

Jacqueline L. Frair

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Education and Professional Training

Ph.D. Environmental Biology and Ecology	2005
University of Alberta, Edmonton, Alberta, Canada	
M.S. Natural Resources, Wildlife Specialization	1999
University of Wisconsin, Stevens Point, Wisconsin, USA	
B.S. Natural Resources, Wildlife Specialization	1994
Cornell University, Ithaca, New York, USA	
A.A.S. Arts and Science	1992
Tompkins Cortland Community College, Dryden, New York, USA	

Professional Appointments

Director, Roosevelt Wild Life Station	2019 – present
Associate Director, Roosevelt Wild Life Station	2010 – 2019
SUNY College of Environmental Science and Forestry, Syracuse, New York	
Professor	2019 – present
Associate Professor	2012 - 2019
Assistant Professor, Wildlife Ecology	2006 – 2012
SUNY College of Environmental Science and Forestry	
Department of Environmental and Forest Biology, Syracuse, New York	
Post-Doctoral Research Associate	
— SUNY-ESF, Dept. of Environmental and Forest Biology, Syracuse, New York	2006
— Université Laval, Québec, Québec, Canada	2006
— University of Alberta, Edmonton, Alberta, Canada	2005 – 2006
Wildlife GIS Coordinator	1997 – 2000
Ducks Unlimited, Inc., Anchorage, Alaska	

Other Work Experience

Biological Technician – Bureau of Land Management, Fairbanks, Alaska	1997
Gray Wolf Trapper/Biologist – Wisconsin Department of Natural Resources, Gordon, Wisconsin	1995 – 1996
Editorial Clerk – Journal of Wildlife Management, Stevens Point, Wisconsin	1996 – 1997
Biological Aide – U.S. Forest Service, Rhinelander, Wisconsin	1994
Assistant Coordinator, Environmental Science Interns Program – Cornell University, Ithaca, New York	1993 – 1994

**Regular
Courses
Taught**

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- Applied Wildlife Science – junior level course (EFB 491)** 2007 – present
 - Applied Wildlife Science – graduate offering (EFB 796)** 2011 – present
 - Analytically-intensive course required by wildlife science majors: sampling design, occupancy modeling, distance sampling, capture-mark-recapture, life tables and Leslie matrices, conservation genetics, habitat and sustainable harvest models, and population viability analysis. Includes two 1-hour discussion periods and one 3-hour lab per week, a team-based field project, and a professional conference experience (3 credit hours). Around 31-50 undergraduates and 1-8 graduate students each year.
 - Landscape Ecology (EFB 650)** 2007, 2008, 2010, 2013, 2016
 - Graduate-level, computer lab-intensive course that covers the theoretical foundations for and applications in Landscape Ecology. Focuses on quantifying spatial pattern, reciprocal interactions between spatial pattern and organisms, GIS applications and statistical models for spatial processes (3 credit hours). Between 11-18 students each year.
 - Quantitative Methods and Models in R (EFB/FOR 796)** 2009, 2011, 2012, 2014, 2016, 2017, 2018
 - Graduate level, analytically-intensive course covering frequentist, likelihood, and Bayesian statistical methods in ecology using program R (3 credit hours). Between 10-20 graduate students each year. Co-taught since 2012 with Dr. John Stella (SUNY-ESF Department of Forest and Natural Resources Management).
 - Wildlife Field Techniques** 2007, 2008, 2009, 2010, 2011, 2012, 2015, 2017
 - A two-week field immersion course in wildlife conservation providing undergraduates hands-on experience with the questions and tools involved in the study of free-ranging mammals, birds and fish. Course activities are taught by a diversity of wildlife professionals, and in some years have earned students hunter and trapper education certificates. Course has taken place at the SUNY-ESF Ranger School (Wanakena), Cranberry Lake Biological Station (Cranberry Lake), and Adirondack Ecological Center (Newcomb) and in 2015 and 2017 was sponsored by Jody and Doreen Garrett on the Lucky Star Ranch (Chaumont, NY). Between 12-19 students each year.
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**Other
Courses
Taught**

- Graduate Seminar Courses and Informal Science Discussion Groups**
- Vertebrate Conservation Seminar Series and Potluck Social 2015- 2018
(evening mixer and research discussion for faculty, post-docs and students from the labs of J. Frair, J. Cohen, S. Farrell, M. Schummer and J. Gibbs of SUNY-ESF and S. Parks of Syracuse University; hosted monthly at the home of J. Frair)
- Advances in occupancy modeling Spring 2018
- Mixed effects models Spring 2017
- Foraging ecology Fall 2016
- Resource Selection Functions Fall 2016
- Vertebrate Conservation Conversation Fall 2010, 2011

Hunter and Trapper Education for Wildlife Professionals 2011, 2012
 Undergraduate course engaging students with the hunting and trapping constituencies involved in the wildlife profession. Professionals from state and federal wildlife agencies and non-governmental conservation organizations led discussions of how hunting and trapping is managed as a tool for achieving population objectives. Students received training leading to certification in all 4 NY State Sportsmen Education modules, and worked deer and waterfowl check stations (3 credit hours). Between 37-43 students each year.

Arctic Ecosystems: Field Methods and Assessment 2007
 An exploration of arctic ecology and what it takes to work in such environments. On campus instruction explored plant and animal life in strongly seasonal arctic environments and a 10-day wilderness backpacking trip through Denali State Park, Alaska, embedded students in an alpine environment and culminated in certifications for Wilderness First Aid (American Red Cross) and Wilderness Steward (Outdoor Education Association; 3 credit hours). Co-taught with Thomas Welch. 8 students.

Peer-reviewed Publications

Underlining of first authors indicates graduate students advised by J. Frair

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 Lesser, M.R., Dovciak, M., Frair, J.L., Curtis, P., Roberts, M., and Hurst, J. (in press) Modelling white-tailed deer impacts on forest regeneration at scales relevant to deer management. *Forest Ecology and Management*.

