


Nathan M. Roberts, PhD

Associate Professor

Chair, Department of Conservation and Wildlife Management

Chair, Division of Agriculture and Natural Sciences

College of the Ozarks



Cornell University

PhD, Natural Resources

Doctor's Minors: Veterinary Zoology, Ecology and Evolutionary Biology

May, 2005-April 2010

Dissertation title: *'Enhancing Furbearer Management in New York State.'*

University of Missouri-Columbia 2003

Master of Science, Fisheries and Wildlife Management

Thesis title: *'River Otter Food Habits in the Missouri Ozarks.'*

University of Missouri-Columbia

Bachelor of Science, Fisheries and Wildlife Management

Experience:

College of the Ozarks

Associate Professor,

Chair of the Conservation and Wildlife Management Department,

Chair of Agriculture and Natural Sciences Division,

Curator of Wildlife,

July 2020 – Present

- Advise and instruct undergraduate students in the Conservation and Wildlife Management program.
- Set direction for Conservation and Wildlife Management program, including revising program to meet TWS certification standards and federal hiring guidelines
- Oversee day-to-day operations of the Conservation and Wildlife Management Department
- Supervise conservation and wildlife management, biology, chemistry, and agriculture departments (including 12 faculty members)
- Oversee wildlife issues, such as hunting activities and mitigation of wildlife damage, on college-owned properties (>2,500 acres).

Wisconsin Department of Natural Resources
Bear, Wolf, and Furbearer Research Scientist
Jan 2014- 2020

Serve as lead Research Scientist for bears, wolves and furbearers. Responsible for providing program oversight; development, coordination and oversight of field work; collaborating with state, federal, and other stakeholder organizations; managing and developing project budgets; advising state administration as needed; coordination of management and budget reports; and advise several state-wide advisory committees.

Examples include:

- Identify research needs for these high-profile species such as wolf and bear population estimates.
- Serve on numerous advisory committees and teams, such as Wolf Advisory Team, Bear Advisory Team, Furbearer Advisory Team, and lead quota and regulation recommendations.
- Work closely with tribal governments on carnivore and furbearer research issues.
- Advise state and federal administrations on topics relating to carnivores and furbearers.
- Develop grant proposals, manage funds and personnel, and meet state and federal reporting requirements.
- Increase and advance applied and theoretical knowledge of carnivore/furbearer ecology, management, and policy.
- Designated agency spokesperson and media contact for carnivore and furbearer research issues.
- Manage workload and performance of staff ranging from entry level to PhD scientist.
- Develop relationships with universities for productive collaboration.

Lead Biometrician, United States Fish and Wildlife Service, National Wildlife Refuge System
GS-13-0408 (Ecologist)
2011-2014

Served as lead Biometrician for National Wildlife Refuge System for entire state of Alaska. Assisted 13 Refuges, and 64 biologists, across the state with needs associated with increasing scientific capacity and rigor, while also ensuring work aligned with regional and/or national priorities.

Examples include:

- Provide project-specific statistical support for research, management, and monitoring efforts such as Steller's eider population estimates, moose monitoring, and caribou surveys.
- Project design, review, and analysis for a variety of taxa and topics including population monitoring, predator control, and intensive management.
- Provide project management and leveraging support such as supervising graduate student projects.
- Design management actions and monitoring protocols.
- Visit remote field sites and field projects.

Post-Doctoral Research Associate, Association of Fish and Wildlife Agencies
2010-2011

Develop predictive models of furbearer trap performance based on trap characteristics.

Duties include:

- Collaborate with the Association of Fish and Wildlife Agencies, U.S. Furbearer Conservation Working Group and the U.S. Department of Agriculture to develop innovation quantitative models to predict animal injuries based on physical and mechanical characteristics of traps.
- Development of multiple logistic models, multivariate models, and simulation procedures.
- Frequent interaction with numerous state and federal furbearer experts.

Graduate Research Assistant, Cornell University
2005-2010

Conduct research for Ph.D. dissertation project entitled “Development of a Furbearer Harvest Management and Assessment System.”

Duties included:

- Partner with the New York State Department of Environmental Conservation to enhance furbearer management in New York.
- Development of population models for fisher, bobcat, and river otter.
- Design and implement population monitoring and assessment studies for predators (fisher and bobcat) through the Adaptive Harvest Management process.
- Participation in state agency Furbearer Management Team as a team member.
- Frequent interaction with state and provincial biologists regarding status of otter, fisher, marten, and bobcat research, harvests, and regulations.
- Participation in regional and national meetings.
- Recommend furbearer harvest regulations.
- Necropsy over 1,800 furbearers.
- Supervise student employees and mentor one student independent research project.

