

## L. SCOTT MILLS

Associate Vice President of Research for Global Change and Sustainability  
Professor of Wildlife Biology  
University of Montana  
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(Also remain as Adjunct Professor at North Carolina State University)

### EDUCATION:

July 1993      **Ph.D., Biology**  
University of California, Santa Cruz, CA  
Advisor: Michael Soulé (began at Univ. Michigan, moved to UCSC w/ advisor)

July 1987      **M.S., Wildlife Ecology**  
Utah State University, Logan, UT  
Advisor: Fred Knowlton

May 1983      **B.S., Zoology**  
North Carolina State University, Raleigh, NC  
(one-year National Student Exchange to Univ. Idaho 1980-81).

### PREVIOUS FACULTY POSITIONS:

July 2013 – Aug. 2016    **Professor and Cluster Coordinator, Global Environmental Change and Human Well-Being, Chancellor's Faculty Excellence Program**  
North Carolina State University, Raleigh, NC

Jun. 1995 – July 2013    **Professor** (2004-2013); **Associate Professor** (1999 – 2004);  
**Assistant Professor** (1995 – 1999)  
Wildlife Biology Program, College of Forestry and Conservation  
The University of Montana, Missoula, MT

### SUBSTANTIAL TEACHING EXPERIENCE:

- “Applied Wildlife Population Ecology” (graduate course with students from 5-7 countries); University of Porto, Portugal. April 2019 AND May 2015.
- “Applied Population Ecology” course (graduate students in the Bren School of the Environment), University of California, Santa Barbara. May 2016
- “Applied Wildlife Population Ecology” (graduate course with international students from 5 countries), BOKU University, Vienna, Austria. June 2013
- Many workshops on variety of topics during sabbatical, Ugyen Wangchuk Institute for Conservation and Environ., Bhutan. Jan. – June 2010 (See Mills et al. 2013 book, below)
- North Carolina State University (2013-2016) classes include:
  - Wildlife Science (Senior level; taught 2 semesters) ; Advanced Population Ecology (Advanced graduate students; taught 2 semester)
- University of Montana (1995-2013) classes include:
  - Conservation of Wildlife Populations* (seniors/graduate students; taught approx. 20 times); *General Ecology* (Sophomores/Juniors; taught approx. 10 times); *Advanced Applied Population Ecology* (upper level graduate students; taught approx. 10 times); *Frontiers of Conservation Genetics* (upper level grad students; approx. 5 times); *Foundations of Wildlife Biology* (sophomores); various readings/journal clubs/etc.

- Field Conservation Biology [1-month; 4 semester credits], Mountain Lake Biological Station, University of Virginia. Summers 2002 *and* 2003.
- Sabbatical, Virginia Tech Univ., Fisheries & Wildlife Dept., Blacksburg, VA. July 2002 – Aug. 2003.
- Visiting Assistant Professor, University of Idaho, Dept. of Fish and Wildlife Sciences, Moscow, ID. Aug. 1993 – May 1995.

## **AWARDS/COMMENDATIONS**

### ***Invited Advisory Board Membership***

- Board of Trustees of the Nature Conservancy of Montana (2020 - )
- Advisory Board, Bhutan Foundation (Washington, D.C.) (2015 - )
- Advisory Board, Bhutan Ecological Society (Thimphu, Bhutan) (2011- )
- Member of IUCN Species Survival Commission and Lagomorph Specialist Group (2013 -).

### ***National/International***

- Competitive appointment to Fulbright Specialist Roster (US Dept of State Bureau of Educational and Cultural Affairs and World Learning); 8/20-8/23 term.
- Invited Member of Expert Panel to Evaluate Conservation Status of Wolves in Norway (Oslo, 2020)
- Invited member, Indianapolis Prize Nominating Committee (2019)
- Invited Contributing Author, Intergovernmental Panel on Climate Change (IPCC) Special Report on Climate Change and Oceans and the Cryosphere (2019); <https://www.ipcc.ch/srocc/home/>
- Editorial Board, Proceedings of the Bhutan Ecological Society (2014 - ).
- Expert Panel to evaluate Favorable Conservation Status of Scandinavian Wolves (2015).
- Invited expert peer reviewers of USFWS proposal to delist gray wolves in Wyoming from ESA (2011).
- John Simon Guggenheim Fellow (2009).
- Scientific Declaration (Invited) to U.S. District Court on genetic issues associated with delisting Northern Rockies gray wolves (2008).
- Member of Western Governor’s Association “*Climate Change Working Group*” (2008).
- Contributor to North America section, 2007 Intergovernmental Panel on Climate Change Report.
- North American Section Board of Governors, Society for Conservation Biology (2002-04).
- Invited Testimony to U.S. Congress (House Committee on Natural Resources) regarding ethics in conservation science (National Lynx Survey). (March 6, 2002).
- NSF Early CAREER Award (1998).

### ***State and University-Level***

- Elected member, University of Montana Faculty Senate, 2010-2013 term.
- One of 3 Professors Invited to speak in the first Provost’s Distinguished Lecturer Series (2009 November). Title of talk: “Wildlife Biology in a Changing World”.
- Bob Watts Communication Award from the Montana Chapter of The Wildlife Society for my textbook “Conservation of Wildlife Populations.” (Feb. 2009).
- Keynote Speaker for Academic Convocation, University of Montana. (2006 August).
- Keynote speaker for University of Montana Undergraduate Research Conference (2006 April).
- Commencement Speaker, College of Forestry and Conservation (2004 May).
- School of Forestry Montana Druids Faculty Service Award. (Spring 2000).
- Most Inspirational Faculty Award (Univ. of Montana Silent Sentinel student society) (Spring 1998).

