

*Curriculum Vitae*  
**Robert J. Gates**

**Associate Professor of Wildlife Ecology and Management**  
**School of Environment and Natural Resources**  
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***EDUCATION:***

Ph.D. 1989, Zoology 1989, Southern Illinois University at Carbondale  
M.S. 1984, Wildlife and Fisheries Management, Montana State University  
B.S. 1979, Wildlife and Fisheries Sciences, South Dakota State University

***ACADEMIC POSITIONS:***

7/98-Present: The Ohio State University (promoted to Associate Professor in 2001)  
8/90-6/98: Southern Illinois University at Carbondale (promoted to Associate Professor in 1995)  
1/89-5/90 Visiting Assistant Professor and Research Associate, Southern Illinois University at Carbondale

***RESEARCH INTERESTS:***

Population-habitat relationships of terrestrial vertebrates. Ecology and management of migratory birds and wetlands-associated wildlife; wetlands ecology and management, wildlife diseases.

***PEER-REVIEWED JOURNAL ARTICLES:***

- Shirkey, B. T, **R. J. Gates**. 2020. Survival, harvest, and Lincoln estimates of wood ducks banded in Ohio. *Journal of Fish and Wildlife Management* 11:185-195
- Shirkey, B. T, **R. J. Gates**, and M. D. Ervin. 2018. Survival rates and harvest patterns of Ohio-banded Canada geese (*Branta canadensis maxima*). *Wildlife Society Bulletin* 42:394-402
- Janke, A. K, T. M. Terhune II, **R. J. Gates**, and C. R. Long. 2017. Relationships between Northern Bobwhites and winter weather at their northern range periphery. *The Wildlife Society Bulletin* 41:479-488.
- Karns, G. A., **R. J. Gates**, S. N. Matthews, J. T. Bruskotter, J. C. McCoy, and M. J. Tonkovich. 2016. Factors influencing spatial heterogeneity of female white-tailed deer harvest dynamics. *The Wildlife Society Bulletin*. 40:758-763.
- Nolting, J. A. C. Fries, **R. J. Gates**, A. S. Bowman, and R. D. Slemons. 2015. Influenza A viruses from over-wintering and spring-migrating waterfowl in the Lake Erie Basin, United States. *Avian Diseases* 60:241-244.
- Karns, G. A., J. T. Bruskotter, and **R. J. Gates**. 2015. Explaining hunting participation in Ohio: a story of changing land use and new technology. *Human Dimensions of Wildlife* 20:484-500.
- Janke, A. K., **R. J. Gates**, and T. M. Terhune II. 2015. Habitat influences northern bobwhite survival at fine spatiotemporal scales. *The Condor: Ornithological Applications* 117:41-52.

- Janke, A. K., **R. J. Gates**, and M. J. Wiley. 2013. Covey membership and size dynamics in a low density population of northern bobwhites. *Wilson Journal of Ornithology* 125:833-840.
- Janke, A. K., and **R. J. Gates**. 2013. Home range and habitat selection of northern bobwhite coveys in an agriculture landscape. *Journal of Wildlife Management* 77:405-413.
- Straub, J. N., **R. J. Gates**, R. D. Schultheis, T. Yerkes, J. M. Coluccy, and J. D. Stafford. 2012. Wetland food resources for spring-migrating ducks in the Upper Mississippi River and Great Lakes Region. *Journal of Wildlife Management* 76:768-777.
- Murray, L.D., **R. J. Gates**, and R. M. Spinola. 2011. Evaluation of three methods to estimate density and detectability from roadside point counts. *Journal of Wildlife Management*. 75:1072-1081.
- Spinola, R. M., and **R. J. Gates**. 2008. Population status and trends of Northern Bobwhite (*Colinus virginianus*) in Ohio: 1984-2004. *Ohio Journal of Science* 108:26-30.
- Ramey, P.C., B.F. Blackwell, **R.J. Gates**, and R.D. Slemmons. 2008. Efficacy of oral rabies vaccination of a northern Ohio raccoon population: relevance of population density and pre-bait serology. *Journal of Wildlife Diseases* 44:553-568.
- Downs, J. A., **R.J. Gates**, and A.T. Murray. 2008. Estimating carrying capacity for sandhill cranes using habitat suitability index and spatial optimization models. *Ecological Modeling* 214:284-292.
- Brasher M. G., J. D. Steckel, and **R. J. Gates**. 2007. Energetic carrying capacity of actively and passively managed wetlands for migrating ducks in Ohio. *Journal of Wildlife Management* 71: 2532-2541.
- Roy-Nielsen C.L., **R.J. Gates**, and E.H. Zwicker. 2007. Projected availability of natural cavities for wood ducks in southern Illinois. *Journal of Wildlife Management* 71: 875-883.
- Roy-Nielsen, C.L., P. G. Parker, and **R. J. Gates**. 2008. Partial clutch predation, dilution of predation risk, and the evolution of intraspecific nest parasitism. *The Auk* 125:679-686.
- Roy-Nielsen, C.L., and **R. J. Gates**. 2007. Reduced nest predation of cavity nesting wood ducks during flooding in a bottomland hardwood forest. *Condor* 109: 210-215.
- Roy-Nielsen, C.L., P. G. Parker, and **R. J. Gates**. 2006. Intraspecific nest parasitism of cavity-nesting wood ducks: costs & benefits to hosts and parasites. *Animal Behaviour* 72:917-926.
- Roy-Nielsen, C.L., **R. J. Gates**, and P. G. Parker. 2006. Intraspecific nest parasitism of wood ducks in natural cavities: comparison with nest boxes. *Journal of Wildlife Management* 70:835-843.
- Welch, B.A., C.B. Davis, and **R. J. Gates**. 2006. Dominant environmental factors in wetland plant communities invaded by *Phragmites australis* in East Harbor, Ohio USA. *Wetlands Ecology and Management* 14:511-525.