Bastille-Rousseau, F., C.B. Yackulic, J.P. Gibbs, J.L. Frair, F. Cabrera, and S. Blake (2019) Migration triggers in a large herbivore: Galápagos giant tortoises navigating resource gradients on volcanoes. *Ecology*, early view (e02658). **** Article spotlighted on the journal cover.**

Berkman, L.K., J.L. Frair, P.E. Marquardt, D.M. Donner, J.C. Kilgo, and C.M. Whipps (2019) Spatial genetic analysis of coyotes in New York State. *Wildlife Society Bulletin*, 43(1):21-30.

Peach, M.A., J.B. Cohen, J.L. Frair, B. Zuckerberg, P.J. Sullivan, W.F. Porter, and C. Lang (2019) The value of protected areas to avian persistence across 20 years of climate and land use change. *Conservation Biology*, 33(2):423-433.

Fuda, R.K., S.J. Ryan, J.B. Cohen, J. Hartter, and J.L. Frair (2018) Assessing the impacts of oil exploration and restoration on mammals in Murchison Falls Conservation Area, Uganda. *African Journal of Ecology*, 56(4):804-817. **** Article highlighted as a “top 20 most read paper” from this journal in 2017-18.**

Whitman, B., W. Porter, A. Dechen Quinn, D. Williams, J. Frair, B. Underwood, and J. Crawford. (2018) Movement behavior preceding autumn mortality for white-tailed deer in central New York. *Journal of Mammalogy*, 99(3):675-683.

Petracca, L.S., Frair, J.L., Cohen, J.B., Calderon, A.P., Carazo-Salazar, J., Castaneda, F., Corrales-Gutierrez, D., Foster, R.J., Harmsen, B., Hernandez-Potosme, S., Robinson, N., Salom-Perez, R., Urbina, Y., Zeller, K.A., and Quigley, H. (2018) Robust inference on large-scale species habitat use with interview data: The status of jaguars outside of protected areas in Central America. *Journal of Applied Ecology*, 55:723-734.

Peach, M., Cohen, J., and Frair, J. (2017) Single-visit dynamic occupancy models: an approach to account for imperfect detection with Atlas data. *Journal of Applied Ecology*, 54:2033-2042.

Bastille-Rousseau, G., Yackulic, C.B., Frair, J.L., Cabrera, F., Rousseau, L.-P., Wikelski, M., Keummeth, F. and Blake, S. (2017) Animal movement in the absence of predation: environmental drivers of movement strategies in a partial migration system. *Oikos*, 126:1004-1019.

Tortato, F., Devlin, A., Hoogensteijn, R., May, J., Frair, J., Crawshaw, P., Izzo, T. and Quigley, H. (2017) Infanticide in a jaguar (*Panthera onca*) population – does the provision of livestock carcasses increase the risk? *Acta Ethologica*, 20(1):69-73.

Petracca, L. and Frair, J. (2017) When methodological flaws limit inference: A response to Caruso et al. (2016). *Oryx*, 51(2):208.

Fuda, R.K., Ryan, S.J., Cohen, J.B., Hartter, J., and Frair, J.L. (2016) Assessing impacts to primary productivity at the park edge in Murchison Falls Conservation Area, Uganda. *Ecosphere* 7:e01486.

Bastille-Rousseau, G., Yackulic, C., Frair, J., Cabrera, F., and Blake, S. (2016) Allometric and temporal scaling of movement characteristics in Galapagos tortoises. *Journal of Animal Ecology* 85:1171-1181.

Bastille-Rousseau, G., Potts, J., Yackulic, C., Frair, J., Ellington, E.H., and Blake, S. (2016) Flexible characterization of animal movement pattern using net squared displacement and a latent state model. *Movement Ecology*, 4:15. R package available at: <https://github.com/BastilleRousseau/lsmnsd>

Hansen, S.K., Frair, J.L., Underwood, H.B., and Gibbs, J.P. (2015) Pairing call-response surveys and distance sampling for a mammalian carnivore. *Journal of Wildlife Management*, 79(4):662-671.

Campbell, S.P., Frair, J.L., Gibbs, J.P. and Rundell, R. (2015) Coexistence of the endangered, endemic Chittenango Ovate Amber Snail (*Novisuccinea chittenangoensis*) and a non-native competitor. *Biological Invasions*, 17(2):711-723.

Warsen, S.A., Frair, J.L., and Teece, M.A. (2014) Isotopic investigation of niche partitioning among native carnivores and the non-native coyote (*Canis latrans*). *Isotopes in Environmental and Health Studies*, DOI: 10.1080/10256016.2014.897946.

LeGrande, C.L. and Frair, J.L. (2014) The power of GIS: useful tips on using spatial analysis tools. *The Wildlife Professional*, 8(4):50-53.

Campbell, S.P., Frair, J.L., Gibbs, J.P., and Volk, T.A. (2012) Use of short-rotation coppice willow plantations by birds and small mammals in central New York. *Biomass and Bioenergy*, 47:342-353.