## **STUDENT ADVISING**

### **UNDERGRADUATE**

I have mentored >150 undergraduate field and lab assistants (and >35 undergraduate Honors or Senior Thesis projects). >15 of these students received University or external research awards exceeding \$75,000, several with publications. My "REAP" program (developed in my NSF CAREER Grant in 2000) has continued to serve as a framework for mentoring these students.

### **GRADUATE STUDENT ADVISING**

#### **Students Completing Ph.D. Degrees to Date**

Alex Kumar, PhD. "Biotic and abiotic drivers of acyclic snowshoe hare population dynamics in a spatiotemporally complex system" (Spring 2020)

Marketa Zimova, PhD. "Evolutionary ecology of color molt phenology and camouflage mismatch" (2019)

Julie Betsch, PhD. "Ecology, epidemiology, and evolutionary genetics of canine distemper virus spillover in African lions" (2018).

Tshering Tempa, PhD. "The ecology of montane Bengal tigers (*Panthera tigris tigris*) in the Himalayan Kingdom of Bhutan". (2017)

Tammy Mildenstein: "Conservation of endangered flying foxes in the Philippines: effects of anthropogenic disturbance and methods for monitoring" (2012).

Ellen Cheng: "Climate Change, gene flow, and the legendary synchrony of snowshoe hares" (2010).

Heather Johnson: "Escaping the extinction vortex: Identifying factors affecting population performance and recovery in endangered Sierra Nevada bighorn sheep" (2010).

Sue Cox Griffin: "Demography and ecology of a declining endemic: the Olympic marmot" (2007; co-advised with Mark Taper).

John Citta: "Metapopulation ecology using mountain bluebirds as a model system" (2005; co-advised with Mark Lindberg).

Paul Griffin: "Source-sink dynamics of snowshoe hares in a fragmented landscape" (2003).

Michael Schwartz: "The influence of gene flow and landscape location on genetic variation in two threatened carnivores: the Canada lynx and San Joaquin kit fox" (2002).

David Tallmon: "Genetic, demographic, and ecological effects of habitat fragmentation" (2001; co-advised with Fred Allendorf).

#### **Students Completing M.S. Degrees to Date**

Tashi Dhendup, M.S. "Tiger monitoring in Bhutan using non-invasive genetic tools" (2019)

Brandon Davis, M.S. "Weasely Recognized or Stoatally Camouflaged: Quantifying Coat Color of a Cryptic Predator" (2019)

Alex Kumar, M.S. "Effects of a Dynamic Forest Structure on Vital Rates, Behavior and the Seasonal Molt of the Snowshoe Hare" (2015).

Marketa Zimova, M.S. "Camouflage mismatch in seasonal coat color due to decreased snow duration: will snowshoe hares keep up with climate change?" (2013).

Jesse Newby, MS: "Puma dispersal ecology in the central Rocky Mountains" (2011).

Tempa Tshering, MS (non-thesis): "Teaching Wildlife Biology in Bhutan" (2008).

Carly Walker (Lewis): "Landscape structure effects on snowshoe hares in fragmented forests" (2005)

Julia Witzcuk: "Predation by invasive coyotes on declining endemic Olympic marmots" (2007).

Jenny Woolf: "Effects of thinning and prescribed burning on birds and small mammals" (2003).

Tammy Mildenstein: "Habitat selection of large flying foxes using radiotelemetry: targeting conservation efforts in Subic Bay Philippines" (2002).

Reesa Yale: "Do highways influence connectivity in small mammals?" (2002).

Kevin Lair: "The effects of forest fragmentation and forest edge on Columbian Mouse and Southern Red-Backed vole demography" (2001).

John Citta: "An evaluation of demographic sensitivity analysis models" (1998).

### **Current Graduate Students**

Jennifer Feltner, PhD

Tshewang Wangchuk, PhD

Hannah Walker, PhD

Lindsey Barnard, M.S.

### **Post-Docs Supported**

Diana Lafferty (2015 - 2017); Eugenia Bragina (2015- 2017); Ellen Cheng (2013 – 2014); Rebecca Taylor (2009-2011); Richard Fredrickson (2007-2010); Cindy Hartway (2006-2010); Matt Kaufmann (2004-2006); Karen Hodges (2000-2003)

### **PUBLICATIONS (reverse chronological order)**

**SUMMARY: As of May 2020, my H-Index is 50 and my work has been cited >12,000 times.**

**Twenty-seven publications (including my applied population ecology textbook) have been cited >100 times, and two >1,000 times. Eight journal articles have been featured as "Cover Articles", and 3 recommended by "F1000Prime". ORCID ID: <https://orcid.org/0000-0001-8771-509X>**

### **BOOKS**

- 1) Mills, L. S. Conservation of Wildlife Populations: Demography, Genetics, and Management. Wiley / Blackwell Press, **2013 (2<sup>nd</sup> Edition)** 2007 (1<sup>st</sup> edition); (used in >150 classrooms worldwide to date).
- 2) Mills, L. S., T. Tshering, and E. Cheng. editors. 2013. Wildlife research techniques in rugged mountainous Asian landscapes. Ugyen Wangchuck Institute for Conservation and Environment, Bhutan. ISBN: 978-99937-678-9-6.
- 3) Foresman, K. R., L. S. Mills, and Phurba. 2010. Procedures for Implementing Small Mammal Inventories in Bhutan. Publication of Ugyen Wangchuck Institute for Conservation and the Environment, Bhutan.