- Gates, R. J.**, D. F. Caithamer, W. E. Moritz, and T. C. Tacha. 2001. Bioenergetics and nutrition of the Mississippi Valley Population of Canada geese during winter and migration. Wildlife Monographs No. 146. 65 pp.
- Wheeler W.E., and **R. J. Gates**. 1999. Spatial and temporal variation in lead levels related to body condition in the Mississippi Valley Population of Canada geese. Journal of Wildlife Diseases 35: 178-186.
- Ryan, D. C., R. J. Kawula, and **R. J. Gates**. 1998. Breeding biology of wood ducks using natural cavities in southern Illinois. Journal of Wildlife Management 62:112-123.
- Basinger, M.A., J. S. Huston, **R. J. Gates**, and P. A. Robertson. 1997. Vascular flora of Horseshoe Lake Conservation Area, Alexander County, Illinois. Castanea. 62:82-99.
- Russell, L. D., M. Kershaw, K. E. Borg, A. El Shennawy, S. S. Rulli, **R. J. Gates**, and R. S. Calandra. 1998. Hormonal regulation of spermatogenesis in the hypophysectomized rat: FSH maintenance of cellular viability during pubertal spermatogenesis. Journal of Andrology 19:308-319.
- El Shennawy, A., **R. J. Gates**, and L. D. Russell. 1998. Hormonal regulation of spermatogenesis in the hypophysectomized rat: cell viability after hormonal replacement in adults after intermediate periods of hypophysectomy. Journal of Andrology 19:320-334.
- Franca, L. R., G. G. Parreira, **R. J. Gates**, and L. D. Russell. 1998. Hormonal regulation of spermatogenesis in the hypophysectomized rat: quantitation of germ cell population and effect of elimination of residual testosterone after long-term hypophysectomy. Journal of Andrology 19:335-342.
- Caithamer D.F., **R. J. Gates**, and T. C. Tacha. 1996. A comparison of diurnal time budgets from paired Interior Canada Geese with and without offspring. Journal of Field Ornithology 67:105-113.
- Moore, M.K., L. Cicnjak-Chubbs, and **Gates, R.J.** 1994. A new selective enrichment procedure for isolating *Pasteurella multocida* from avian and environmental samples." Avian Diseases. 38:317-324.
- Caithamer, D.F., **R. J. Gates**, J.D. Hardy, and T. C. Tacha. 1993. Field identification of age and sex of interior Canada geese. Wildlife Society Bulletin 21:480-487.
- Gates, R.J.**, D. F. Caithamer, T.C. Tacha, and C. R. Paine. 1993. The annual molt cycle of *Branta canadensis-interior* in relation to nutrient reserve dynamics. Condor 95:680-693.
- Gates, R.J.**, A. Woolf, D. F. Caithamer, and W. E Moritz. 1992. Prevalence of spindle cell sarcomas among wild Canada geese from southern Illinois. Journal of Wildlife Diseases 28:666-668.
- Arthur, W. J. III and **Gates, R.J.** Trace element intake via soil ingestion in pronghorns and black-tailed jackrabbits. Journal of Range Management. 41: 162-166.
- Connelly, J. W., Browsers, H.W. and **Gates, R.J.** Seasonal movements of sage grouse in southeastern Idaho. Journal of Wildlife Management. 52: 116-122.

**Gates, R.J.** Observations of the formation of a sage grouse lek. *Wilson Bulletin*. 97: 219-221.

***PEER-REVIEWED PROCEEDINGS:***

**Gates, R. J.,** M. J. Wiley, A. K. Janke, and M. R. Liberati. 2017. Temporal and Spatial Assessment of Usable Space and Cover Type Interspersion for Northern Bobwhites on Private Farmlands in Southwestern Ohio. *Proceedings of the National Quail Symposium* 8:65-87.

**Gates, R. J.,** A. K. Janke, and M. R. Liberati, and M. J. Wiley, 2012. Demographic analysis of a declining northern bobwhite population in southwestern Ohio. *Proceedings of the National Quail Symposium* 7: 184-193.

Janke, A. K., and **R. J. Gates**. 2012. Temporal variability in survival of non-breeding northern bobwhites in Ohio. *Proceedings of the National Quail Symposium* 7:194-201.

Liberati, M. R., and **R. J. Gates**. 2012. Spring dispersal of northern bobwhites in southwestern Ohio. *Proceedings of the National Quail Symposium* 7:202-211.

Wiley, M. J., A. K. Janke, and **R. J. Gates**. 2012. Efficacy of targeted mist-netting to capture northern bobwhites during the non-breeding season in Ohio. *Proceedings of the National Quail Symposium* 7:235-240.

Hertlein, D. M. and **Gates, R. J.** 2002. Condition, species composition, and oak regeneration in a pin oak Forest Managed as a greentree reservoir in southern Illinois. Pages 283-296 *in* Fredrickson, L. H., Kaminski, R. M. and S. L. King, eds. *Ecology and Management of Bottomland Hardwood Systems: The State of Our Understanding*. University of Missouri-Columbia.

**Gates, R. J.,** D. F. Caithamer, and T. C. Tacha. 1998. Bioenergetics of Canada geese during breeding and post-breeding in northern Ontario. Pages 323-335 *in* D. H. Rusch, M. D. Samuel, D. D. Humberg, and B. D. Sullivan, eds. *Biology and Management of Canada geese*. *Proceedings International Canada Goose Symposium*, Milwaukee, WI.

Beck, R. J., J. H. Burde, **R. J. Gates**, S. E. Kraft, D. M. Sharpe, and M. J. Wagner. 1995. Habitat restoration and conservation: Compatible with sustainable economic development. In *Integrating people and wildlife for a sustainable future*. Edited by J. A. Bissonette, and P. R. Krausman. 424-427. Bethesda: First International Wildlife Management Congress. The Wildlife Society,

***TECHNICAL REPORTS:***

**Gates, R. J.** 2020. Summary of South Dakota private shooting preserve harvest statistics: Hunting seasons 2012-13 – 2018-19. Report to South Dakota Department of Game, Fish, and Parks. 7 pp.

Soulliere, G. J., M. A. Al-Saffar, J. M. Coluccy, **R. J. Gates**, H. M. Hagy, J. W. Simpson, J. N. Straub, R. L. Pierce, M. W. Eichholz, and D. R. Luukkonen. 2017. Upper Mississippi River and Great Lakes Region Joint Venture Waterfowl Habitat Conservation Strategy – 2017 Revision. U.S. Fish and Wildlife Service, Bloomington, Minnesota, USA.

Potter, B.A., R.J. Gates, G.J. Soulliere, R.P. Russell, D.A. Granfors, and D.N. Ewert. 2007. Upper Mississippi River and Great Lakes Region Joint Venture Shorebird Habitat Conservation Strategy. U.S. Fish and Wildlife Service, Fort Snelling, MN.

***EXTENSION FACT SHEETS:***

Liberati, M., A. Janke, M. Wiley, **R. Gates**, and M. Titchenell. Managing for bobwhite quail in Ohio's agricultural landscape. Columbus: Ohio State University Extension. (Report No. W-27-13,

Plasters, B., C. Hicks, **R. Gates**, and M. Titchenell. Feral swine in Ohio: Managing damage and conflicts. Columbus: Ohio State University Extension. (Report No. W-26-13, Dec 2013).

