JENNIFER R. B. MILLER

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EDUCATION

2015 **PhD, Ecology, Yale School of Forestry & Environmental Studies**, New Haven, CT
Title: *Examining predation risk for mitigating large carnivore attacks on livestock*

2007 **BA, Organismal Biology, Claremont McKenna College**, Claremont, CA

PROFESSIONAL EXPERIENCE

Postdoctoral Scholar Jan 2017-Present

Department of Environmental Science, Policy, and Management, University of California, Berkeley, CA.

- Develop and design 'risk assessment' software package and protocol to quantitatively assess patterns of human-wildlife conflict and assist decision-making for reducing incidents of carnivore attacks on people and livestock and ungulate raiding of agricultural crops.
- Research the socio-ecological drivers and spatiotemporal patterns of human-wildlife conflict between livestock owners and tigers and leopards in Madhya Pradesh, India using statewide financial compensation data.
- Quantitatively assess the effectiveness of non-lethal methods for mitigating human-wildlife conflict globally and develop toolkits of optimal strategies for stakeholders.
- Serve on graduate student committees and informally advise Masters and PhD students in South Africa, Mexico, Nepal, India and Romania on research about human-carnivore conflict.

Supervisor: Dr. Justin Brashares, Associate Professor.

Research Associate Jan 2017-Present

Lion Program, Panthera, New York, NY.

- Provide research and analytical consultation on wildlife conservation studies, including:
- Track funding from multilateral organizations and charitable foundations, conduct statistical analyses and edit scientific manuscript on budget deficit for lion conservation in African parks.
- Conduct statistical analyses and assist in writing scientific manuscript on models of co-management of protected areas in Africa.

Supervisor: Dr. Peter Lindsey, Policy Coordinator of Lion Program.

Postdoctoral Researcher May 2015-Dec 2016

Panthera, New York, NY in affiliation with University of Cape Town, Cape Town, South Africa and Cornell University, Ithaca, NY.

- Project #1: Researched lion effects on leopard spatial movement and temporal activity using camera trap data from 15 sites across South Africa in two-species conditional occupancy models.
- Project #2: Researched lion age determination and hunter aging accuracy to identify minimum age threshold for sustainable age-based trophy hunting of African lions.
- Applied scientific findings on lion aging to develop pragmatic guidelines for hunting and advised Zimbabwe wildlife authorities on sustainable hunting practices.
- Designed and produced educational materials on lion aging for professional hunters, researchers and managers, including training course, self-test, pocket field guides and website (www.AgingTheAfricanLion.org) in English and French.
- Built and coordinated partnerships with 20 research co-authors, nine African conservation NGOs, two government agencies and three African and international hunting associations.
- Attended CITES CoP17 to observe multilateral discussions about uplisting the African lion to Appendix I and advised 'non-detrimental' trophy import standards based on research findings.

Supervisors: Dr. Guy Balme, Director of Leopard Program, and Dr. Paul Funston, Director of Lion Program.

Doctoral Candidate Aug 2009-May 2015

Yale School of Forestry & Environmental Studies, New Haven, CT and Wildlife Institute of India, India in partnership with WWF-India and Madhya Pradesh Forest Department.

- Researched tiger and leopard attacks on livestock in Kanha Tiger Reserve, India and developed stakeholder tools for adapting management to reduce livelihood losses and retaliatory killing.
- Built spatial models using R and ArcGIS to examine spatial patterns and human perceptions of carnivore attack risk on livestock and produce hotspot maps and management recommendations.
- Managed all project administration, including: obtaining government research permission; hiring, training and supervising 5 field assistants in Hindi; creating budgets and overseeing finances
- Raised $153,000 in research grants and fellowships from U.S. National Science Foundation, Association for Zoos & Aquariums, Lewis and Clark, John Ball Zoo and others.
- Communicated research findings to scientific and non-technical audiences through writing popular articles and presenting at scientific conferences, management agencies, public seminars.

Adviser: Dr. Oswald Schmitz, Professor of Ecology.

Teaching Assistant Jan-May 2012; Sept-Dec 2010

Yale School of Forestry & Environmental Studies, New Haven, CT.