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

- 4) Zimova, M., S. T. Giery, S. Newey, J. J. Nowak, M. Spencer, L. S. Mills. 2020. Lack of phenological shift leads to increased camouflage mismatch in mountain hares. Proceedings of the Royal Society B: Biological Sciences, vol. 287. DOI: <https://doi.org/10.1098/rspb.2020.1786>
- 5) Weckworth, J. K., B. W. Davis, M. Roelke-Parker, R. P. Wilkes, C. Packer, E. Eblate, M. Schwartz, L. S. Mills,. 2020. Identifying candidate genetic markers of CDV cross-species pathogenicity in African lions. Pathogens 9(11). <https://doi.org/10.3390/pathogens9110872>

- 6) Ferreira, M. S., M. R. Jones, C. M. Callahan, L. Farelo, Z. Tolesa, F. Suchentrunk, P Boursot, L. S. Mills, P. C. Alves, J.M. Good, J.Melo-Ferreira. 2020. The legacy of recurrent introgression during the radiation of hares. *Systematic Biology*. <https://doi.org/10.1101/2020.06.19.160283>
- 7) Kumar, A.V., M. Zimova, J.R. Sparks, and L. S. Mills. 2020. Snow-mediated plasticity in phenology does not prevent camouflage mismatch. *Oecologia*. DOI: <https://doi.org/10.1007/s00442-020-04680-2>
- 8) Weckworth, J. K., B. W. Davis, E. Dubovi, N. Fountain-Jones, C. Packer, S. Cleaveland, M. E. Craft, E. Eblate, M. Schwartz, L. S. Mills, M. Roelke-Parker. 2020. Cross-species transmission and evolutionary dynamics of canine distemper virus during a spillover in African lions of Serengeti National Park. *Molecular Ecology* (**Featured as News & Views perspective**). DOI: [10.1111/mec.15449](https://doi.org/10.1111/mec.15449)
- 9) Zimova, M., L. Barnard, B. M. Davis, A. V. Kumar, D. J. R. Lafferty, and L. S. Mills. 2020. Using remote cameras to measure seasonal molt phenology. *Ecosphere*. 11(4):e03084. [10.1002/ecs2.3084](https://doi.org/10.1002/ecs2.3084).
- 10) Jones, M.R., L. S. Mills, J. D. Jensen, J. M. Good. 2020. Convergent evolution of seasonal camouflage in response to reduced snow cover across the snowshoe hare range. *Evolution*. <https://doi.org/10.1111/EVO.13976>
- 11) Jones, M.R., L. S. Mills, J. D. Jensen, J. M. Good. 2020. The origin and spread of locally adaptive seasonal camouflage in snowshoe hares. *American Naturalist* 196:316-332. DOI: <https://doi.org/10.1086/710022>
- 12) Ferreira, M. S., P. C. Alves, C. M. Callahan, I. Giska, L. Farelo, J. Hannes, L. S. Mills, K. Hacklander, J. M. Good, J. Melo-Ferreira. 2020. Transcriptomic regulation of seasonal coat color change in hares. *Ecology and Evolution* 10:1180-1192. DOI: [10.1002/ece3.5956](https://doi.org/10.1002/ece3.5956) (**\*COVER ARTICLE\***)
- 13) Gigliotti, L.C., N.D. Berg, R. Boonstra, S.M. Cleveland, D.R. Diefenbach, E.M. Gese, J.S. Ivan, K. Kielland, C.J. Krebs, A.V. Kumar, L.S. Mills, J.N. Pauli, H.B. Underwood, E.C. Wilson, M.J. Sheriff. 2020. Latitudinal variation in snowshoe hare (*Lepus americanus*) body mass: A test of Bergmann's Rule. *Canadian Journal of Zoology* 98:88-95. <https://doi.org/10.1139/cjz-2019-0184>
- 14) Zimova, M., A. P. K. Sirén, J. Nowak, A. Bryan, J. S. Ivan, T. L. Morelli, S. L. Suhrer, J. Whittington, and L. S. Mills. 2020. Local climate determines camouflage mismatch in snowshoe hares. *Global Ecology and Biogeography*. 29:503-515; DOI: [10.1111/geb.13049](https://doi.org/10.1111/geb.13049)
- 15) Lafferty, D. J. R., M. Zimova, L. Clontz, K. Hacklander, and L. S. Mills. 2019. Noninvasive measures of physiological stress are confounded by exposure. *Scientific Reports* 9, 19170. doi:10.1038/s41598-019-55715-5 (Dec 2019)
- 16) Bragina, E.V., R. Kays, A. Hody, C.E. Moorman, C.S. DePerno, and L. S. Mills. 2019. White-tailed deer and coyote colonization: a response to Kilgo et al. (2019). *Journal of Wildlife Management* 83:1641-1643. (Oct. 2019) DOI: [10.1002/jwmg.21651](https://doi.org/10.1002/jwmg.21651)
- 17) Tempa, T, M. Hebblewhite, J. F. Goldberg, N Norbu, T Wangchuk, W Xiao, and L. S. Mills. 2019. The spatial distribution and population density of tigers in mountainous terrain of Bhutan. *Biological Conservation*. 238:1-9. <https://doi.org/10.1016/j.biocon.2019.07.037> (October 2019)
- 18) Davis, B. M., A. V. Kumar, and L. S. Mills. 2019. A camouflage conundrum: unexpected differences in winter coat color between sympatric species. *Ecosphere*. 10:1-6. (March 2019)
- 19) Bragina, E. V., R. Kays, A. W. Hody, C. E. Moorman, C. S. Deperno, and L. S. Mills. 2019. Effects on white-tailed deer following eastern coyote colonization. *Journal of Wildlife Management*. 83:916-924. DOI:10.1002/jwmg.21651 (March 2019)