***UNIVERSITY TEACHING***

***(Ohio State University):***

ENR 5797.03/.04, Sustaining Human Societies & the Natural Environment: Study abroad (New Zealand)

ENR 8890 Introduction to R for Environmental Sciences (Co-instructor)

ENR 3300, Introduction to Forestry Fisheries and Wildlife

ENR 4900.02, Natural Resource Management for Forestry Fisheries and Wildlife (Co-instructed);

ENR 624, Wildlife Identification and Management (Co-instructor)

ENR 5362, Wildlife Ecology Methods (Co-instructor)

ENR 8780, Quantitative Methods for Natural Resources (Co-instructor)

ENR 8785, Natural Resources Paradigms (Co-instructor)

ENR 629, Ecology and Management of Wetland Birds

***(Southern Illinois University at Carbondale):***

ZOOL 585d, Wetlands Ecology and Management

ZOOL 534, Wildlife Habitat Analysis

ZOOL 462, Waterfowl Ecology and Management

ZOOL 460, Game Birds

***OTHER TEACHING:***

2007-present: Instructor, Conservation Leaders for Tomorrow. Max McGraw Wildlife Foundation and the Wildlife Management Institute.

***SELECTED RECENT PROFESSIONAL PRESENTATIONS (ORAL):***

Hengst, N. J. Hansen, B. Shirkey, J. Simpson, and **R. Gates**. 2020. Ecology and Management of Virginia rails and soras in northwest Ohio. Ohio Wildlife Management Association Conference, Columbus, OH.

Rosenblatt, C. J., **Gates, R. J.**, Matthews, S. N., Peterman, W. E. 2019. Modeling population dynamics of Northern bobwhite (*Colinus virginianus*) in response to future changes in winter weather.

Association of Field Ornithologists and the Wilson Ornithological Society joint meeting, Cape May, NJ.

Rosenblatt, C. J., **Gates, R. J.**, Matthews, S. N., Peterman, W. E., Stricker, N. J. American Ornithological Society Meeting, Anchorage, AK. 2019. *Modeling population dynamics of the Northern bobwhite (Colinus virginianus) in Ohio*. Poster.

**Gates, R. J.**, M. Shieldcastle, D. Ewert, K. Norris, and T. Baranowski. 2019. Ecology and management of spring-migrating shorebirds in the western Basin of Lake Erie. 79th Midwest Fish and Wildlife Conference, Cleveland, OH.

Hengst, N. J. Hansen, B. Shirkey, J. Simpson, and R. Gates. 2019. Movements of Virginia Rails and Soras within the western Lake Erie Basin. The Wildlife Society Annual Conference, Reno, NV.

Hengst, N. J. Hansen, B. Shirkey, J. Simpson, and R. Gates. 2019. Habitat relationships of Virginia rails and soras within the western basin of Lake Erie in Ohio. 79th Midwest Fish and Wildlife Conference, Cleveland, OH.

Hansen, J., N. Hengst, B. Shirkey, J. Simpson, and R. Gates. 2018. Factors affecting detection probability and abundance of Virginia rail and sora in the Lake Erie coastal marshes of northern Ohio. The Wildlife Society Annual Conference, Cleveland Ohio.

**Gates, R. J.**, J. N. Straub, M. G. Brasher, and J. M. Coluccy. 2018. Challenges of wetland restoration monitoring—if you build it will they come, if they come will you know it? 78<sup>th</sup> Midwest Fish and Wildlife Conference, Milwaukee, WI.

Hansen, J., N. Hengst, B. Shirkey, J. Simpson, **R. Gates**. 2018. Survey Methodology, Movement Ecology, and Vital Rates of the Virginia Rail and Sora in the Lake Erie Coastal Marshes of Northern Ohio. Oral Presentation. 78th Midwest Fish and Wildlife Conference. Milwaukee, WI.

**Gates, R. J.**, M. J. Wiley, A. K. Janke, and M. R. Liberati. 2017. Temporal and Spatial Assessment of Usable Space and Cover Type Interspersion for Northern Bobwhites on Private Farmlands in Southwestern Ohio. 8<sup>th</sup> National Quail Symposium. Knoxville, TN.

Hansen, J., B. Shirkey, J. Simpson, **R. J. Gates**. 2017. Home range size, movements, and survival rates of sora and Virginia rails in a managed marsh complex in northwestern Ohio. Poster Presentation. 77<sup>th</sup> Midwest Fish and Wildlife Conference. Lincoln, NE. 7 February, 2017.

Kearns, L., D. Sherman, J. Tucker, and **R. Gates**. 2016. Migration patterns of Greater Sandhill Cranes (*Grus canadensis tabida*) from Ohio. Oral Presentation. North American Ornithological Conference. Washington D.C.

Knapik, R. T., M. J. Wiley, C. A. Brooks, and **R. J. Gates**. 2016. Zooming in on landscape simplification: fine-scale changes to vegetation configuration influences suitability of agricultural landscapes for northern bobwhite (*Colinus virginianus*). 76<sup>th</sup> Midwest Fish and Wildlife Conference. Grand Rapids, MI.

**Gates, R. J.** 2015. Population-habitat relationships of northern bobwhites in southwestern Ohio: Giving quail an edge. Joint Annual Review Meeting, Ohio Biodiversity Conservation Partnership and Terrestrial Wildlife Ecology Laboratory. Columbus, OH. 16 November 2015

**Gates, R. J.**, and J. T. Tucker. 2015. Cranes on the rise: Natural history, biology, and management of Ohio's growing population of greater sandhill cranes. Invited presentation to the Western Cuyahoga Audubon Chapter. Cleveland, OH. 3 February 2015.

Brooks, C. A., R. T. Knapik, and **R. J. Gates**. 2015. Assessing northern bobwhite movement on woodlot edges after receiving enhancement in southwest Ohio: A Brownian bridge approach. 75<sup>th</sup> Midwest Fish and Wildlife Conference. Indianapolis, IN.