Wildlife Biologist, United States Department of Agriculture, Wildlife Services, National Wildlife Research Center GS-09-0486
2003-2005

Wildlife Disease Research Program.

Duties included:

- Collaborate with multiple state agencies, federal agencies, and universities to investigate a variety of wildlife disease issues.
- Designed and implemented studies to investigate the role of wildlife in the maintenance and spread of diseases of human health and agricultural importance.
- Coordinate field studies throughout the country.
- Conducted captive animal studies.
- Provide assistance to cooperating universities on collaborative projects.
- Manage fleet of federal vehicles.
- Managed firearms, ammunition, and explosives.
- Work with local, state, and other federal agencies to acquire necessary authorizations and permits to conduct research studies.
- Interact with peers and the public in a variety of formats including working groups, professional meetings, and community meetings.

Graduate Research Assistant, University of Missouri
2001-2003

Conducted research for thesis project entitled "River Otter Food Habits in the Missouri Ozarks." This project described seasonal and spatial variations in otter diets on Ozark streams. In addition, this project developed and validated a classification model for centrarchid fish scales using morphological characteristics and involved significant understanding of fisheries management and freshwater fish biology.

Duties included:

- Location of otter latrine sites and collection of scat on rivers.
- Identification of prey remains found in scat.
- Pressing, identifying and aging of fish scales.
- Hiring, training, and supervising of 19 research technicians.
- Frequent interaction with landowners.

Wildlife Research Technician, Missouri Dept. of Conservation
1998-2001

Worked on various aspects of statewide research on Missouri river otters and other miscellaneous jobs, tasks, and responsibilities as needed.

Duties included:

- Conducting otter diet survey using the digestive tracts of 443 river otters.
- Trapping and tagging of river otters for telemetry using foothold and cage traps.
- River otter telemetry and aerial track surveys.
- Black bear population monitoring using motion sensor cameras.

Professional Service:

Convention on International Trade of Endangered Species of Wild Flora and Fauna (CITES) Working Group

- Provided on-site assistance to Mexico on research efforts that support U.S CITES policy on bobcat issues.
- Provide technical assistance to the US CITES group regarding proposals potentially effecting furbearer management.
- Provide technical assistance through statistical analysis of data and report preparation resulting in peer reviewed publication.
- Developed identification guide for *Lynx* species pelts to assist wildlife law enforcement and customs officials.
- Led successful efforts to acquire range-wide export authority for river otter and bobcats

International Union for the Conservation of Nature (IUCN)

- Species Specialist Group – otter; commissioned 2017-2020 and 2021-2025 terms

United States Department of Agriculture

- Served on Research Grade Evaluation panels for research-grade scientists.

The Wildlife Society

- Organized “*Innovative Approaches for Furbearer Research*” symposium at the 2019 annual Wildlife Society conference.
- Organized and moderated “*Trapping in the 21st Century*” symposium at the 2008 annual Wildlife Society conference.
- Organize and instruct ‘*Trapping Matters*’ workshop for wildlife professionals at the 2008 annual Wildlife Society conference.
- Organized ‘*Furbearer Management*’ symposium at the 2007 annual Wildlife Society conference.

Association of Fish and Wildlife Agencies

- Active Appointment to International Affairs Committee
- Active Appointment to Sustainable Use of Wildlife Committee

Association of Fish and Wildlife Agencies (AFWA) United States Furbearer Conservation Working Group

- Participate in the development and implementation of the Best Management Practices for Trapping program.
- Serve on research subcommittee and outreach subcommittee
- Train Sportsmen’s’ Educators of New York and Connecticut in the Best Management Practices techniques developed by AFWA for trapping furbearers.
- Assisted in development of the national trapping education program

Northeast Furbearer Resource Technical Working Group

- Coordinate fur-harvest data sharing efforts of 14 jurisdictions.
- Compile historical muskrat harvest records from northeast US and eastern Canada to explore possible range-wide population declines.