*\*Most downloaded 2019 publication of The Wildlife Society\**

*\* F1000 Prime Recommendation \**

- 20) Monterroso, P., R. Godinho, T. Oliveira, P. Ferreras, M.J. Kelly, D. Morin, L. Waits, P. C. Alves, L. S. Mills. 2018. Feeding ecological knowledge: the underutilized power of faecal DNA approaches for carnivore diet analysis. *Mammal Review* 49:97-112. doi: 10.1111/mam.12144
- 21) Mills, L. S., E. V. Bragina, A.V. Kumar, M. Zimova, D.J. R. Lafferty, J. Feltner, B M. Davis, K Hackländer, P C. Alves, J. M. Good, J Melo-Ferreira, A Dietz, A V. Abramov, N Lopatina, K Fay. 2018. Winter color polymorphisms identify global hot spots for evolutionary rescue from climate change. *Science* 359:1033-1036. DOI: 10.1126/science.aan8097  
*\* Altmetric score of 283, putting it in the top 1% for all publications of similar age, and top 10% of all publications in Science of similar age. \**  
*\* F1000 Prime Recommendation \**
- 22) Jones, M.R., L.S. Mills, P. C. Alves, C. M. Callahan, J. M. Alves, D. J. R. Lafferty, F. M. Jiggins, J. D. Jensen, J. Melo-Ferreira, J. M. Good. 2018. Adaptive introgression underlies polymorphic seasonal camouflage in snowshoe hares. *Science*. 360: 1355–1358. DOI: 10.1126/science.aar5273  
*\* Altmetric score of 190, putting it in the top 2% for all publications of similar age, and top 15% of all publications in Science of similar age. \**
- 23) Zimova, M., K Hackländer, J. M. Good, J. Melo-Ferreira, P. C. Alves, and L.S. Mills. 2018. Function and underlying mechanisms of seasonal colour moulting in mammals and birds: What keeps them changing in a warming world? *Biological Reviews* 93:1478-1498. (**\*COVER ARTICLE\***). DOI:10.1111/brv.12405
- 24) Waples, R. S., R. Kays, R. J. Fredrickson, K. Pacifici, and L. S. Mills. 2018. Is the red wolf a listable unit under the U.S. Endangered Species Act? *Journal of Heredity* 109:585-597.
- 25) Kumar, A. V., J. R. Sparks, L. S. Mills. 2017. Short-term response of snowshoe hares to western larch restoration and seasonal needle drop. *Restoration Ecology* 26:156-164. doi: 10.1111/rec.12533
- 26) Lafferty, D.J.R., A.V. Kumar, S. Whitcher, K. Hackländer, and L. S. Mills. 2017. Within-sample variation in snowshoe hare fecal glucocorticoid metabolite measurements. *Conservation Physiology* 5:1-7. doi:10.1093/conphys/cox068
- 27) Cheng, E., K. E. Hodges, R. Sollmann, and L. S. Mills. 2017 Genetic sampling for estimating density of common species. *Ecology and Evolution*. 7:6210–6219 [DOI: 10.1002/ece3.3137]
- 28) Ferreira, M. S., P. C. Alves, C. M. Callahan, J. P. Marques, L. S. Mills, J. M. Good, J. Melo-Ferreira. 2017. The transcriptional landscape of seasonal coat colour moult in the snowshoe hare. *Molecular Ecology*. 26:4173-4185. <https://doi.org/10.1111/mec.14177>
- 29) Mills, L. S. 2017. Some matchmaking advice when translocated immigrants are a population's last hope. *Animal Conservation* (invited commentary) 20:12-13. doi: 10.1111/acv.12333
- 30) Monterroso, P., G. Garrote, A. Serronha, E. Santos, M. Delibes-Mateos, J Abrantes, R Pérez de Ayala, F Silvestre, J Carvalho, I Vasco, A Lopes, E Maio, M J. Magalhães, L. S Mills, P J. Esteves, Miguel Á Simón & P C. Alves. 2016. Disease-mediated bottom-up regulation: An emergent virus affects a keystone prey, and alters the dynamics of trophic webs. *Scientific Reports*. DOI:10.1038/srep36072.
- 31) Horne, J. S., J. J. Hervert, S. P. Woodroff, and L. S. Mills. 2016. Evaluating the benefit of captive breeding and reintroductions to endangered Sonoran pronghorn. *Biological Conservation* 196:133-146.
- 32) Zimova, L. S., L. S. Mills, and J. J. Nowak. 2016. High Fitness Costs of Climate Change Induced Camouflage Mismatch. *Ecology Letters* 19:299-307. doi: 10.1111/ele.12568. **\*Cover Article;** (Multiple media interviews, Jan. 2016)\*
- 33) Witczuk, J., S. Pagacz, J. Gliwicz, and L. S. Mills. 2015. Niche overlap between sympatric coyotes and bobcats in highland zones of Olympic Mountains, Washington. *Journal of Zoology* 269:176-183.

- 34) Cheng, E., K. E. Hodges, and L. S. Mills. 2015. Impacts of fire on snowshoe hares in Glacier National Park, Montana. *Fire Ecology* 11:119-136.
- 35) Goldberg J. F., T. Tempa, N. Norbu, M. Hebblewhite, L. S. Mills, T. Wangchuk, and P. Lukacs. 2015. Examining temporal scale and model choice with spatial capture-recapture models in the Common Leopard. *PloS One* | DOI:10.1371/journal.pone.0140757.
- 36) Melo-Ferreira, J., F. A. Seixas, E. Cheng, L. S. Mills, and P. C. Alves. 2014. The hidden history of the snowshoe hare, *Lepus americanus*: extensive mitochondrial DNA introgression inferred from multilocus genetic variation. *Molecular Ecology* 23:4617-4630.
- 37) Hodges, K., J. Cunningham, and L. S. Mills. 2014. Avoiding and escaping predators: movement tortuosity of snowshoe hares in risky habitats. *Ecoscience*. 21:97-103. **\*Cover Article\***
- 38) Cheng, E., K. E. Hodges, J. Melo-Ferreira, P. C. Alves, and L. S. Mills. 2014. Conservation implications of the evolutionary history and genetic diversity hotspots of the snowshoe hare. *Molecular Ecology* 23:2929-2942.
- 39) Zimova, M., L. S. Mills, P. M. Lukacs, and M. S. Mitchell. 2014. Snowshoe hares display limited phenotypic plasticity to mismatch in seasonal camouflage. *Proceedings of the Royal Society of London, Series B*. 281:20140029. **\*Cover Article\***
- 40) Mills, L. S., M. Zimova, J. Oyler, S. Running, J. Abatzoglou, and P. Lukacs. 2013. Camouflage mismatch in seasonal coat color due to decreased snow duration. *Proceedings of the National Academy of Sciences* 110:7360-7365. **\*Cover Article\*** [widely covered by media; Also: "Faculty 1000" Recommendation].
- 41) Taylor, R. L., J. D. Tack, D. E. Naugle, and L. S. Mills. 2013. Combined effects of energy development and disease on greater sage-grouse. *PLoSone* 8:e71256: 1-10.
- 42) Witczuk, J., S. Pagacz, L. S. Mills. 2013. Disproportionate predation on endemic marmots by invasive coyotes. *Journal of Mammalogy*. 94:702-713.
- 43) Newby, J. R., L. S. Mills, T. K. Ruth, D. H. Pletscher, M. S. Mitchell, H. B. Quigly, K. M. Murphy, and R. DeSimone. 2013. Human-caused mortality influences spatial population dynamics: pumas in landscapes with varying mortality risks. *Biological Conservation*. 159:230-239.
- 44) Tempa, T., M. Hebblewhite, L. S. Mills, T. Wangchuk, N. Norbu, T. Wangchuk, T. Nidup, P. Dendup, D. Wangchuk, Y. Wangdi, and T. Dorji. 2013. Royal Manas National Park, Bhutan: a hot spot for wild felids. *Oryx* 47:207-210.
- 45) Hartway, C. and L. S. Mills. 2012. A meta-analysis assessing the effects of common management actions on the nest success of North American birds. *Conservation Biology* 26:657-666.
- 46) Taylor, R. L., B. L. Walker, D. E. Naugle, and L. S. Mills. 2012. Managing multiple vital rates to maximize greater sage-grouse population growth. *Journal of Wildlife Management* 76:336-347.
- 47) Johnson, H. E., L. S. Mills, J. D. Wehausen, T. R. Stephenson, and G. Luikart. 2011. Translating effects of inbreeding depression on component vital rates to overall population growth in endangered bighorn sheep. *Conservation Biology* 25:1240-1249.
- 48) Lewis, C. W., Hodges, K. E., and L. S. Mills. 2011. Influence of stand and landscape features on snowshoe hare densities in fragmented forests. *Journal of Mammalogy*. 92:561-567.
- 49) Hebblewhite, M., M. Musiani, and L. S. Mills. 2010. Restoration of gene flow among reintroduced Northern Rockies wolf populations. *Molecular Ecology* 19:4383-4385.
- 50) Pierson, J. C., L. S. Mills, and D. P. Christian. 2010. Foraging patterns of cavity-nesting birds in fire-suppressed and prescribe-burned ponderosa pine forests in Montana. *Open Environmental Sciences* 4:49-60.

- 51) Johnson, H. R., L. S. Mills, T. Stevenson, and J. Weyhausen. 2010. Population-specific vital rate contributions influence management of an endangered ungulate. *Ecological Applications*. 20:1753-1765.
- 52) Johnson, H. R., L. S. Mills, J. Weyhausen, and T. Stevenson. 2010. Combining ground count, telemetry, and mark-resight data to infer population dynamics in an endangered species. *Journal of Applied Ecology*. 47:1083-1093. doi: 10.1111/j.1365-2664.2010.01846.x
- 53) Griffin, S. C., M. L. Taper., R. Hoffman, and L. S. Mills. 2010. Ranking Mahalanobis distance models to develop specific predictions of occupancy from presence-only data. *Journal of Wildlife Management*. 74:1112-1121.
- 54) Humbert, J-Y, L. S. Mills, J. S. Horne, and B. Dennis. 2009. A better way to estimate population trends. *Oikos* 118:1940-1946.
- 55) Hodges, K. E., L. S. Mills, and K. Murphy. 2009. Distribution and abundance of snowshoe hares in Yellowstone National Park. *Journal of Mammalogy*. 90:870-878.
- 56) Griffin, P. C., and L. S. Mills. 2009. Sinks without borders: snowshoe hare dynamics in a complex landscape. *Oikos* 118:1487-1498. doi: 10.1111/j.1600-0706.2009.17621.x,
- 57) Griffin, S.C., P. C. Griffin, M. L. Taper, and L. S. Mills. 2009. Marmots on the move? Dispersal in a declining mountain mammal. *Journal of Mammalogy*. 90:686-695.
- 58) Witczuk, J., S. Pagacz, and L. S. Mills. 2008. Optimizing methods for monitoring programs: Olympic marmots as a case study. *Wildlife Research* 35:788-797. **\*COVER ARTICLE\***
- 59) Hodges, K. E. and L. S. Mills. 2008. Designing fecal pellet surveys for snowshoe hares. *Forest Ecology and Management*. 256:1918-1926.
- 60) Harris, N. C., M. Kauffman, and L. S. Mills. 2008. Inferences about ungulate population dynamics derived from age ratios. *Journal of Wildlife Management* 72:1143-1151.
- 61) Griffin, S. C., M. L. Taper, R. Hoffman, and L. S. Mills. 2008. The case of the missing marmots: are metapopulation dynamics or range-wide declines responsible? *Biological Conservation* 141:1293-1309.
- 62) Griffin, S. C., L. S. Mills, and M. Taper. 2007. Female Olympic marmots (*Marmota Olympos*) reproduce in consecutive years. *American Midland Naturalist* 158:221-225
- 63) Griffin, P. C. and L. S. Mills. 2007. Pre-commercial thinning reduces snowshoe hare abundance in the short term. *Journal of Wildlife Management* 71:559-564.
- 64) Griffin, S. C., T. Valois, M. L. Taper, and L. S. Mills. 2007. Effects of tourists on behavior and demography of Olympic marmots. *Conservation Biology* 21:1070-1081.
- 65) Hard, J.J., Mills, L.S. and Peek, J.M. 2006. Genetic implications of reduced survival of male red deer under harvest. *Wildlife Biology* 12:349-403.
- 66) Griffin, P.C., S. C. Griffin, C. Waroquiers, and L. S. Mills. 2005. Mortality by moonlight: predation risk and the snowshoe hare. *Behavioral Ecology* 16:938-944.
- 67) Mills, L. S., P. C. Griffin, K. E. Hodges, K. McKelvey, L. Ruggiero, and T. Ulizio. 2005. Pellet count indices compared to mark-recapture estimates for evaluating snowshoe hare density. *Journal of Wildlife Management* 69:1053-1062. DOI: [10.2193/0022-541X\(2005\)069\[1053:PCICTM\]2.0.CO;2](https://doi.org/10.2193/0022-541X(2005)069[1053:PCICTM]2.0.CO;2)
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#### **ARTICLES IN BOOKS AND BOOK REVIEWS IN JOURNALS (ALL INVITED ARTICLES)**

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- 111) Mills, L. S. (contributing co-author) to "Biodiversity in High Mountain Areas", Chapter 2: Intergovernmental Panel on Climate Change (IPCC) Special Report on the Ocean and Cryosphere in a Changing Climate. FULL CITATION: Hock, R., G. Rasul, et al. 2019: High Mountain Areas. In: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* [H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, A. Alegría, M. Nicolai, A. Okem, J. Petzold, B. Rama, N.M. Weyer (eds.)]. <https://www.ipcc.ch/srocc/home/>

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- 113) Mills, L. S. 2016. "Adaptive responses in animals to climate change" *AccessScience/McGraw-Hill Education*. DOI: <http://accessscience.com/content/YB160512>
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- 118) Mills, L. S. 2008. *Crossing Disciplines for Endangered Species*. Review for *Ecology of Scott, J. M., D. D. Goble, and F.W. Davis, editors. The Endangered Species Act at Thirty: Conserving Biodiversity in Human-Dominated Landscapes (Volume 2)*. Island Press, Washington, D.C. *Ecology* 89:592-593.
- 81) Mills, L. S. 2006 "Contributing Author" to "Chapter 14: North America" by Field, C. B., L. D. Mortsch, M. Brklacich, D. L. Forbes, P. Kovaks, J. A. Patz, S. W. Running and M. J. Scott, in: *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden and C. E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 6127-652.
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- 120) Mills, L. S., J. M. Scott, K. M. Strickler, and S. A. Temple. 2005. Ecology and management of small populations. Pages 691-713 *in Braun, C. E., editor. Techniques for wildlife investigations and management. Sixth edition. The Wildlife Society, Bethesda, Maryland, USA. (Invited Article)*.
- 121) Mills, L. S., and M. E. Soulé. 2006. A brief history of the role of genetics in conservation. Invited article ("box") in *Conservation Genetics* textbook by F. Allendorf and G. Luikart.
- 122) Mills, L. S., M. K. Schwartz, D. A. Tallmon, and K. P. Lair. 2003. Measuring and interpreting changes in connectivity for mammals in coniferous forests. Pages 587-613 in C. J. Zabel and R. G. Anthony, editors. *Mammal Community Dynamics: Management and Conservation in the Coniferous Forests of Western North America*. Cambridge University Press, New York, USA.
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- 125) Mills, L. S. 2002. "Genetics, Demography, and Viability of Fragmented Populations." (Book Review) *Quarterly Review of Biology* 77:222-223.
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- 129) Mills, L. S. 1997. "Book Review: Population Management for Survival and Recovery: Analytical Methods and Strategies in Small Population Conservation." *Journal of Wildlife Management* 61:251-252.
- 130) Mills, L. S. 1996. "Fragmentation of a natural area: Dynamics of isolation for small mammals on forest remnants." Pages 199-219 In Wright, G., editor. *National Parks and Protected Areas: Their Role in Environmental Protection*. Blackwell Press.
- 131) Mills, L.S. 1996. "Keystone Species." in Paehlke, R., editor. *Encyclopedia of Conservation and Environmentalism*. Garland Publishing Co., New York.
- 132) Mills, L.S. 1995. "Keystone Species." Pages 381-387 in *Encyclopedia of Environmental Biology*. Academic Press, Inc.
- 133) Mills, L.S. 1994. "Book Review: Principles of Conservation Biology." *Northwest Science* 68:303-304.
- 134) Soulé, M.E., and L. S. Mills. 1992. "Conservation genetics and conservation biology: a troubled marriage." Pages 55-69 in Sandlund, O. T., K. Hindar, and A. H. D. Brown, eds., *Conservation of Biodiversity for Sustainable Development*. Scandinavian Univ. Press, Oslo.