- R. T. Knapik, C. A. Brooks, A. K. Janke, and **R. J. Gates**. 2015. Importance of scale in assessing the influence of habitat composition on northern bobwhite (*Colinus virginianus*) winter survival. 75<sup>th</sup> Midwest Fish and Wildlife Conference. Indianapolis, IN.
- Smith, O.M., R. T. Knapik, C. A. Brooks, and **R. J. Gates**. 2015. Managing Edges to Increase Usable Space for Northern Bobwhites: The Ohio Experience. 75<sup>th</sup> Midwest Fish and Wildlife Conference. Indianapolis, IN.
- Knapik, R.T., C.A. Brooks, and **R.J. Gates**. 2014. Influence of winter weather on microhabitat selection and survival of Northern Bobwhites. The Wildlife Society Annual Conference. Pittsburgh, PA.
- Karns, G.**, R. Gates, S. Matthews, J. Bruskotter, J. McCoy, and M. Tonkovich. Predicting county-level variation in deer harvest density: delineating new deer management regions based on spatial homogeneity in Ohio. The Wildlife Society Annual Conference, Pittsburgh, PA.
- Knapik, R T. and **R. J. Gates**. 2014. Northern bobwhite (*Colinus virginianus*) demographic response to land-use change and winter weather patterns. 74<sup>th</sup> Midwest Fish and Wildlife Conference. Kansas City, MO.
- Karns, G A., **R. Gates**, S. N. Matthews, J. T. Bruskotter, and M. Tonkovich. Predictors of female white-tailed deer harvest: delineating new deer management units based on spatial homogeneity in Ohio. 74<sup>th</sup> Midwest Fish and Wildlife Conference, Kansas City, MO.
- Liberati, M. R., and **R. J. Gates**. 2013. Habitat selection and nesting ecology of Northern Bobwhite in Ohio. Annual Meeting Association of Field Ornithologists. Venus, FL.
- Liberati, M. R., and **R. J. Gates**. 2013. Population dynamics and habitat selection of northern bobwhites in Ohio. 125<sup>th</sup> Annual Meeting Wilson Ornithological Society. Williamsburg, VA.
- Gates, R. J.**, Straub, J. N., T. Yerkes, and J. M. Coluccy. 2013. Energetic carrying capacity in relation to habitat use rates by spring-migrating ducks in the upper Mississippi River and Great Lakes region. Ecology of North American Waterfowl and 6<sup>th</sup> North American Duck Symposium. Memphis, TN.
- Wiley, M. J, and **R. J. Gates**. 2012. Quantification of usable space and assessment of inter-patch distance for northern bobwhite on private lands in Ohio. 73<sup>rd</sup> Midwest Fish and Wildlife Conference. Wichita, KS.
- Norris, K. A., **R. J. Gates**, and P. G. Rodewald. 2012. Body mass dynamics and stopover duration of autumn-migrating shorebirds in the southwest Lake Erie marsh region. 73<sup>rd</sup> Midwest Fish and Wildlife Conference, Wichita, KS.
- Gates, R. J.**, K. A. Norris, and P. G. Rodewald. 2012. Body mass dynamics and foraging ecology of migrating shorebirds in the southwestern Lake Erie marsh region: Autumn vs. spring habitat limitation. Annual Meeting of the Upper Mississippi River and Great Lakes Region Joint Venture Management Board. Green Bay, WI. (invited)
- Gates, R. J.**, A. K. Janke, M. R. Liberati, and M. J. Wiley. 2012. Population ecology and habitat relationships of northern bobwhite in southwestern Ohio. 7<sup>th</sup> National Quail Symposium. Tucson, AZ
- Tucker, J. T., and R. J. Gates. 2012. Migration, movement, and breeding behaviors of greater sandhill cranes in Ohio. Ohio Biodiversity Conservation Partnership Annual Meeting. Columbus, OH.

Janke, A. K., and **R. J. Gates**. 2012. Temporal variability in survival of non-breeding northern bobwhites in Ohio. 7<sup>th</sup> National Quail Symposium. Tucson, AZ

Liberati, M. R., and **R. J. Gates**. 2012. Spring dispersal of northern bobwhites in southwestern Ohio. 7<sup>th</sup> National Quail Symposium. Tucson, AZ

Wiley, M. J., A. K. Janke, and **R. J. Gates**. 2012. Efficacy and effects on survival of targeted mist-netting of northern bobwhites in Ohio. 7<sup>th</sup> National Quail Symposium. Tucson, AZ

Willard, K., P. G. Rodewald, and **R. J. Gates**. 2011. Occupancy modeling of marsh bird habitat associations in Ohio: Validation and refinement of marshbird habitat models is needed to enhance conservation efforts. Joint Meeting of the Cooper Ornithological Society, Wilson Ornithological Society, and Association of Field Ornithologists. Kearney, NE.

Janke, A. K. and **R. J. Gates**. 2011. Non-breeding season habitat use by northern bobwhites on private lands in Ohio. 72<sup>nd</sup> Midwest Fish and Wildlife Conference, Des Moines, IA.

Wiley, M. J., A. K. Janke, and **R. J. Gates**. 2011. Vegetation structure and composition of microhabitats used by bobwhites during winter in southwestern Ohio. 72<sup>nd</sup> Midwest Fish and Wildlife Conference, Des Moines, IA.

Liberati, M. J., and **R. J. Gates**. 2011. Breeding ecology of northern bobwhites in southwestern Ohio. 72<sup>nd</sup> Midwest Fish and Wildlife Conference, Des Moines, IA.

Wiley, M. J., A. K. Janke, Liberati, M. R., and **R. J. Gates**. 2011. Dynamics of a declining northern bobwhite population in southwestern Ohio. 52<sup>nd</sup> Ohio Fish and Wildlife Management Conference. Columbus, OH.

**Gates, R. J.** and R. W. Kroll. 2009. Coastal Marsh management in the western basin of Lake Erie: Perspectives from the past, projections for the future. 5<sup>th</sup> North American Duck Symposium. Toronto, ON, Canada. (invited)

Coluccy, J. M., T. Yerkes, M. H. Eichholz, R. J. Gates, B. Shaman, J. Sartwell, D. A. Graber, and M. J. Petrie. 2009. Understanding energetic and habitat requirements of spring migrating waterfowl in the Great Lakes. 5<sup>th</sup> North American Duck Symposium. Toronto, ON, Canada. (invited)

Graves, B. M., **R. J. Gates**, and L. D. Murray. 2009. Abundance, habitat use, and survival of northern bobwhites in Ohio: Life on the edge. 6<sup>th</sup> Ohio Natural History Conference. Columbus, OH.

Straub, J. N., K. R. Loper, **R. J. Gates**, and Tina Yerkes. 2007. Temporal and spatial variation in plant food energy available to spring-migrating waterfowl in the Upper Mississippi River and Great Lakes region. The Wildlife Society 14<sup>th</sup> Annual Conference. Tucson, AZ.

***SELECTED RECENT PROFESSIONAL PRESENTATIONS (POSTER):***

Rosenblatt, C. J., Gates, R. J., Matthews, S. N., Peterman, W. E., Stricker, 2019. Modeling population dynamics of the Northern bobwhite (*Colinus virginianus*) in Ohio. North American Ornithological Society Meeting, Anchorage, AK.



Hengst, N. J. Hansen, B. Shirkey, J. Simpson, and R. Gates. 2018. Habitat relationships of Virginia rails and soras in Impounded marshes in the western basin of Lake Erie, Ohio. The Wildlife Society Annual Conference, Cleveland Ohio, October 2018.