- Developed course content, syllabus and readings, managed course website, guest lectured and assisted students with assignments and principles of ecology and conservation for two semester-long Masters courses:
  - Conservation in Practice: An International Perspective, taught by Dr. Amy Vedder, Visiting McCluskey Fellow.
  - Landscape Ecology, taught by Dr. David Skelly, Professor of Ecology.

Research Assistant Jan-July 2009

Smithsonian National Museum of Natural History, Washington, D.C.

- Researched the movement morphology and systematics of squirrels by processing and analyzing micro-CT scanned images of squirrel wrists with Mimics 3D imaging software to compare bone structure of squirrels.
- Engaged with other Natural History staff through weekly reading groups and social events.
- Assisted paraplegic scientist with personal care and workplace logistics.

Supervisor: Dr. Richard Thorington, Curator of Mammals.

Fulbright Research Scholar Feb-Nov 2008

The Wildlife Institute of India, Dehradun, India.

- Assessed the population status of the threatened Western tragopan and the Himalayan monal and koklass pheasants in the Great Himalayan National Park by measuring population abundances with bird call counts and transect walks.
- Hired, trained and supervised 4 assistants during fieldwork involving camping in remote alpine locations.
- Represented U.S. as scientific ambassador while affiliating at government research institute, building research collaborations and presenting at Wildlife Institute of India Annual Conference.

Advisors: Dr. G.S. Rawat and Dr. K. Ramesh, Professors of Wildlife Science.

Policy Intern June-Dec 2007
The Wildlife Society, Bethesda, MD.

- Monitored legislation about wildlife conservation and management by tracking and evaluating legislation related to environmental conservation and agriculture.
- Attended congressional hearings about legislation and interviewed House, Senate and nonprofit policy staff about bill revisions and anticipated votes.
- Prepared background information on wildlife-related policies for use in official nonprofit organization coalition position comments.
- Wrote and edited articles on political actions for professional society members in the *Wildlife Policy News* and *The Wildlifer* newsletters.

Supervisor: Laura Bies, Director of Government Affairs.

Senior Thesis Researcher Sept 2006-May 2007
Joint Science Department of the Claremont Colleges, Claremont, CA.

- Researched effects of forest degradation on poison dart frog abundances in Costa Rica using transect surveys, Hayne Estimator and spatial analysis in ArcGIS.
- Wrote successful unsolicited proposal for $2,000 from Dean's Office for international travel.

Advisors: Dr. Donald McFarlane and Dr. Marian Preest, Professors of Ecology.

Wildlife Research Technician May-Aug 2006
Utah State University Department of Wildland Resources at Pinon Canyon Maneuver Site, Trinidad, CO.

- Net captured, radio-collared and monitored pronghorn antelope fawns with VHF biotelemetry and triangulation; conducted spotlight rabbit surveys and small rodent trapping.
- Studied theory of professional leadership for remote summer internship from Kravis Leadership Institute at Claremont McKenna College.

Supervisor: Renee Seidler, USU Master's student.

Research Assistant Sept-Dec 2005
Joint Science Department of the Claremont Colleges, Claremont, CA.

- Studied the impact of summer wildfires on the California gnatcatcher in Bonelli Regional Park, San Dimas, CA through surveying suitable habitat and conducting bird counts using call playback to estimate territory distribution and population size.

Advisor: Dr. Dan Guthrie, Professor of Ecology.

PROFESSIONAL LEADERSHIP & SERVICE

Leader and Member Aug 2016-Present
Panthera Conflict Working Group, Global.

- Established, led (2016) and participate in (2017 onwards) working group on human-wild cat conflict issues to enhance communication between Species Programs.
- Coordinated monthly calls between 15 international staff members, created and led group agenda.

Member June 2016-Present
African Lion Working Group (affiliated with the Cat Specialist Group and Conservation Breeding Specialist Group of the International Union for the Conservation of Nature (IUCN)/Species Survival Commission), Africa.

- Nominated by Panthera supervisor to join 90 African lion specialists in contributing scientific data and management guidelines to advising strategies for conserving free roaming lion populations in Africa.

Co-Founder and Co-Leader Feb 2014-Present
Network for Conserving Central India, Global.

- Worked with five academic colleagues to establish and now lead working group of academics, managers and conservation practitioners to synthesize science and identify common goals for conservation in central Indian landscape.
- Create and manage all communication platforms, including social media and Google Group email.
- Design, develop, maintain and create text and image content for group website.