- Zuckerberg B., Huettmann F., and Frair J. (2011) Data management as a scientific foundation for reliable predictive modeling. Chapter 3 in Drew A., Huettman F., and Wiersma Y., eds., *Predictive Modeling in Landscape Ecology*. Springer Verlag, NY.
- Leblond, M., Frair, J., Fortin, D., Dussault, C., Ouellet, J.P. and Courtois, R. (2011) Assessing the influence of resource covariates at multiple scales: an application to forest-dwelling caribou faced with intensive human activity. *Landscape Ecology*, 26(10):1433-1446.
- Eager, P.T., Allen, D.C., Frair, J.L., and Fierke, M.K. (2011) Within-tree distributions of the *Sirex noctilio* Fabricius (Hymenoptera: Siricidae) – parasitoid complex and development of an optimal sampling scheme. *Environmental Entomology*, 40(5):1266-1275.
- Frair, J., Fieberg, J., Hebblewhite, M., Cagnacci, F., DeCesare, N. and Pedrotti, L. (2010) Resolving issues of imprecise and habitat-biased locations in ecological analyses using GPS telemetry data. *Philosophical Transactions of the Royal Society B-Biological Sciences*, 365(1550):2187-2200. **** Article spotlighted as being among “the most-cited articles of the year” for this journal.**
- Fieberg, J., Boyce, M.S. Matthiopoulos, J., Hebblewhite, M. and Frair, J. (2010) Correlation and studies of habitat selection: problem, red herring, or opportunity? *Philosophical Transactions of the Royal Society B-Biological Sciences*, 365(1550):2233-2244.
- Beyer, H.L., Haydon, D.T., Morales, J.M., Frair, J.L., Hebblewhite, M., Mitchell, M., and Matthiopoulos, J. (2010) The interpretation of habitat preference metrics under use-availability designs. *Philosophical Transactions of the Royal Society B-Biological Sciences*, 365(1550):2245-2254. **** Article awarded “Wildlife Publication Award” by The Wildlife Society.**
- Merrill, E., Sand, H., Zimmerman, B., McPhee, H., Webb, N., Hebblewhite, M., Wabakken, P. and Frair, J. (2010) Building a mechanistic understanding of predation with GPS-based movement data. *Philosophical Transactions of the Royal Society B-Biological Sciences*, 365(1550):2279-2288.
- Morales, J.M., Moorcroft, P.R., Matthiopoulos, J., Frair, J.L., Kie, J.G., Powell, R.A., Merrill, E.H., and Haydon, D.T. (2010) Building the bridge between animal movement and population dynamics. *Philosophical Transactions of the Royal Society B-Biological Sciences*, 365(1550):2289-2301.
- Van Moorter, B., Visscher, D.R., Jerde, C. L., Frair, J.L. and Merrill, E.H. (2010) Identifying movement states from location data using cluster analysis. *Journal of Wildlife Management*, 74(3):588-594.
- Wolf, M., Frair, J., Merrill, E. and Turchin, P. (2009) The attraction of the known: the importance of spatial familiarity in habitat selection in wapiti (*Cervus elaphus*). *Ecography*, 32, 401-410.

Frair, J.L., Merrill, E.H., Beyer, H.L. and Morales, J.M. (2008) Thresholds in landscape connectivity and mortality risks in response to growing road networks. *Journal of Applied Ecology*, 45, 1504-1513. ** Article spotlighted as "Editor's choice" for this issue.

Frair, J.L., Merrill, E.H., Allen, J.R. and Boyce, M.S. (2007) Know thy enemy: experience affects elk translocation success in risky landscapes. *Journal of Wildlife Management*, 71(2), 541-554.

Gillies, C.S., Krawchuk, M.A., Aldridge, C.L., Hebblewhite, M., Frair, J.L., Saher, D.J., Stevens, C.E., Jerde, C.J. and Nielsen, S.E. (2006) Application of random effects to the study of resource selection by animals. *Journal of Animal Ecology*, 75, 887-898.

Visscher, D.R., Merrill, E.H., Fortin, D. and Frair, J.L. (2006) Estimating woody browse availability for ungulates at increasing snow depths. *Forest Ecology and Management*, 222, 348-354.

Frair, J.L., Merrill, E.H., Visscher, D.R., Fortin, D., Beyer, H. and Morales, J.M. (2005) Scales of movement by elk (*Cervus elaphus*) in response to heterogeneity in forage resources and predation risk. *Landscape Ecology*, 20, 273-287.

Anderson, D.P., Forester, J.D., Turner, M.G., Frair, J.L., Merrill, E.H., Fortin, D., Beyer, H., Mao, J.S. and Boyce, M.S. (2005) Factors influencing seasonal home-range sizes in elk (*Cervus canadensis*) in North American landscapes. *Landscape Ecology*, 20, 257-271.

Morales, J.M., Fortin, D., Frair, J.L. and Merrill, E.H. (2005) Adaptive Models for Large Herbivore Movements in Heterogeneous Landscapes. *Landscape Ecology*, 20, 301-316.

Frair, J.L., Nielsen, S.E., Merrill, E.H., Lele, S.R., Boyce, M.S., Munro, R.H.M., Stenhouse, G.B. and Beyer, H.L. (2004) Removing GPS collar bias in habitat selection studies. *Journal of Applied Ecology*, 41, 201-212.

Morales, J.M., Haydon, D.T., Frair, J., Holsinger, K.E. and Fryxell, J.M. (2004) Extracting more out of relocation data: building movement models as mixtures of random walks. *Ecology*, 85(9), 2436-2445.

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Other Publications

Frair, J.L. and Gibbs, J. (2011) The Roosevelt Wild Life Station: Revitalizing a Forgotten Conservation Legacy. Fair Chase, the official publication of the Boone and Crockett Club, Missoula, MT. Spring issue.

Frair, J.L. (2010) SUNY-Environmental Science and Forestry studies coyotes' impact on deer. Page 12, New York Hunting & Trapping, 2010-11 Official Guide to Laws & Regulations (vol 4, issue no. 1, October 2010).

Frair, J., Merrill, E., Allen, J. and Boyce, M. (2010) Experience counts: improving translocation success of elk in Alberta. Fair Chase, the official publication of the Boone and Crockett Club, Missoula, MT. Fall issue.

Frair, J.L. (2005) Survival and movement behaviour of resident and translocated wapiti (*Cervus elaphus*): Implications for their management in west-central Alberta, Canada. Ph.D. Dissertation, University of Alberta, Edmonton, Alberta, Canada.