Hansen, J., B. Shirkey, J. Simpson, **R. Gates**. 2017. Population Ecology and Survey Methodology of the Virginia Rail and Sora in the Lake Erie Coastal Marshes of Northern Ohio. Poster Presentation. 24th Annual Conference of The Wildlife Society. Albuquerque, NM.

Hansen, J., B. Shirkey, J. Simpson, **R. Gates**. 2017. Home range size, movements, and survival rates of sora and Virginia rails in a managed marsh complex in northwestern Ohio. Poster Presentation. 57th Ohio Fish and Wildlife Conference. Columbus, OH.

Hansen, J., B. Shirkey, J. Simpson, **R. Gates**. 2016. Population monitoring, ecology, and habitat relationships of Sora and Virginia Rails in northwestern Ohio. Poster Presentation. 40<sup>th</sup> Anniversary of the Waterbirds Society Annual Meeting. New Bern, NC.

Hansen, J., B. Shirkey, J. Simpson, **R. Gates**. 2016. Population monitoring, ecology, and habitat relationships of Sora and Virginia Rails in northwestern Ohio. Poster Presentation. North American Ornithological Conference. Washington D.C.

Karns, G. A., **R. J. Gates**, S. N. Matthews, J. T. Bruskotter, J. McCoy, and M. Tonkovich. 2015. The Ohio Deer Management Unit Project – Standing on Solid Ground. 55<sup>th</sup> Ohio Fish and Wildlife Conference, Columbus, Ohio.

Brooks, C.A., R. T. Knapik, and **R.J. Gates**. 2014. Vegetation Response on Woodlot Edges for Northern Bobwhite in Southwest Ohio. The Wildlife Society Annual Conference. Pittsburgh, PA.

Knapik, R T., C. A. Brooks, and **R. J. Gates**. 2014. Microhabitat selection and survival of northern bobwhites (*Colinus virginianus*) during winter in Ohio. 20<sup>th</sup> National Bobwhite Technical Committee Meeting. Des Moines, IA.

Tucker, J. T. **R. J. Gates**, and D. E. Sherman. 2014. Migration, movements, and habitat use of greater sandhill cranes in Ohio. Ohio Biodiversity Conservation Partnership Annual Meeting. Columbus, OH.

Brooks, C. A., **R. J. Gates**. 2014. Vegetation Response and Enhancement for Northern Bobwhite in Southwest Ohio, 74<sup>th</sup> Midwest Fish and Wildlife Conference. Kansas City, MO.

Knapik, R T. and **R. J. Gates**. 2014. Northern bobwhite (*Colinus virginianus*) demographic response to land-use change and winter weather patterns. 74<sup>th</sup> Midwest Fish and Wildlife Conference. Kansas City, MO.

Tucker, J. T. **R. J. Gates**, and D. E. Sherman. 2014. Migration, movements, and habitat use of greater sandhill cranes (*Grus Canadensis tabida*) in Ohio. Ohio Biodiversity Conservation Partnership Annual Meeting. Columbus, OH. February 13, 2014.

Brooks, C. A., and **R. J. Gates**. 2014. Northern Bobwhite (*Colinus virginianus*) Response to Woodlot Edge Enhancement in Southwest Ohio, 54<sup>th</sup> Ohio Fish and Wildlife Management Conference. Columbus, OH.

Knapik, R. T., and **R. J. Gates**. 2014. Northern bobwhite (*Colinus virginianus*) demographic response to microhabitat structure and landscape composition. 54<sup>th</sup> Ohio Fish and Wildlife Management Conference. Columbus, OH.

Karns, G. R., **R. J. Gates**, S. N. Matthews, and J. T. Bruskotter. 2014. Predictors of female white-tailed deer harvest: Delineating new Ohio deer management units based on spatial homogeneity. 54<sup>th</sup> Ohio Fish and Wildlife Management Conference. Columbus, OH.

Knapik, R. T. and **R. J. Gates**. 2014. Northern bobwhite (*Colinus virginianus*) demographic response to habitat structure and a decline in usable space. Ohio Pheasants Forever State Conference. Worthington, OH.

Knapik, R. T, C. A. Brooks, and **R. J. Gates**. 2013. Northern bobwhite (*Colinus virginianus*) response to habitat change and woodlot edge enhancement. Annual Meeting, Northern Bobwhite Technical Committee, Roanoke, VA.

Wiley, M., H. Devine, C. Payne, D. Knight, B. Bauer, and **R. Gates**. 2013. Private land partnership in Ohio: Creating covey headquarters across the fenceline. Annual Meeting, Northern Bobwhite Technical Committee, Roanoke, VA.

Brasher, M. G., **R. J. Gates**, and J. D. Steckel. 2013. Food energy density as a predictor of wetland use by ducks during autumn and spring migration in Ohio. Ecology of North American Waterfowl and 6<sup>th</sup> North American Duck Symposium. Memphis, TN.

#### ***SELECTED RECENT OUTREACH PRESENTATIONS:***

**R. J. Gates**. 2020. Birds of Ohio shores: Diversity, Ecology and Management of Shorebirds in Ohio. Ohio Woodlands Stewards Friday Morning Webinar, 2 October 2020, Online

**R. J. Gates**, and N. J. Hengst. 2020. What's up with waterbirds? Ohio Woodlands, Water and Wildlife Conference, 4 March 2020. Mansfield, OH.

Wiley, M. J. and **R. J. Gates**, 2018. Fallsville Quail Focus Area (and points beyond) – A study of quail populations and habitat on private lands. Working Lands for Wildlife In-service Workshop. Reynoldsburg, OH.

**Gates, R. J.**, G. Karns, M. Titchenell, and K. Smith. 2016. Changing Ohio forests: Wildlife winners and losers. Invited Presentation to The Paul Bunyan Show, Cambridge, OH. 9 October 2016.

**Gates, R. J.** 2015. Bobwhites in the Contemporary Midwestern Landscape: Aardvarks in Arcadia, or Canaries in the Coal Mine? Invited presentation to the John Glenn College of Public Affairs Colloquium. Columbus, OH. 16 November 2016.

**Gates, R. J.** 2015. The biological basis of conservation planning for migratory waterbirds: The care and feeding of migrating ducks and shorebirds. Invited Seminar, Old Woman Creek Nature Preserve and National Estuarine Research Center, Huron, OH. 4 September 2015.

**Gates, R. J.** 2015. Bobwhites in the Contemporary Midwestern Landscape: Aardvarks in Arcadia, or Canaries in the Coal Mine? Invited presentation to the Ohio Bird Banding Association Annual Winter Meeting. Englewood, OH. 28 March 2015.

**Gates, R. J.**, and J. T. Tucker. 2015. Cranes on the rise: Natural history, biology and management of Ohio's growing population of Greater Sandhill Cranes. Invited presentation to the Western Cuyahoga Chapter of the Audubon Society. North Olmsted, OH. February 3, 2015.