Conference Co-Organizer Jan 2013-Present
Central Indian Landscape Symposium and *Kanha-Pench Landscape Symposium, India.*

- Work with five team members and multiple NGO partners (e.g. WWF-India, SRUJAN, Satpuda Foundation) to plan and execute bi-annual meeting with 60 researcher, manager and NGO participants from across India.
- Coordinate logistics and troubleshoot problems at event site during week-long symposia.
- Design, build, maintain and create text and image content for two conference websites, registration materials and all printed materials.

Career Mentor Sept 2014-Present
Women in Science at Yale and ELM Alumni Mentoring Program, New Haven, CT.

- Mentor Yale Masters students (female and male) and high school student (African American female from low-income background) on personal and professional goals.
- Provide detailed feedback on college essays, funding proposals and job applications.

Founder and Leader Apr-Aug 2011-2015
PhD Peer Mentoring Program, Yale School of Forestry & Environmental Studies, New Haven, CT.

- Established and led the first peer-mentoring program for PhD students to orient new students and facilitate relationships between students.
- Advocated for and secured $300 annual budget from Doctoral Program and reported activities and program growth to Dean of Research.

Student Representative Sept 2010-May 2011

- Elected by department peers to communicate and resolve student issues with the Yale University administration.

SCIENCE COMMUNICATION

Freelance Science Writer Feb 2009-Present

- Published 16 articles on environmental conservation topics in magazines, newspapers and blogs, including *Frontline Newspaper*, *Sanctuary Asia*, *Conservation India, Conservation Corridor, SAGE Magazine* and *Scientists Without Borders.*
- Interviewed high-profile leaders about their experiences in the conservation field, including senior government officers and researchers.

Science Website Designer and Manager (*pro-bono*) Mar 2009-Present

- Design layout, write content and maintain professional websites using Weebly platform for scientific institutes, working groups, lab groups, conferences and journals.

Editorial Intern Nov 2014-Apr 2015
Cornell Lab of Ornithology, Ithaca, NY.

- Wrote articles about bird conservation, recreation and research and investigated story ideas and copyedited feature articles for *Living Bird* magazine, *All About Birds* and *Citizen Science* blogs

- Attended weekly Communications Team meetings to plan articles and strategic content to build readership and membership.

Founder and Executive Editor Nov 2012-Dec 2014
Bulletin of the Wildlife Institute of India, Dehradun, Uttarakhand, India.

- Established the first campus student-run online publication to strengthen Indian students' scientific writing skills and increase familiarity with peer-review process.
- Trained and supervised editorial board and student journal and blog article submissions and editing process.

Staff Writer Aug 2012-May 2013
Yale Environmental Review, Yale School of Forestry & Environmental Studies, New Haven, CT.

- Wrote six summaries of peer-reviewed scientific articles on environmental topics for non-technical audience.

HONORS AND FELLOWSHIPS

2016	Best Talk Award for Science Applied to Responsible Wildlife Management at South African Wildlife Management Association Symposium ($70)
2015	Herbert Bormann Prize for Best Scientific Paper at the Yale School of Forestry ($500)
2012	American Institute for Indian Studies Junior Research Fellowship ($12,600)
2010	U.S. State Department Critical Language Scholarship to study Hindi in Jaipur, Rajasthan
2008	National Science Foundation Graduate Student Research Fellowship
2008	U.S. Fulbright Student Research Scholarship to India

GRANTS

2012-2016	6 conference travel fellowships from Cornell, Yale, Ecol Soc of Amer & more ($4,750)
2012	Lewis and Clark Exploration Fund ($3,000); John Ball Zoo Society Wildlife Conservation Fund ($2,400); U.S. State Department Critical Language Scholarship Alumni Grant ($500)
2011-2012	Yale Tropical Resources Institute Research Fellowship ($7,720)
2011	Association of Zoos & Aquariums Conservation Endowment ($23,592)
2010	Yale South Asian Studies Council Summer Research Award ($4,000)
2009-2010	Yale Institute for Biospheric Studies Preliminary Research Grants ($9,000)

PROFESSIONAL ACTIVITIES

Member of graduate student committees (PhD and Masters):