Frair, J.L. (1999) Crossing paths: gray wolves and highways in the Minnesota-Wisconsin border region. M.S. Thesis, University of Wisconsin, Stevens Point, Wisconsin, USA.

Frair, J.L., Anderson, E.M., Kohn, B.E., Shelley, D.P., Gehring, T.M., and Unger, D.E. (1996) Impacts of Highway 53 expansion on gray wolves: preliminary results. Pages 123-131 in Fascione, N., comp., Wolves of America Conference Proceedings. Defenders of Wildlife, Washington, D.C.

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Invited Presentations

Adirondack moose: population status and limiting factors. New England Society of American Foresters annual meeting (Mar 2019). Special conference section on moose in the Northeast.

Educating the next generation of conservation leaders: Challenges for ‘sustainable use’ in university curricula. (Aug 2018) Women and Sustainable Hunting, 4th Annual Conference, Artemis Working Group of the International Council on Game and Wildlife Conservation, Illomansti, Finland.

Top Dog? The ecological role of the coyote in northeastern forests. Dale L. Travis Public Lecture Series, SUNY ESF, Syracuse, NY (Mar 2017). Link to video recording of the talk: <http://www.esf.edu/efb/travislecture/>.

Top Dog? Assessing the impacts of coyotes on deer in the northeast. Webinar hosted by the U.S.F.S. Northeastern States Research Cooperative: <https://vimeo.com/145465495>.

Should I major in conservation biology or wildlife ecology? What’s the difference? Ignite TWS, The Wildlife Society Annual Conference, Winnipeg, Manitoba (Oct 2015)

The conservation broker: bridging the gap between academic research and wildlife management. Biology Seminar Series, University of Maine, Orono, ME (Nov 2015)

The ecological role of the coyote in the Northeastern U.S. (various titles)

- NYSDEC Indian Nations Meeting, SUNY ESF, Syracuse, NY (Apr 2015)
- The Wildlife Society Annual Conference, Pittsburgh, PA (2014)
- Biology Dept. Seminar Series, Univ. of Alberta, Edmonton, Alberta, Canada (2014)
- Earth Lecture Series, SUNY ESF, Syracuse, NY (2014)

Shale energy technology and spatial distribution in North America. The Wildlife Society Annual Conference, symposium on “Understanding the effects of shale energy development on wildlife in North America,” Pittsburgh, PA (2014). Presented by Shannon Farrell (co-author).

Revealing novel links among bat ecology, genetics, and disease to understand white-nose syndrome. SUNY ESF and Upstate Medical Center symposium on “From lab to landscape: integrated infectious disease research”, Syracuse, NY (2014). Presented by Leah Berkman (co-author).

The impact of oil & gas development on large mammals: lessons from the west. Symposium on “The Biological Impacts of Hydraulic Fracturing” at the Northeast Natural History Conference, Albany, NY (2011)

Tog Dog: niche of the coyote in NY State. My Place in the Finger Lakes, 3rd Annual Conference, The Finger Lakes Institute at Hobart and William Smith College, Geneva, NY (2009)

Tracking wildlife with GPS technology. GIS Day, SUNY-ESF, Syracuse, NY (2010)

GPS collar errors and solutions: a prospectus for studies of animal movement and resource selection. Workshop on “GPS-Telemetry Data: challenges and opportunities for behavioral ecology studies”, the Centre for Alpine Ecology, Fondazione Edmund Mach, Trento, Italy (2008)

Know thy enemy: experience affects translocation success in risky landscapes
—McGill University undergraduate wildlife course, Newcomb, NY (2007)
—GIS Day, University of Alberta (2004)

Removing GPS collar bias in habitat selection studies. Workshop on modern resource selection analyses at The Wildlife Society Annual Conference, Anchorage, AK (2006)

Thresholds in landscape connectivity and mortality risks for elk in response to growing road networks: a case study of elk in managed forests. Ecology-Wildlife Biology Seminar Series, University of Montana, Missoula, MT (2006)

Using simple movement models to understand the impacts of roads on habitat effectiveness. Biology Department Seminar Series, Université Laval, Québec City, Québec (2006)

Analyzing competing risks in survival models. Statistical Ecology Seminar, Department of Biological Sciences, University of Alberta (2005)

Using Cox regression to optimize translocation success: a case study with elk. Symposium on survival analysis at The Wildlife Society Annual Conference, Calgary, AB (2004)

Evaluating the success of elk translocations to the Rocky Mountain foothills, AB. Montane Science Workshop, Sundre, Alberta (2003)

Can small-scale movement biases to human disturbances affect the distribution patterns of herbivores? Symposium on “Animal movements in heterogeneous environments” at the International Association of Landscape Ecology Annual Conference, Darwin, Australia (2003)

The effects of highway expansion on a re-colonizing wolf populations. Wildlife Ecology class, Department of Natural Resources, Cornell University (1996)

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Conference Presentations

Presentations given by J. Frair except where noted

Assessing river otter population status in NY (and similar titles)

- Northeast Fish and Wildlife Conference, Vermont (2018; given by K. Powers, M.S. student in the Frair lab)
- Northeast Natural History Conference, Connecticut (2017)
- The Wildlife Society Annual Conference, North Carolina (2016; given by K. Powers)

Estimating nutritional carrying capacity for moose in NY (and similar title). Presented by S. Peterson (M.S. student in the Frair lab)

- Northeast Fish and Wildlife Conference, Vermont (2018)
- North American Moose Conference, Washington (2018)
- 51st North American Moose Conference, Ingonish, Nova Scotia (2017)
- The Wildlife Society Annual Conference, North Carolina (2016)

Anthropogenic drivers of space use among coyote, gray fox, and fisher on Fort Drum Military Installation, NY (and similar titles). Presented by C.P. Low (M.S. student in the Frair lab)

- Northeast Natural History Conference, Connecticut (2017)
- The Wildlife Society Annual Conference, North Carolina (2016)

Robust inference on species distribution in human-dominated landscapes using interview data: jaguar in Central America. Presented by L. Petracca (Ph.D. student in the Frair lab)

- The Wildlife Society Annual Conference, North Carolina (2016)
- Ecological Society of America, Annual Meeting, Florida (2016)

Single-visit dynamic occupancy models: An approach to account for imperfect detection with Atlas data. Presented by M. Peach Lang (Ph.D. student in the Frair lab)

- North American Ornithological Conference, Washington, D.C. (2016)

Status of Adirondack Moose: Early returns from aerial surveys and animal captures. J. Frair, P. Schuette, K. Schuler, B. Tabor and E. Reed. The Wildlife Society annual conference, Winnipeg, Manitoba (Oct 2015).