**Gates, R. J.** 2014. Giving quail an edge: How research informs bobwhite conservation in Ohio. Invited presentation to the Ohio Wildlife Council. Columbus, OH. September 17, 2014.

**Gates, R. J.**, R. T. Knapik, C. A. Brooks, and O. M. Smith. 2014. On the edge and down in the weeds: Managing farmland wildlife habitat to keep common species common. College of Food, Agriculture, and Environmental Sciences, Farm Science Review. London, OH. September 16, 2014.

**Gates, R.J.**, C. A. Brooks, and R.T. Knapik. 2014. Northern bobwhite research and management in Ohio: Past, present, and future. Brown County Soil and Water Conservation District Wildlife and Habitat Management Workshop. Fincastle, OH.

**Gates, R. J.** 2013. Give Bob an edge: Bobwhite ecology and management in Ohio. Ohio Woodlands, Wetlands, and Wildlife Conference, Mansfield, OH.

**Gates, R. J.** 2012. Habitat Management for Bobwhite Quail. College of Food, Agriculture, and Environmental Sciences, Farm Science Review. London, OH. September 2012.

**Gates, R. J.** 2010. Bobwhite quail research in Ohio. Invited presentation to the Fall Continuing Education Workshop (Bobwhite Quail Management-Past present and Future) presented by the Indiana Chapter of The Wildlife Society. Madison, IN. September 28, 2010.

**Gates, R. J.** 2010. Wetland Birds: Tales of dabblers, tipplers, divers, waders, and gleaners. Ohio Woodland, Water, and Wildlife Conference. Mansfield, OH. March 3, 2010.

**Gates R. J.** 2009. Managing wetlands to attract waterbirds. Ohio River Valley Woodland and Wildlife Workshop. Cincinnati, OH. April 4, 2009.

***GRADUATE STUDENTS COMPLETED:***

(Name, thesis/dissertation title. Degree, date of completion.)

Aaron Yetter - Population densities and use of palustrine wetlands by breeding waterfowl in northeastern Illinois. M.S., 8/92. Co-Advised w/ D. Roby)

Donna Hertlein - Hardwood stand condition and oak regeneration in a greentree reservoir in southern Illinois. M.S., 12/94.

Lidija Cienjak-Chubbs - Epizootiology of avian cholera in Canada geese on southern Illinois wintering areas. Ph.D., not completed. (Co-Advised w/ A. Woolf).

Jeffrey Thommes - Population characteristics of muskrats in drainage ditches in northwestern Illinois. M.S., 12/94.

Blake Smietanski - Behavioral ecology of waterfowl on an Illinois River habitat rehabilitation site. M.S., 12/94.

Mark O'Leary - Ecological characteristics and waterfowl use of wetland habitats at Union County Conservation Area. M.S., 5/95.

Daniel Ryan - Breeding biology of wood ducks nesting in natural cavities in southern Illinois. M.S., 12/95.

Shannon Horn - Spatial and temporal changes in land cover surrounding mourning dove call-count routes in Illinois, 1965-1988. M.S., 12/97.

Timothy Kreher - Duck nesting in tame hay fields in southern Manitoba. M.S., 6/98.

Robert Kawula - Breeding season movements and resource selection of female wood ducks in southern Illinois. Ph.D, 8/98.

Andrew Selle – Annual variation in breeding productivity of natural cavity nesting wood ducks in southern Illinois. M.S., 5/99.

Edward Zwicker - Availability and use of tree cavities by wood ducks nesting in southern Illinois. M.S., 5/99.

David Zuwerink – Derivation and distribution of mallards harvested in the northeastern United States: 1961-1997. M.S., 3/01

Jeffrey Corney – Review of climate change effects on forest and aquatic resources of the Great Lakes region. Non-thesis M.S., 3/01.

Kevin Swanson – Movements, survival, and habitat relationships of snowshoe hares following release in northeast Ohio. M.S., 6/02.

Tara Olson – Avian use of managed and unmanaged wetlands in central and northern Ohio. M.S. in progress.

Jason Steckel – Food availability and waterfowl use on mid-migration habitats in central and northern Ohio. M.S., 6/03

Charlotte Roy – Fitness consequences of intraspecific nest parasitism in wood ducks. Ph.D. 12/04 at University of Missouri at St. Louis (co-advised with P. Parker).

Joni Downs – Population status and habitat utilization of greater sandhill cranes in Ohio. M.S., 6/04.

Paul Ramey – Population density and prevalence of rabies virus-neutralizing antibodies in a northern Ohio raccoon population. M.S., 2005

Geboy, Richard – Influence of habitat conditions on nesting activity of wood ducks (*Aix sponsa*) in tree cavities. M.S. 2006.

Baranowski, Tara – Distribution, abundance and habitat associations of fall- and spring-migrating shorebirds in the southwest Lake Erie marsh region. M.S. 2007.

Brasher, Michael – Duck use and energetic carrying capacity of actively and passively managed wetlands in Ohio during Autumn and spring migration. Ph.D. 2010.

Willard, Karen – Habitat associations of breeding marsh birds within the glaciated region of Ohio, USA. M.S. 2011.

Janke, Adam – Survival and habitat use of non-breeding northern bobwhites on private lands in Ohio. M.S. 2011.

Wiley, Mark – Usable space and microhabitat characteristics for bobwhites on private lands in southwestern Ohio. M.S. 2012.

Liberati, Marjorie – Spring dispersal and breeding ecology of northern bobwhite in southwest Ohio. M.S. 2013.

Kahler, Benjamin – Area-sensitivity, landscape habitat associations, and distribution of breeding marsh birds within the glaciated region of Ohio, USA. M.S. 2013.

Plasters, Brian – Evaluating Ohio's feral swine (*Sus scrofa*) population. MENR, 2012.

Tucker, Jason – Juvenile dispersal, migration, and habitat use of greater sandhill cranes in Ohio. M.S. 2014.

Norris, Keith – Body mass gain and habitat limitation in fall and spring-migrant shorebirds in the southwest Lake Erie region. M.S. 2015

Brooks, Corey – Vegetation response and use of wooded edges by Northern Bobwhites after edge-feathering treatment in Southwestern Ohio. M.S. 2015

Knapik, Randall – Survival and Covey Density of Northern Bobwhites in Relation to Habitat Characteristics and Usable Space in Ohio. M.S. 2015.

Binkley, Laura – Prevalence of *Cryptosporidium*, *Giardia*, *Salmonella*, and Cephalosporin-Resistant *E. coli* Strains in Canada Goose Feces in Central Ohio M.S. 2015.