Other Academic Service:

University of Wisconsin – Madison

- Affiliate Researcher and honorary fellow – Department of Forestry and Wildlife Science
 - Supervisor for 3 post-doctoral students

Peer reviewer

- Wildlife Monographs
- Journal of Fish and Wildlife Management
- Human Dimensions of Wildlife
- Canadian Wildlife Biology and Management
- Legislative-Citizen Commission on Minnesota Resources

Peer Reviewed Publications (25 in print, several more in review not listed here) :

Taylor, J. M., Crimmins, S. M., and Roberts, N. M.. 2022. Assessing winter habitat selection by river otters using aerial surveys. *Wildlife Society Bulletin*. 46:e1349.

Stauffer, G.E., Roberts, N.M., Macfarland, D.M. and Van Deelen, T.R. 2021. Scaling Occupancy Estimates up to Abundance for Wolves. *Journal of Wildlife Management*. 85: 1410-1422.

Sundelius, A.J., Forman, N., Roberts, N.M., Rossler, S.T., Ruid, D.B. and Willging, R.C. 2021. An Evaluation of Body-grip Trap Trigger Configurations for Reducing River Otter Take Incidental to Beaver Trapping. *Wildlife Society Bulletin*. 45: 202-205.

Bauder, J.M., Ruid, D., Roberts, N.M., Kohn, B. and Allen, M.L. 2021. Effects of translocation on survival of nuisance bears. *Animal Conservation*. <https://doi.org/10.1111/acv.12684>

White, H.B., Batcheller, G.R., Boggess, E.K., Brown, C.L., Butfiloski, J.W., Decker, T.A., Erb, J.D., Fall, M.W., Hamilton, D.A., Hiller, T.L., Hubert, G.F., Jr., Lovallo, M.J., Olson, J.F. and Roberts, N.M. 2021. Best Management Practices for Trapping Furbearers in the United States. *Wildlife Monographs*. 207: 3-59.

Allen M. L., Roberts N. M., Bauder J. M. 2020. Relationships of catch-per-unit-effort metrics with abundance vary depending on sampling method and population trajectory. *PLOS ONE* 15: e0233444

J. M. Bauder, N. M. Roberts, D. Ruid, B. Kohn, M. L. Allen. 2020. Black Bear Translocations in Response to Nuisance Behaviour Indicate Increased Effectiveness by Translocation Distance and Landscape Context. *Wildlife Research*. 47: 426-435.

N. M. Roberts, M. J. Lovallo, and S. M. Crimmins. 2020. River Otter Status, Management, and Distribution in the United States: Evidence of Large-Scale Population Increase and Range Expansion. *Journal of Fish and Wildlife Management*. 11: 279- 286.

Allen, M. L., N. M. Roberts, M. J. Farmer, and T. R. Van Deelen. 2019. Decreasing Available Bobcat Tags Appear to Have Increased Success, Interest, and Participation Among Hunters. *Human Dimension of Wildlife*. 24(4): 349-362.

Roberts, N.M. 2019. Using Experimental Trapping Seasons to Explore Fisher Harvest Management Uncertainties: Is Timing Everything? *International Journal of Environmental Science*. 76: 663-674.

Maximilian L. Allen, N.M. Roberts and T.R. Van Deelen. 2018. Hunter Selection for Larger and Older Male Bobcats Affects Annual Harvest Demography. *Royal Society Open Science*. 5(10):180668.

Maximilian L. Allen, A. Norton, G. Stauffer, N. M. Roberts, Y. Luo, Q. Li, D. MacFarland, and T. Van Deelen. 2018 Bayesian State-Space Model Using Age-at-Harvest Data for Estimating the Population of Black Bears (*Ursus americanus*) in Wisconsin. *Scientific Reports*. 8:12440

Maximilian L. Allen, B. Kohn, N. M. Roberts, S. M. Crimmins and T. R. Van Deelen. 2018. Benefits and Drawbacks of Determining Reproductive Histories for Black Bears (*Urus americanus*) from Cementum Annuli Techniques. *Canadian Journal of Zoology*. 95: 991-995.

L. R. Walleser, S. M. Crimmins, and N. M. Roberts. 2016. Estimating the Age of Male Gray Wolves (*Canis lupus*) Using Baculum Measurements. *Canadian Field Naturalist*. 130:212-215.

White, H. B, T, Decker, M. J. O'Brien, J. Organ, and N. Roberts. 2015. Trapping and Furbearer Management in North American Wildlife Conservation. *International Journal of Environmental Science*. 72:756-769

Roberts, N.M., S.M. Crimmins, D.A. Hamilton, and E. Gallagher. 2012. Implantation and parturition dates of river otters *Lontra canadensis* in southern Missouri. *Canadian Field Naturalist*. 126:28-30.