Documenting moose population size and distribution across public and private lands in the Adirondacks. Presented by P. Schuette (post-doc in the Frair lab)

- North American moose conference and workshop, Granby, CO (Apr 2015)
- Northeast Fish and Wildlife Conference, Newport, Rhode Island (Apr 2015)

Status of Adirondack Moose: Early returns from aerial surveys and animal captures. J. Frair, P. Schuette, K. Schuler, B. Tabor and E. Reed. The Wildlife Society annual conference, Winnipeg, Manitoba (Oct 2015).

Deer impacts on forest regeneration at spatial scales relevant to management decisions. Presented by M. Lesser (post-doc in the Dovciak and Frair labs). The Northeast Fish and Wildlife Conference, Newport, Rhode Island (Apr 2015).

Estimating coyote abundance via vocalizations and distance sampling (and similar titles). All presented by S. Hansen (M.S. student in the Frair lab)
—Northeast fish and Wildlife Conference, Saratoga Springs, NY (2013)
—The Wildlife Society Annual Conference, Hawaii (2011)
—Northeast Fish and Wildlife Conference, Manchester, NH (2011)
—Spotlight on Student Research, SUNY ESF, Syracuse, NY (2011)
—The Wildlife Society Annual Conference, Snowbird, UT (2010)

Quantifying coyote kill rates of white-tailed deer in NY State (and similar titles). All presented by R. Holevinski (Ph.D. student in the Frair lab)
—Northeast fish and Wildlife Conference, Saratoga Springs, NY (2013)
—Northeast fish and Wildlife Conference, Manchester, NH (2011)
—The Wildlife Society Annual Conference, Snowbird, UT (2010)
—The Wildlife Society, NY State Chapter, Alexandria Bay, NY (2010)
—The Wildlife Society, NY State Chapter, Owego, NY (2008)

Sélection d’habitat du caribou forestier en forêt aménagée . Société Québécoise pour l'Étude Biologique du Comportement, Sherbrooke, Québec, Canada (2011). Presented by M. Leblond (co-author).

The biogeography of songbirds on islands in Cranberry Lake. 18th annual Adirondack Research Consortium, Lake Placid, NY (2011). Presented by S. Warsen (M.S. student in the Frair lab).

The dividing line: genetically differentiating two stocks of coyotes in NY State
—Northeast Fish and Wildlife Association Annual Conference, Boston, MA (2010).
—The Wildlife Society Annual Conference, Monterey, CA (2009)

The effect of trails on salamander abundance: implications for trail management. Spotlight on Student Research, SUNY-ESF (2010). Poster presented by L. Beaty (undergraduate mentee).

Testing for the presence of necrophobic behavior in small mammals. Spotlight on Student Research, SUNY-ESF (2010). Poster presented by G. Prounis (undergraduate mentee).

Using site occupancy to estimate eastern coyote populations. The Wildlife Society Annual Conference, Monterey, CA (2009). Presented by R. Holevinski (Ph.D. student in Frair lab).

Disjunct phenologies allow the coexistence of a threatened and an invasive terrestrial snail species. Ecological Society of America, Albuquerque, New Mexico (2009). Presented by S. Campbell (post-doc in Frair lab).

Cumulative effects of wolves and industrial activities on elk (and similar titles)

- Statistical Methods for Geographic and Spatial Data in Management of Natural Resources, NCDIS, Montreal, Canada (2010). Presented by E. Merrill (co-author).
- The Wildlife Society Annual Conference, Miami, FL (2008)
- The Wildlife Society, Alberta Chapter, Red Deer, AB (2003)
- Partners in Conservation, Leduc, AB (2003)
- Cumulative Environmental Effects Management Conference, Calgary, AB (2000)

Foraging ecology of eastern coyotes in NY State (and similar titles). All presented by C. Boser (M.S. student in the Frair lab).

- The Wildlife Society annual conference, Monterey, CA (2009)
- Ecological Society of America, Albuquerque, NM (2009)
- The Wildlife Society annual conference, Miami, FL. (2008), poster presentation
- The Northeast Natural History X, Albany, NY (2008)

Determining the population status of eastern coyotes, a genetics approach. The Northeast Natural History Conference X, Albany, NY (2008), Presented by R. Holvevinski (Ph.D. student in Frair lab).

Habitat effectiveness and roads: revisiting the paradigm in managed forests. The Wildlife Society Annual Conference, Anchorage, AK (2006)

Scaling up local responses to roads to population-level distribution (and similar titles)

- 8th Western States and Provinces Deer and Elk Workshop, Spokane, WA (2009). Presented by E. Merrill (co-author).
- The Ecological Society of America Annual Conference, Montréal, Canada (2005).
- The Wildlife Society Annual Conference, Calgary, Alberta (2004).
- International Deer Biology Congress, Québec City, Québec (2002).

Landscape patterns and movement strategies alter wolf-elk encounter rates. The Wildlife Society annual conference, Calgary, AB (2004). Presented by E. Merrill (co-author).

Elk translocation success, study of survival and retention (and similar titles)

- International Wildlife Management Congress, Christchurch, New Zealand (2004).
- The Wildlife Society, Northwest Section, Banff, Alberta (2001).