1. Andrea Gagyi-Palffy, PhD at Central European University, Hungry: Spatial risk mapping of wolf attacks on livestock in Apuseni Natural Park, Romania
2. Gopal Khanal, Masters at National Center for Biological Studies, India; Topic: Spatial risk mapping of snow leopard livestock depredation in Nepal
3. Gabi Leighton, Masters at University of Cape Town, South Africa; Topic: Spatial patterns of rodenticide poisoning risk to caracal in Cape Town, South Africa
4. Coral Mascote, Masters at Universidad Michoacana de San Nicolas de Hidalgo, Mexico; Topic: Spatial patterns of conflict between black bear and humans in the Sierra de Arteaga, Mexico

Invited reviewer for grants: National Science Foundation – Geography and Spatial Sciences Program; Conservation Leadership Programme

Peer-review for journals (selected): *Biological Conservation; Biodiversity & Conservation; Environment, Development and Sustainability; Human Dimensions of Wildlife; International Journal of Biodiversity and Conservation; Journal of Wildlife Management; Mammalia; Oikos; PLOS One*

Society memberships: Ecological Society for America; Society for Conservation Biology; The Wildlife Society

SKILLS

Field research: Carnivore and prey sign surveys, transect and spotlight surveys, bird playback surveys, bird call counts, vegetation structure surveys, VHF biotelemetry and triangulation, net-catching and radio-collaring deer fawns, necropsy, camera trapping, mark-recapture

Software: ArcGIS, R Statistical Software, ERDAS IMAGINE, ENVI, Mimics 3D Image Processing, EndNote, Mendeley Desktop, Adobe Photoshop, Microsoft Office (Word, Excel, PowerPoint)

Social media and website development: Weebly, QuestBase, Facebook

Languages: Hindi (intermediate), Spanish (beginning)

Personal: Bird watching, meditation and yoga, acrylic painting, science popular writing

SCIENTIFIC PUBLICATIONS

13. Balme, G., R. Pitman, H. Robinson, **J. R. B. Miller**, P. Funston, L. Hunter. In review. Population-level effects of intraguild competition on lions and leopards. Oikos.

12. Begg, C., **J. R. B. Miller**, and K. Begg. In revision. Evidence of sustainable sport hunting using age restrictions in the African lion. Journal of Applied Ecology.

11. Balme, G. A., **J. R. B. Miller**, R. T. Pitman, and L. T. B. Hunter. In press. To hoist or not to hoist: causes and consequences of prey caching by leopards. Journal of Animal Ecology.

10. **Miller, J. R. B.**, K. J. Stoner, M. R. Cejtin, T. K. Meyer, A. D. Middleton, and O. J. Schmitz. 2016. Tools for human-carnivore coexistence: a quantitative assessment of techniques for reducing large carnivore depredation of livestock. Widllife Society Bulletin 40:806–815.

9. **Miller, J. R. B.**, Y. V. Jhala, and O. J. Schmitz. 2016. Human perceptions mirror realities of carnivore attack risk for livestock: implications of mitigating human-carnivore conflict. PLOS ONE 11:e0162685.

8. **Miller, J. R. B.**, P. J. Funston, G. Balme, P.A. Lindsey, A. J. Loveridge, M. S. Becker, C. Begg, H. Brink, S. Dolrenry, J. E. Hunt, I. Jansson, D. W. MacDonald, R. L. Mandisodza-Chikerema, A. Oriol Cotterill, C. Packer, D. Rosengren, K. Stratford, M. Trinkel, P. A. White, C. Winterbach, and H. E. K. Winterbach. 2016. Aging traits and sustainable trophy hunting of African lions. Biological Conservation 201:160-168. *Won Best Talk Award for Science Applied to Wildlife Management.

7. **Miller, J. R. B.**, Y. V. Jhala, and J. Jena. 2016. Livestock losses and hotspots of attack from tigers and leopards in Kanha Tiger Reserve, central India. Regional Environmental Change 16:17-29. *Special Issue on Central Indian Highlands.

6. **Miller, J. R. B.** 2015. Mapping attack hotspots to mitigate human-carnivore conflict: Approaches and applications of spatial predation risk modeling. Biodiveristy and Conservation 24(12):2887-2911. *Won Herbert Bormann Prize for Best Scientific Paper at Yale School of Forestry & Enviro Studies.