#### **OTHER PROFESSIONAL AND OUTREACH PUBLICATIONS**

- 135) Sanjayan, Crooks, K. R., and L. S. Mills. 2020. Michael Soulé (1936-2020): Founder of conservation biology, expansive thinker and inspiring mentor. *Nature Ecology and Evolution*. 10 August 2020. DOI: [10.1038/s41559-020-01283-1](https://doi.org/10.1038/s41559-020-01283-1) Full text access at: <https://rdcu.be/b6aWV>
- 136) Crooks, K. R., L. S. Mills, and M. Sanjayan, Guest Editors. 2020. Reflections on Michael Soulé, a visionary for conservation biology. *Conservation Biology* (Aug. 2020). DOI: 10.1111/cobi.13597.
- 137) Mills, L. S. 2020. Understanding the weasel winter wardrobe. "The Fur Shed", magazine of the Washington State Trappers Association (Summer 2020 issue, p. 23).
- 138) Mills, L. S., M. Hebblewhite, and D. R. Eacker. 2018. Bayesian Population Viability Analysis for Lynx and Wolverine in Scandinavia. ISBN 978-91-620-6793-9. Swedish EPA (Naturvårdsverket) Publication available at: [www.naturvardsverket.se/978-91-620-6793-9](http://www.naturvardsverket.se/978-91-620-6793-9)
- 139) Mills, L. S. 2016. A deadly game of hide and seek. "Crown of the Continent and the Greater Yellowstone" magazine, Spring 2016.

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- 141) McKelvey, K.S.; Perry, R.W.; Mills, L.S. 2013. The Effects of Climate Change on Mammals. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. <http://www.fs.fed.us/ccrc/topics/wildlife/mammals/index.shtml>
- 142) Cheng, E., L.S. Mills, and K.E. Hodges. 2011. Evaluating the prey base for lynx: Snowshoe hare distribution and abundance in Glacier National Park. US National Park Service. 82 pp.
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- 147) Mills, L. S. 1995. “The role of population ecology in guiding wildlife translocations.” Final report, submitted to U.S. Forest Service, Missoula, MT.
- 148) Cassidy, K., E. O. Garton, W. B. Krohn, L. S. Mills, J. M. Scott, and K. Williams. 1994. “National guidelines for assessment of reliability of GAP vertebrate distributions.” National Biological Survey.
- 149) Mills, L. S. 1994. “Effects of forest fragmentation on small mammals in Southwest Oregon.” COPE Report [(Coastal Oregon Productivity Enhancement Program), an educational non-technical publication for forest managers.] 7:6-8.
- 150) Mills, L. S. and M. Morrison. 1993. “Final Report: Ecology of the Fresno Kangaroo Rat and associated small mammals at NAS Lemoore”. Prepared for Lemoore Naval Air Station.
- 151) Fredrickson, R.J., L.S. Mills, and B.B. Moorhead. 1989. “Spotted owl surveys in Olympic National Park -- 1988 and 1989.” Olympic National Park, Port Angeles, WA.
- 152) Mills, L.S., R.J. Fredrickson, B.B. Moorhead, and D.U. Sharp. 1988. “Spotted owl distribution along elevation and vegetation gradients in Olympic National Park.” 1988 Progress Report. Olympic National Park, Port Angeles, WA.

### **SUCCESSFUL EXTERNAL RESEARCH GRANTS AND PROJECTS (SINCE 2000)**

#### **(I AM PI UNLESS OTHERWISE NOTED)**

- PI: Bridging Ecology and Evolution (“BEE”): Mechanisms and Scope for Adaptive Rescue in Polymorphic Populations. National Science Foundation \$894,817; 5/1/19 – 4/30/22 (co-PI: Jeff Good). Award # 1907022
- PI: ROA :Response of adaptive seasonal coat color morphs to predation risk. National Science Foundation (SUPPLEMENTAL award to my NSF “BEE” award above). \$24,976; 2/1/20 – 2/1/21.
- PI on grant submitted by my PhD student Jennifer Feltner: Intraguild competition and predator-prey dynamics following large carnivore recovery in the Southern Greater Yellowstone Ecosystem (SGYE). 2020 UW-NPS Small Grants Program. \$5,000.00. 5/20-12/21.
- Co-PI: National Science Foundation Innovation-Corps research-to-commercialization initiative. \$218,000; 10/1/2018 – 9/30/2024.
  - Sept. 2020: Additional \$80,000 supplement added to UM I-Corps funding.

- Co-PI: To Change or not to Change? The genetic basis and evolution of seasonal coat colour polymorphism (co-PI); Portuguese Science Foundation : €239,983,46. 1/18-1/21.
- PI: National Science Foundation “Research Experience for Undergraduates” (REU): THREE Separate projects funded: **a)** Experiential Learning in Field Ecology for Combat Veterans [\$14,822; 4/1/16-5/1/17]; **b)** Fostering Native American Research [5/1/17-5/1/18: \$16,130]; **c)** Outreach and ecological research for Native Americans [6/1/18 – 5/30/19: \$11,800].
- PI: Preliminary evaluation of monitoring and treatment evaluation for effects of forest restoration on focal hare and carnivore species. The Nature Conservancy. \$25,000 6/17 - 6/18.
- PI: Integrated Population Modeling and Viability Analysis for Lynx and Wolverine in Sweden. Swedish Environmental Protection Agency; \$109,788. 5/17 – 5/18.
- PI: World Wildlife Fund Education for Nature (Bhutan); \$23,000 (IDC=0); 1/1/17-1/1/18.
- Co-PI: Human-Caused Mortality, Genetic Introgression, and Management among Wild Red Wolves: Developing Scientific Consensus. U.S. Fish and Wildlife Service. \$172,000; 2/16–2/17.
- PI: A synthesis of appropriate science-based criteria for Scandinavian wolves. Swedish Environmental Protection Agency; \$39,438; 7/15-7/16.
- PI: LTREB: Evaluating Population Cycles and Spatial Synchrony Using Long-Term Demographic and Genetic Data on Snowshoe Hares. National Science Foundation (LTREB 5-year renewal); \$450,000; 5/1/2014- 5/1/2019. [1354449](#) and [1743871](#) (See below for first 5 years of this 10-year funded project)
- PI: Elephants on the Line: A Community-based Conservation Program for the Bhutan-India Border Landscape. USFWS Competitive Grants, International Office (Asian Elephant Conservation Fund); \$49,884; 7/1/14 – 7/1/15.
- Co-PI: Development Of An Adaptive Management Framework For The Conservation Of The New England Cottontail (*Sylvilagus transitionalis*) And Testing Population Response To Eastern Cottontail (*Sylvilagus floridanus*) Control. US Geologic Survey (USGS); \$214,000; 5/9/14 – 5/8/17.
- Co-PI: Development of a wildlife habitat matrix to inform forest management on Fort Bragg (US Army); \$250,000; 6/1/14 – 5/31/18.
- Snowshoe hare relative abundance and movement in fire-distributed landscapes. USDA Forest Service; \$10,365; 8/1/14 – 8/1/15.
- Understanding Spillover of a Deadly Virus in a Well-studied African Lion Population (co-PI with my PhD student Julie Betsch and multiple collaborators). Morris Animal Foundation; \$100,000; 7/2013 – 7/2016.
- Snowshoe hare response to forest treatment and decreasing snowpack under climate change. Bureau of Land Management; \$200,000. 9/11 – 10/15.
- Mariana fruit bat recovery project on Rota Island (co-PI with my PhD student Tammy Mildenstein). Department of Defense; \$198,000. 9/2011 – 9/2012.
- LTREB: Evaluating Population Cycles and Spatial Synchrony Using Long-Term Demographic and Genetic Data on Snowshoe Hares; National Science Foundation; \$375,000. 3/09 – 3/14. [0841884](#)
- REU Supplement to NSF LTREB grant; National Science Foundation; \$7,000. 3/9 – 2/11.
- Connecting down-scaled climate models to adaptation for a key forest species. (co-PI with Dr. Mike Mitchell). USGS NCCWSC; \$412,290. 10/1/09 – 9/30/12.
- Population Viability Analysis for Greater Sage-Grouse (coPI with Dr. David Naugle). Bureau of Land Management; \$100,943. 11/4/08 – 9/30/11.
- Developing a cost-effective non-invasive alternative to live-trapping for abundance estimation. (Co PI with PhD student Ellen Cheng). Animal Welfare Institute. \$10,000; 5/1/08 – 4/30/09

- Evaluation of risks and benefits of population augmentation options to facilitate recovery of bighorn sheep in the Peninsular Ranges, CA. 77K; CA Fish and Game; 6/1/08 – 6/1/09.
- Impacts of agriculture through habitat loss and subsidy on threatened native species: case study of flying foxes in the Philippines. Bat Conservation International; \$4,000 (With PhD student Tammy Mildenstein).
- A Risk Assessment Framework for Defining Scientifically-Defensible Recovery Goals for Listed Species. "SERDP" Program, Dept. of Defense. \$296,880; 8/2006 – 9/2009
- Diet and genetic analysis of coyotes and other carnivores in Olympic National Park. Olympic National Park. \$5,200. 4/1/2007-12/30/2008.
- Population Viability Assessment for Mariana Fruit Bats on Guam (With PhD student Tammy Mildenstein). US Fish and Wildlife Service \$5,350. 2/26/2007 – 4/30/2007.
- Marmots on the move? Dispersal in a declining mountain mammal. National Park Service. \$12,500. 4/2007 – 10/2007. (With PhD student Sue Griffin).
- Quantitative conservation analysis support for The Nature Conservancy (Co-PI with Elizabeth Crone). \$32,964. 11/2006 – 10/2007.
- Development of wildlife indicators at Mt. Rainier National Park. Mount Rainier National Park. \$23,383; 9/1/2006 – 4/30/2008.
- Genetic and demographic factors to improve recovery of Sierra Nevada Bighorn Sheep. California Dept. of Fish and Game. \$144,210; 7/2005 – 7/2008..
- Connectivity in a heterogeneous landscape: the genetics and population dynamics of Olympic Marmots. National Science Foundation "Collaborative Research" Award. Co-PI with Mark Taper (Montana State University). 8/2004 – 8/2007. \$325,000.
- Assessing long-term trophic control of aspen demography: effects of wolves and elk over large spatial scales. National Parks Foundation and Ecological Society of America. 5/2004 – 5/2007. \$150,000. Co-PI with Matthew Kauffman (post-doc) and John Maron (DBS).
- Sensitivity analysis of sage grouse (With Dave Naugle). Bureau of Land Management. \$12,000; 7/2005 – 6/2006.
- Evaluating the prey base for lynx in Glacier National Park: snowshoe hare abundance, habitat use, and population dynamics. Co-PI with Karen Hodges (my post-doc). National Park Service, