate-benefits-some-birds-as-wetlands-vanish-124222>



PEER-REVIEWED ARTICLES RESULTING FROM DU FELLOWSHIP SUPPORT

- Bortolotti, L.E.**, V.L. St. Louis, and R.D. Vinebrooke. 2019. Drivers of ecosystem metabolism in restored and natural prairie wetlands. Canadian Journal of Fisheries and Aquatic Sciences 76:2396–2407.
- Dyson, M.E., **S.M. Slattery**, and B.C. Fedy. 2019. Microhabitat nest-site selection by ducks in the boreal forest. Journal of Field Ornithology 90:348–360.
- Janke, A.K., M.J. Anteau, and J.D. Stafford. 2019. Extreme climatic variability during migration invokes physiological and dietary plasticity among spring migrating ducks. Canadian Journal of Zoology 97:340–351.
- Janke, A.K., M.J. Anteau, and J.D. Stafford. 2019. Prairie wetlands confer consistent migrant refueling conditions across a gradient of agricultural land use intensities. Biological Conservation 229:99–112.
- Kuechle, K.J., E.B. Webb, D. Mengel, and A.R. Main. 2019. Factors influencing neonicotinoid insecticide concentrations in floodplain wetland sediments across Missouri. Environmental Science & Technology 53:10591–10600.
- Raquel, A.J., **J.H. Devries**, **D.W. Howerter**, and R.G. Clark. 2019. Reproductive consequences of climate variability in migratory birds: Evidence for species-specific responses to spring phenology and cross-seasonal effects. Oecologia 191:217–229.



THESES OR DISSERTATIONS FROM DU-SUPPORTED RESEARCH

- Cunningham, S.A. 2019. Decision-making and demography of greater white-fronted geese. Thesis, University of Missouri, Columbia, Missouri, USA.
- Dunham, K.D. 2019. Effects of uncertainty on conservation decisions and ecological inference. Dissertation, Auburn University, Auburn, Alabama, USA.
- Graham, K.A. 2019. Modeling waterfowl hunter and Ducks Unlimited member behavior using mark-recapture methods. Thesis, University of Nebraska, Lincoln, Nebraska, USA.
- Johns, D.W. 2019. From ecophysiology to ecoregions: Integrating patterns in waterfowl reproductive success across multiple scales. Dissertation, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.
- Masto, N.M. 2019. Evaluation of aerial surveys to monitor fall-winter waterbird populations in South Carolina. Thesis, Clemson University, Clemson, South Carolina, USA.
- Messmer, D.J. 2019. The role of climate variability in duck population ecology. Dissertation, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.
- Ricard, J. 2019. Influence des milieux humides et riverains sur les tracés de chemins forestiers. Thesis, Université Laval, Québec, Canada.