James Hansen – Survey Methods and Habitat Associations of Secretive Marsh Birds in Coastal Wetlands of the Western Lake Erie Basin. M.S. 2019.

Connor Rosenblatt – Integrated Population Modeling of Northern Bobwhite and Co-occupancy with Open-land-Dependent Birds in Southern Ohio.

***CURRENT GRADUATE STUDENTS:***

Nicole Hengst – Movements and habitat relationships of soras and Virginia rails in managed coastal marsh units in northwestern Ohio.

Pattama Ulrich – Functional assessment and public health aspects of restored wetlands in Ohio.

Stephanie Sforza – Geospatial Habitat analyses for northern bobwhites and white-tailed deer in Ohio.

***POST-DOCTORAL RESEARCHERS:***

Spinola, Manuel – Population trends and monitoring methods for northern bobwhites in Ohio

Murray, Les – Power analysis and design of surveys to monitor population trends of upland game birds in Ohio

Karns, Gabriel – Development of deer management units in Ohio.

***OTHER SUPERVISION OF STAFF:***

Pat Ruble, Program Manager, Terrestrial Wildlife Ecology Laboratory, 2003-2005

Ed Fults, Program Manager, Terrestrial Wildlife Ecology Laboratory, 2005-2007

Dennis Hull, Program Manager, Terrestrial Wildlife Ecology Laboratory, 2007-present

***PROFESSIONAL CONSULTING:***

**April 2017 – May 2019: Abt Associates. Boulder Colorado.** Invited consultant, development of a monitoring and evaluation plan for the National Fish and Wildlife Foundation’s Save Our Great Lakes Program. Provide input and review existing data sources modeling tools and monitoring efforts. Provide input and advice on monitoring and data collection strategies for tracking progress toward program goals. Review draft data summaries and monitoring plan and provide written comments, edits, and oral feedback.

**November 2013 – 2016: Sutter O’Connell Co., Cleveland, OH.** Expert witness in a federal civil court case. Examined physical evidence prepared professional statements of findings, and provided sworn deposition for pre-trial motions and hearing, testified at jury trial.

**April 2013 – Present: Severstal Dearborn and AK Steel Dearborn Works. Dearborn, MI.** Conducted monthly (Sep-Dec, Mar-May) bird point-count surveys, monthly inspections of oil removal and wildlife deterrent measures, reviewed daily wildlife inspection and weekly deterrent measure records, prepared monthly reports, and provided consultation on minimizing wildlife hazards at the Schaefer Road Wastewater Treatment Plant.

**December 2006 – Present: WCI Steel, Inc., Severstal Warren, Inc, RG-Steel, LLC, BDM Warren Steel Holdings LLC, Warren, OH.** Conducted monthly bird point-count surveys, monthly inspections of wildlife deterrent measures, reviewed daily wildlife inspection and weekly deterrent measure records, prepared monthly reports, and provided consultation on minimizing wildlife hazards at 56” Hot Strip Mill cooling lagoon.

**January –February 2009: American Institute of Biological Sciences.** Expert reviewer of U.S. Fish and Wildlife Service technical review of regulations for captive-reared mallards on shooting preserves in the U.S.

**August 2005 – December 2007: CONSOL Energy, Inc., Southern Ohio Coal Co.** Supervised bird point-count surveys and laboratory analyses of environmental samples (invertebrates, water, soil, coal slurry and water treatment effluent), collected environmental samples at the Meigs No. 31 mine coal slurry impoundment. Analyzed and reported results of bird surveys and environmental samples.

Provided consultation and recommendations regarding wildlife hazards and potential wildlife benefits of remediation and restoration alternatives.

**April-May 1996: U.S. Department of Justice, Western District of Kentucky.** Provided technical expertise and expert opinion to counsel regarding litigation of wetland alteration activities on private property.

**August – December 1984: U.S. Department of Energy, Idaho National Engineering Laboratory (INEL), Idaho Falls, ID.** Surveyed wildlife use and prepared technical report on potential impacts of siting of a new production nuclear reactor facility on the INEL.

***FELLOWSHIPS AND AWARDS:***

2014 U.S. Fish and Wildlife Summer Faculty Fellow. May 2014-August 2014. Upper Mississippi River and Great Lakes Region Joint Venture Science Support Office, East Lansing Field Office, East Lansing, MI.

2014 Annual Conservation Partner of the Year Award, Ohio Chapter Pheasants/Quail Forever

1998 Annual Professional Award for service to the Upper Mississippi River and Great Lakes Region Joint Venture (U.S. Fish and Wildlife Service)

***PROFESSIONAL SERVICE:***

Past President Ohio and Illinois Chapters of The Wildlife Society

Past President, North-central Section of The Wildlife Society

Upper Mississippi River and Great Lakes Region Joint Venture Technical Committee

Northern Bobwhite Technical Committee

Member, Winous Point Marsh Conservancy Board of Trustees

***RECENT UNIVERSITY SERVICE:***

Principle Investigator, Terrestrial Wildlife Ecology Laboratory. School of Environment and Natural Resources (SENR), Ohio State University (OSU). 2013-present.

SENR Leadership Team member, October 2013-March 2017.

Research, Space, and Equipment Committee (Co-chair). SENR, OSU. October 2013-March 2017.

Avian Wildlife Ecologist Search Committee (Chair). SENR OSU. November 2013-May 2014.

Forest Economics and Policy Faculty Search Committee member. SENR OSU. January 2015 – December 2016.

Faculty Advisory Council, Secretary and SENR representative, OSU College of Food Agriculture and Environmental Sciences. May 2015-present.