5. **Miller, J. R. B.**, Y. V. Jhala, J. Jyoti, and O. J. Schmitz. 2015. Spatial risk model predictions of tiger attacks on livestock: implications of spatial grain for modeling and mitigating human-carnivore conflict. Ecology and Evolution 5(6):1354-1367.

4. **Miller, J. R. B.**, J. M. Ament, and O. J. Schmitz. 2013. Fear on the move: predator hunting mode predicts variation in prey mortality and plasticity in prey spatial response. Journal of Animal Ecology 83(1):214-222.

3. **Miller, J. R. B.** 2010. Survey of Western Tragopan, Koklass Pheasant, and Himalayan Monal populations in the Great Himalayan National Park, Himachal Pradesh, India. Indian Birds 6(3):60-65.

2. **Miller, J. R. B.** 2009. New vocalizations by the Koklass pheasant *Pucrasia macrolopha*. International Journal of Galliforms Conservation 1:56-57.

1. **Miller, J. R. B.** and D. A. McFarlane. 2008. A preliminary investigation into Hayne Estimates of poison dart frog (Anura: Dendrobatidae) densities in recovering tropical forest habitats, southwest Costa Rica. Herpetological Conservation and Biology 3(2):298-294.

BOOK CHAPTERS

1. **Miller, J. R. B.** and O. J. Schmitz. 2012. Food Webs and Sustainability. In R. K. Craig, J. C. Nagle, B. Pardy, O. Schmitz, & W. Smith (Eds.), Berkshire Encyclopedia of Sustainability: Ecosystem Management and Sustainability, Vol. 5. Great Barrington, Massachusetts: Berkshire Publishing Group LLC.

TALKS AND PRESENTATIONS (SELECTED)

September 2016. Aging traits and sustainable lion trophy hunting. Talk at the South African Wildlife Management Association, Tzeen, South Africa. *Won Best Talk award

April 2016. International conservation of big cats: Minimizing human-wildlife conflict. Invited keynote talk for the Massachusetts College of Liberal Arts Green Living Seminar class, North Adams, MA.

January 2016. Cecil's Legacy: Aging traits and sustainable lion trophy hunting. Talk at the Cornell Department of Natural Resources Annual Symposium, Ithaca, NY.

August 2015. Predation risk as a guide for mitigating large carnivore attacks on livestock. Invited speaker for Department of Biological Sciences Weekly Seminar Series, Cape Town, South Africa.

July 2014. Scaling down carnivore conflict: Effects of model spatial grain and structure on predations of carnivore attacks on livestock. Talk at the North American Congress for Conservation Biology, Missoula, MT.

June 2014. Bengali beasts: People, parks and predation: mitigating livestock tiger conflicts though risk mapping. Invited seminar talk at Connecticut's Beardsley Zoo, Bridgeport, CT.

POPULAR MEDIA ARTICLES (SELECTED)

Miller, J. Aug 2016. Animal selfies as research. *Field Notes* (Panthera blog).

Miller, J. Aug 2016. How to age a lion. *Field Notes* (Panthera blog).

Miller, J. Nov 2015. Tiger vs. cow: risk models help beat the odds. *Conservation India.*

Miller, J. May 2015. Splitting feathers: One backyard hummingbird species becomes two. *Living Bird* (Cornell Lab of Ornithology magazine).

Miller, J. May 2015. Compensation for coexistence - Lessons from Kanha. *Conservation India.*

Miller, J. Mar 2015. Mapping tiger attack hotspots to reduce conflict. *Conservation Corridor.*

Miller, J. Mar 2015. Tools for saving tigers. *Yale F&ES blog.*

Miller, J. Mar 2015. Annual changes in hummingbird migration revealed by birders' sightings. *All About Birds* (Cornell Lab of Ornithology blog).

REFERENCES

Current Supervisor
Dr. Justin Brashares
Associate Professor
Department of Environmental Science, Policy, and Management
University of California, Berkeley
130 Mulford Hall #3114
Berkeley, CA 94720
Work phone: 510-643-6080
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Previous Supervisors (2015-2016)
Dr. Guy Balme
Program Director, Leopard Program
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New York, NY 10018
Based in Cape Town, South Africa
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PhD Adviser (2009-2015)
Dr. Oswald Schmitz
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