Removing GPS collar bias in habitat selection studies (and similar titles)

- International Conference on Resource Selection Functions, Laramie, WY (2003).
- The Wildlife Society Annual Conference, Reno, NV (2001).

Application of Resource Selection Functions to modeling predator-prey dynamics.

First International Conference on Resource Selection by Animals, Laramie, WY (2003). Presented by M. Hebblewhite (co-author).

Impacts of Highway 53 expansion on gray wolves. Wolves of America Conference, Albany, NY (1996).

Wisconsin gray wolf immobilization and handling protocol. Midwest Furbearers Workshop, Upper Peninsula, MI (1996).

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**Invited
public
talks**

Tracking recovery of NY river otter

- New York River Otter recovery team, Montezuma Audubon Center (2019)
- NY Trappers Association, Executive meeting, Herkimer (2019)

Top dog? The ecological role of coyotes in northeastern forests (various titles)

- Dale L. Travis Public Lecture Series, SUNY ESF (2017)
- Great Swamp Conservancy, 20th Anniversary Celebration – Canastota, NY (Nov 2017)
- Adirondack Visitors Center – Newcomb, NY (Aug 2017)
- Public webinar hosted by the U.S. Forest Service, Northeastern States Research Cooperative (<https://vimeo.com/145465495>)
- Safari Club International, Central NY Chapter – Oneonta, NY (Apr 2015; 15 people)
- Cayuga County Federation of Conservation Clubs – Auburn, NY (Mar 2015; 70 people)
- New York State Fish and Wildlife Management Advisory Board – Pulaski, NY (2014)
- New York State Conservation Council – Utica, NY (2014)
- American Wildlife Conservation Foundation – Smyrna, NY (2014)
- Sportsman Club – New Paltz, NY (2012)
- Erie County Federation of Sportsman’s Clubs – Armor, NY (2011; 450 people)
- Junior Café Scientifique – Museum of Science and Tech., Syracuse, NY (2010)
- NY State Conservation Council – Albany, NY (2008)
- Affiliated Conservation Clubs of Madison County – Madison, NY (2007)
- International Trappers Convention – Herkimer, NY (2007)
- NY State DEC Bureau of Wildlife Annual Meeting – Hamilton, NY (2007)
- NY State Conservation Council – Albany, NY (2007)
- Rotary International, chapter meeting – Harpursville, New York (2007)

The Roosevelt Wild Life Station (various titles)

- Camp Fire Club, Conservation Fund Board of Directors – Chappaqua, NY (2015)
- Boone & Crockett Club Annual Meeting – Kansas City, MO (2011)
- ESF Foundation Board of Directors – Minnowbrook, NY (2011)

Elk survival, movement, and resource selection in the Canadian Rockies (various titles)

- Student Chapter of the Wildlife Society – SUNY-ESF, Syracuse, NY (2006)
- Alberta Conservation Association, public meeting – Rocky Mntn. House, AB (2005)
- Public Advisory Committee, Weyerhaeuser Ltd., Drayton Valley, Alberta (2004)
- Rotary International, chapter meeting – Harpursville, New York (2002)
- Rocky Mountain Elk Foundation, Banquet – Rocky Mountain House, AB (2002)
- Rocky Mountain Elk Found., Board of Directors – Rocky Mntn. House, AB (2002)
- Ta Otha School – Bighorn First Nations Reserve, Alberta (2002)
- Alberta Conservation Association, public meeting – Rocky Mntn. House, AB (2002)
- Rotary International, chapter meeting – Rocky Mountain House, Alberta (2001)
- Public Advisory Committee, Sunpine Forest Products, Sundre, Alberta (2001)

Highway 53 expansion and gray wolf dispersal in northern Wisconsin (various titles)

- Mt. Upton Elementary School – Mt. Upton, New York (1996)
- Stevens Point High School – Stevens Point, Wisconsin (1996)
- Wisconsin Department of Natural Resources – Spooner, Wisconsin (1996)
- Gordon Elementary School – Gordon, Wisconsin (Mar 1996)
- Rod & Reel Club – Wisconsin Rapids, Wisconsin (Sep 1995)

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**Current
Research
Funding**

Wildlife research and management support (omnibus MOU) 2018 – 2023

Source: NY State Department of Environmental Conservation
Amount: \$5.66 million Pls: J. Frair and M. Schiavone
Covers all projects eligible for funding under the Federal Aid in Wildlife Restoration Act at ESF. Funding directly to J. Frair under this award include:

- Northern fisher population demography 2018 – 2023
Amount: \$678,662 Pls: J. Frair, P. Jensen
- Monitor and model moose populations in New York 2018 – 2020
Amount: \$201,599 Pls: J. Frair, J. Hurst
- River otter population monitoring 2018 – 2019
Amount: \$16,015 Pl: J. Frair
- Statistical support for wildlife management and research 2018 – 2023
Amount: \$824,611 Pls: J. Frair, M. Schiavone
- New York State mammal assessment 2018 – 2023
Amount: \$963,678 Pls: S. Farrell, J. Gibbs, M. Schlesinger, J. Frair, C. Whipps
- Administrative support and project oversight 2018 – 2023
Amount: \$245,930 Pl: J. Frair, M. Schiavone

Bat movement ecology: influence of local and landscape factors on bat activity patterns 2017 – 2019

Source: USDA Forest Service, Northern Forest Research Station
Amount: \$160,000 Pls: J. Frair and D. Donner

Mapping the distributions of forest mammals across NY State: Phase I 2016 – 2019

Source: U.S.D.A. McIntire-Stennis program
Amount: \$55,496 Pls: S. Farrell, J. Frair, A. Fuller

For alternatively funded research programs ongoing in the Frair lab, visit <http://frair.weebly.com/research.html>.