Crimmins, S.M., N.M. Roberts, and D.A. Hamilton. 2011. Age-specific reproductive rates of river otters in Southern Missouri. *Southeastern Naturalist* 10(3): 501-508.

Roberts, N.M. and S.M. Crimmins. 2010. An update of bobcat (*Lynx rufus*) population status and management in North America: evidence of large-scale population increase. *Journal of Fish and Wildlife Management* 1(2):169-174.

Roberts, N.M. and S.M. Crimmins. 2010. Are muskrat populations declining? An examination of harvest data from the Northeastern United States and Eastern Canada. *Northeastern Naturalist* 17:229-238.

Crimmins, S.M., N.M. Roberts, and D. A. Hamilton. 2009. Seasonal detection rates of river otters (*Lontra canadensis*) using bridge-site and random-site surveys. *Canadian Journal of Zoology* 87:993-999.

Crimmins, S.M., N.M. Roberts, and D. A. Hamilton. 2009. Effects of prey size on scat analysis to determine river otter *Lontra canadensis* diet. *Wildlife Biology* 15(4):449-453.

Roberts, N. M., D.J. Henzler, and L. Clark. 2009. Serological evidence of Avian Influenza (H4N6) exposure in a wild caught raccoon. *Avian Diseases* 53:455-457

Roberts, N.M., C.F. Rabeni, and D. A. Hamilton. 2008. River otter food habits in the Missouri Ozarks. *Canadian Field Naturalist* 122:303-311.

Roberts, N.M., S.M. Crimmins, D.A. Hamilton, and E. Gallagher. 2008. An Evaluation of Bridge-Sign Surveys to Monitor River Otter (*Lontra canadensis*) Populations. *American Midland Naturalist* 160:358-363.

Roberts, N.M. C.F. Rabeni, and J.S. Stanovick. 2007. Distinguishing Centrarchid Genera by Use of Lateral Line Scales. *North American Journal of Fisheries Management* 27:215-217.

Other Publications:

N. M. Roberts and C. Olfenbuttel. A Transformation in Trapping – trapping has evolved, aiding research and conservation. *The Wildlife Professional*. July/August 2019

J. Erb, N.M. Roberts, and C. Dwyer. An *Otterly* Successful Conservation Story – The Return of North American River Otters. *The Wildlife Professional*. June 2018

Roberts, N.M. and N. Forman. 2017. Big on Bobcats. *Wisconsin Natural Resources* (magazine)

United States Fish and Wildlife Service. 2014. How to Develop a Survey Protocol: A Handbook. A supplemental handbook developed to assist in the implementation of national policies regarding monitoring programs.

MacDuff, A. and N. Roberts. 2010. Furbearer Hunting in New York. *New York State Hunting Guide*. 2009-2010 Season

Roberts, N.M. 2009. Wild Fur Identification Aid. A guide for distinguishing fur pelts and fur products of the *Lynx* species. (Prepared for international CITES enforcement with the USFWS International Affairs division) Cornell University, Department of Natural Resources, Ithaca, New York, USA.

Roberts, N. M. 2008. Bobcat distribution, population status, and monitoring in the United States. Association of Fish and Wildlife Agencies CITES Working Group. Washington, DC.

Roberts, N. M. 2007. Overview of Bobcat Distribution and Population Assessment Research Efforts in Mexico. Association of Fish and Wildlife Agencies CITES Working Group. Washington, DC.

Roberts, N. M. 2009. Furbearer Diseases and You: What You Need to Know. *Trapper and Predator Caller* magazine.

Roberts, N. M. 2008. Why are you asking me that? What biologists do with the information they collect from you. *The Trapper and Predator Caller* magazine.

Roberts, N. M. 2005. River Otter Appetites. *The Trapper and Predator Caller* magazine.

Roberts, N. M. 2005. Otter Appetites. *Missouri Conservationist* magazine.

Awards:

Advocate of the Year -2021

Award presented by the Wisconsin Trappers Association for accomplishments in promoted science-driven furbearer management

Excellence in Research Award - 2018

Award presented by WDNR for research accomplishments

Wildlife Professional of the Year Award – 2017

Award presented by the Wisconsin Wildlife Federation.

Wildlife Biologist of the Year Award – 2014

Award presented by the Wisconsin Conservation Congress to one biologist or researcher a year for outstanding service.

United States Fish SFWS Superior Service Awards – 2011, 2012, and 2013

Achieved a superior performance review and award for each years' service with USFWS