**GRANTS AND CONTRACTS:**

- Operation and Administration of the Terrestrial Wildlife Ecology Laboratory (Principle Investigator with Co-Investigators J. Bruskotter, S. Gehrt, S. Matthews B. Peterman, and C. Tonra. Ohio Department of Natural Resources, Division of Wildlife, 2003 – present. \$8,208,076.
- Population ecology and habitat relationships of sora and Virginia rails in northwestern Ohio (with C. Tonra, Co-Investigator). Ohio Department of Natural Resources, Division of Wildlife, 2015-present. \$377,690.
- Response of early successional avifauna to pipeline right-of-ways vegetation management in eastern Ohio Co-Investigator with S. Matthews (PI) and C. Tonra CoPI. Ohio Department of Natural Resources, Division of Wildlife. \$121,539.
- Assessment of land use change on wildlife populations in Ohio. Co-Investigator with S. Matthews (PI). Ohio Department of Natural Resources, Division of Wildlife, 2015 – present. \$102,477.
- Development of new deer management units for Ohio (Co-Principle Investigator with J. Bruskotter and S. Matthews). Ohio Department of Natural Resources, Division of Wildlife, 2013 – present. \$166,414
- Responses of quail to habitat enhancement in agricultural landscapes (Principle Investigator). Ohio Department of Natural Resources, Division of Wildlife, 2012 – present. \$399,455
- Dispersal, behavior, and habitat use of non-breeding greater sandhill cranes in Ohio (Principle Investigator). Ohio Department of Natural Resources, Division of Wildlife, 2012 – 2014.
- Analysis of wood duck and Canada goose banding data (Principle Investigator). Ohio Department of Natural Resources, Division of Wildlife, 2012 – present. \$34,585
- Body mass dynamics and foraging ecology of migrating shorebirds in the southwestern Lake Erie basin: Autumn versus spring habitat limitation (Co-Principle Investigator with P. Rodewald). U. S. Fish and Wildlife Service, 2011-2014. \$73,371
- Analysis of alternatives for restoring a coal slurry impoundment and refuse pile at the Meigs Mine No. 31 site: Assessment of current wildlife utilization and potential for wildlife habitat development (Co-Principle Investigator with L. Williams, V. Bouchard, and J. Bigham). CONSOL Energy, Inc., 2005-2010. \$91,170
- Habitat and nutrient requirements of spring staging waterfowl and shorebirds in the upper Mississippi River and Great Lakes region (Principle Investigator). Ducks Unlimited, Inc., 2005-2009. \$176,109
- Impediments to access for hunting in Ohio: Survey of agricultural and forested landowners (Co-Principle Investigator with J. Arvai). Ohio Department of Natural Resources, Division of Wildlife, 2004. \$32,992
- Movements, habitat use, and survival of raccoons in northern Ohio (Co-Principle Investigator with S. Gehrt). Ohio Division of Wildlife, 2003 – 2005. \$61,523



- Testing for alignment between resource users and managers objectives as they relate to deer hunting in Ohio: A decision analytic approach (Co-Principle Investigator with J. Arvai and T. Napier). Ohio Division of Wildlife, 2003 – 2006. \$72,417
- Factors affecting habitat availability and utilization by migrating shorebirds in the southwestern Lake Erie Marsh region (Principle Investigator). U.S. Fish and Wildlife Service, 2003 – 2004. \$8,100
- Raccoon movements relative to distribution of oral rabies vaccine baits in northern Ohio. (Principle Investigator). Mississippi State University, 2002-2003. \$6,461
- Population-habitat relationships of breeding sandhill cranes in Ohio (Principle Investigator). Ohio Department of Natural Resources, Division of Wildlife. 2001 – 2004. \$94,104
- Efficacy of oral rabies vaccination relative to bait density and raccoon population density (Principle Investigator). U.S. Dept. Agriculture-APHIS, National Wildlife Research Center, 2002-2005. \$86,039
- Factors affecting habitat availability and utilization by migrating shorebirds in the Southwestern Lake Erie region (Principle Investigator). Winous Point Marsh Conservancy, 2001-2006. \$45,636
- Evaluation of managed and unmanaged wetlands as migratory bird habitat in the Upper Mississippi River and Great Lakes Joint Venture (Principle Investigator). Ducks Unlimited, Inc., 2000-2004. \$46,339
- Behavioral aspects of intra-specific nest parasitism by wood ducks using natural tree cavities in southern Illinois (Principle Investigator). Ohio State University Seed Grant, 2000-2002. \$27,589
- Factors affecting annual duck harvests in eastern states (Principle Investigator). Winous Point Research Committee, 1998-2007. \$96,258
- Movements, survival, and habitat use of reintroduced snowshoe hares in northeastern Ohio (Principle Investigator). Ohio Department of Natural Resources, Division of Wildlife, 1999-2001. \$136,870
- Habitat use and movements of staging Black ducks and mallards in Ohio (Principle Investigator). U.S. Geological Survey, Biological Resources Division, Ohio Division of Wildlife, and Ohio Sea Grant., 1998-1999. \$10,973
- Northeastern Illinois wetland birds (Principle Investigator). Max McGraw Wildlife Foundation, 1998 - 2000. \$19,636
- Analysis of Canada goose population energy needs in relation to food availability at Horseshoe Lake and Union County Conservation Areas in southern Illinois (Principle Investigator). Illinois Department of Natural Resources, 1996. \$3,000
- Habitat changes in the lower Cache River of southern Illinois: 1949-1991 (Principle Investigator). St. Louis District, U.S. Army Corps of Engineers, 1996. \$1,200
- Waterfowl wing identification display boards (Principle Investigator). Illinois Department of Natural Resources, 1996. \$1,200

Factors affecting reproduction and survival of wood duck hens in forested landscapes (Principle Investigator). Illinois Department of Natural Resources, 1995-1998. \$133,680

Cooperative education internship program (Principle Investigator). Illinois Field Office, The Nature Conservancy, 1993-1995. \$24,400

Land use changes in the Cache River, 1950-1991 (Principle Investigator). St. Louis District, U.S. Army Corps of Engineers, 1993. \$3,000

Mast production and invertebrate food availability to waterfowl at Oakwood Bottoms Greentree Reservoir in southern Illinois. (Principle Investigator). U.S. Forest Service, Shawnee National Forest, 1992-1994. \$11,268

Population monitoring and habitat relationships of wood ducks in southern Illinois (Principle Investigator). Illinois Department of Conservation Federal Aid in Wildlife Restoration, 1992-1995. \$182,176

Waterfowl utilization of the Swan Lake Habitat Rehabilitation and Enhancement Project site (Principle Investigator). U.S. Fish and Wildlife Service Environmental Management Technical Center, 1992-1993. \$30,000

Condition, mortality, and regeneration of mast producing trees at Oakwood Bottoms Greentree Reservoir in southern Illinois (Principle Investigator). Max McGraw Wildlife Foundation Special Research Grant, 1991. \$1,500

Condition, mortality, and regeneration of mast producing trees at Oakwood Bottoms Greentree Reservoir in southern Illinois (Principle Investigator). U.S. Forest Service, Shawnee National Forest, 1991-1992. \$4,440

Compilation of the wetlands and associated developments that are desirable components of the "Partners for Wetlands" project area of the North American Waterfowl Management Plan in Illinois (Principle Investigator). Illinois Department of Conservation, 1991. \$6,000

### **Manuscript Reviews**

Wildlife Society Bulletin, Journal of Wildlife Management, Journal of Fish and Wildlife Management, Wetlands, Wetlands Ecology and Management, Landscape and Urban Planning, Condor, Wilson (formerly Bulletin) Journal of Ornithology, American Midland Naturalist, Prairie Naturalist.

### **Proposal Reviews**

University of Wisconsin Consortium for Extension and Research in Agriculture and Natural Resources.

Social Sciences and Humanities Research Council of Canada, National Fish and Wildlife Foundation.