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**Previous
Research
Funding**

Grants as lead PI (\$4,864,209)

- NY State Department of Environmental Conservation, \$263,327 (2018-2019) – amendment to omnibus MOU with one-year no-cost extension
- NY State Department of Environmental Conservation, \$3.4 million (2013-2018) – wildlife research and management support (omnibus MOU; \$1,572,167 in direct

- support to J. Frair)
- U.S. Army Corps of Engineers, \$146,288 (2013-2017) – research for carnivore management on Fort Drum
- USDA Forest Service, Northern Forest Research Station, \$60,256 (2015-2107) – use of genetic tools to understand microbiome and movements of bats
- USDA Forest Service, Northern Forest Research Station, \$118,876 (2012-2107) – use of genetic tools to understand microbiome and movements of bats
- Panthera, Inc., Liz Claiborne-Art Ortenberg Jaguar Research Program, \$24,035 (2012-2014) – validation of the critical jaguar corridor in eastern Guatemala
- NY Department of Environmental Conservation, \$160,538 (2010-2012) – field research on river otter population monitoring, NY
- U.S.D.A. Northern States Research Cooperative, \$40,046 (2010-2011) – field research on evolving coyote diets and resource competition, NY
- U.S.D.A. McIntire-Stennis Program, \$50,393 (2009-2011) – field and lab study of noninvasive genetic approaches for monitoring forest wildlife, NY
- NY Department of Environmental Conservation, \$678,704 (2007-2012) – field research on coyote populations and impacts on deer
- U.S. Fish and Wildlife Service, \$60,000 (2007-2009) – field research on endangered Chittenango Ovate Amber Snail, NY
- Quebec Ministry of Natural Resources, \$7,600 CD (2006) – data analysis of caribou movements and resource selection, Quebec, Canada

Grants as co-PI (\$972,483)

- U.S.D.A. Northern States Research Cooperative, \$103,746 (2014-2016) – exploration of the disease-genotype-microbiome link in white-nose syndrome for bats in the northern forest
- National Science Foundation, \$600,000 (2012-2015) – exploring how environment, physiology and life history interact to determine migration in giant tortoises
- U.S.D.A. Northern States Research Cooperative, \$106,866 (2012-2014) – quantifying beaver impacts on Adirondack forest communities at a landscape scale
- INECOL/SUNY ESF Seed Grant Program, \$5,000 (2012-13) – workshop, Mexico
- INECOL/SUNY ESF Seed Grant Program, \$5,000 (2012-13) – river otter, Mexico
- Honeywell, Inc., \$109,871 (2008-2009) – field research on use of willow bioenergy crops by wildlife, NY
- Alberta Conservation Association, \$42,000 CD (2005) – building elk resource selection models into a GIS tool for management, Alberta, Canada

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**Other
program
funding
raised**

**Endowment for Camp Fire Conservation Fund Professorship
in Wildlife Conservation at SUNY ESF**

2017

Source: Camp Fire Conservation Fund and private donors

Amount: \$1,025,000 Project lead(s): J. Frair, A. Stirratt and P. Bruenn (Camp Fire Conservation Fund), B. Greenfield, N. Heaphy, and D. Piwinski (ESF College Foundation)

Internships in Fish and Wildlife Conservation (undergrad and grad) 2019-2024
 Source: NY State Department of Environmental Conservation, Bureau of Wildlife
 Amount: \$999,089.70 Project lead: J. Frair
Previous: Internship program 2017-2019 Amount: \$336,000

Undergraduate immersion course in wildlife conservation at the Lucky Star Ranch 2015, 2016
 Source: Jody and Doreen Garrett
 Amount: \$25,000 Project lead: J. Frair

Conservation assessment of the Roosevelt Wildlife Collection at SUNY ESF 2012
 Source: Institute of Museum and Library Services, Heritage Preservation
 Amount: \$3,590 Project lead: J. Frair

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**Service to
 Department,
 College and
 University**

Student mentoring

- Supervisor to 5 post-doctoral researchers (Campbell, Berkman, Schuette, Wheat, Hinton) and co-supervisor to 3 (Lesser, Bastille-Rousseau, Cheeseman)
- Major professor to 5 Ph.D. students (Holevinski, Devlin, Peach-Lang, Petracca, Bonjorne deAlmeida, Cunningham) and co-major professor to 1 (Peach)
- Major professor to 9 M.S. students (Boser, Warsen, Hansen, Saldivar Bellassai, Rentz, Low, Powers, Peterson, Matiukhina) and co-major professor to 2 (Calderon and Fuda)
- Major professor to 2 M.P.S. students (LeGrande, MacDuff)
- Steering member or examiner on 38 M.S. or Ph.D. student committees at ESF and 5 at Syracuse University
- Advised 4 undergraduate honors students (Wittmeyer, Keiter, Brubaker, Jimenez), 4 REU projects, and 5 independent research projects
- Advisor to ~25 undergraduates/year in the wildlife science major
- Faculty advisor to The Wildlife Society ESF Student Chapter, 2008-2011

Staff supervision

- Supervised R. Giegerich, Instructional Support Specialist 2009-present

Committee appointments and other positions

- Roosevelt Wild Life Station, Director 2019-present
- Roosevelt Wild Life Station, Associate Director 2010-2019
- ESF Discovery Challenge, People Advisory Group, co-chair 2018-2019
- Fish and Wildlife Internship Coordinator, NY State DEC sponsored 2017-present
- Curriculum Coordinator for Wildlife Science major 2010-present
- Participated in 7 faculty/staff searches
 - Camp Fire Endowed Professor of Wildlife Conservation, chair 2018
 - Director, College Foundation, committee member 2016
 - Wildlife Habitat Ecology Professor, chair 2013

- Wildlife Ecology Professor, committee member 2010
- General Biology Instructor, committee member 2008
- Forest and Natural Resources Professor, committee member 2007-2008
- IT Programmer/Analyst, committee member 2007
- Council for Geospatial Modeling and Analysis – member 2006-present
- Faculty Governance Executive Committee – member 2009-2011
- Faculty Governance Committee on Research – chair 2009-2011
- Faculty Governance Committee on Research – member 2007-2009
- Ad Hoc Honorary Degree Nomination Committee – chair 2007-2009
- Graduate Program Advisory Committee member 2008-2009
- Organized Betty Moore Chamberlaine Graduate Student Award 2009-2013
- Organized Ralph T. King Award to Outstanding Wildlife Student 2011-2012

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Professional Service

International Council for Game and Wildlife Conservation

- Deputy President, Applied Science Division Apr 2017-present
- Expert to the US Delegation Apr 2017-present

New York State Department of Environmental Conservation

- Science Advisor, NY Fish and Wildlife Management Advisory Board 2006-16, and 2018-present
- Hunter Education Program evaluation (interviewee) 2015

The Wildlife Society, member

- College/University Wildlife Education Working Group, member 2004-present
- Marcellus Shale Ad Hoc Working Group, member 2011-present
- GIS and Remote Sensing Working Group, member 2011-2014
- The Wildlife Society, NY State Chapter, Vice-President 2004-2009
- The Wildlife Society, NY State Chapter, Vice-President 2008-2010

Society for Conservation Biology, lifetime member

2006 - present

Ecological Society of America, lifetime member

2006 - present

Associate Editor, Journal of Applied Ecology

2012-2018

Ad-hoc reviewer:

Animal Behaviour, Conservation Biology, Biological Conservation, Diversity and Distributions, Ecography, Ecology, Ecological Applications, Ecological Modeling, Ecological Monographs, Ecosphere, Forest Ecology and Management, Journal of Animal Ecology, Journal of Applied Ecology, Journal of Animal Ecology, Journal of Wildlife Management, Landscape Ecology, Mammal Review, Oikos, Philosophical Transactions of the Royal Society, PLoS One, Wildlife Society Bulletin

Symposiums organized

- “Wolves and coyotes in the Northeast” – Northeast Natural History Conference, Syracuse, NY (2012), co-lead with D. Bogen

- “Animal Movements in Heterogeneous Landscapes” – US International Association of Landscape Ecologists, Madison, WI (2008), co-lead with E.H. Merrill

Technical workshops delivered

- “Likelihood and Bayesian analysis for ecologists” (5 days) – SUNY ESF, Syracuse, NY, J.M. Morales and J. Frair (co-organizers; 2012)
- “Geospatial skills workshop” (8 hours) – The Wildlife Society Annual Conference, Hawaii, H. Beyer and J. Frair (co-organizers; 2011)
- “Modern approaches to resource selection modeling” (4 hours) – US-International Association of Landscape Ecologists Annual Conference, Madison, WI, J.D. Forester and J. Frair (co-organizers; 2008)

Continuing Education

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- National Academies Summer Institute on Undergraduate Education in Science – University of Connecticut (4 days, 2016)
 - Spatial Capture-Recapture Modeling Workshop – Cornell University, NY (3 days, 2014)
 - Chemical Immobilization of Animals – Safe Capture International (2 days, 1994, 2012)
 - Sportsmen Education course – NY State Department of Environmental Conservation (10 hours, 2011)
 - Bayesian Population Analysis in WinBUGS – Patuxent Wildlife Research Center, MD (1 week, 2010)
 - Wildlife Applications of Bayesian Survival Analysis using WinBUGS – The Wildlife Society, Snowbird, UT (1 day, 2010)
 - Geographic and Spatial Data in the Management of Natural Resources – University of Montreal, Canada (3 days, 2010)
 - Bayesian and maximum likelihood approaches to data analysis – University of Glasgow, Scotland (1 week, 2008)
 - “R” workshop – SUNY-ESF (2 days, 2008)
 - No more P-values? Model based inference in the life sciences – SUNY-ESF (2 day, 2007)
 - Conservation genetics for wildlife biologists and managers – The Wildlife Society, Tuscon, AZ (1 day, 2007)
 - Institutional Social and Behavioral Research Certification – Syracuse University (2013)
 - Institutional Animal Care and Use Committee Certification – SUNY-ESF (2006, 2014)
 - Animal Care and Use I and II – University of Alberta, Edmonton, AB (2004, 2005)
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Awards and Distinctions

Exemplary Researcher Award – SUNY ESF Research Foundation	2019
Outstanding Academic Advisor Award – ESF Undergraduate Student Association	2019
Article among top 20 downloads in 2017-18 for African Journal of Ecology (lead author graduate student co-advised by J. Frair and S. Ryan)	2019
National Academies Education Fellow in Science	2016
Wings across the Americas, Research Collaboration Award – US Forest Service	2016
TWS Fellow – The Wildlife Society	2014
Distinguished Teacher Award – ESF Undergraduate Student Association	2011
Student Chapter Advisor of the Year Award – The Wildlife Society	2011
Wildlife Publication Award – The Wildlife Society (co-authored paper Beyer et al. (2010) <i>Phil Trans Roy Soc B</i> , 365:2245-2254)	2010
First-authored paper among the most-cited articles of the year in the Philosophical Transactions of the Royal Society	2010
First-authored paper identified as “Editor’s Choice” in the Journal of Applied Ecology¹	2008
William Wishart Post-Graduate Award – The Wildlife Society, Alberta Chapter	2005
Best Student Oral Presentation Award – The Wildlife Society, Alberta Chapter, Annual Conference	2003
Outstanding Graduate Student Award – University of Wisconsin, Stevens Point	1997
Graduate Student Council Award – College of Natural Resources, University of Wisconsin, Stevens Point	1997

¹ see <http://onlinelibrary.wiley.com/doi/10.1111/jpe.2008.45.issue-5/issuetoc>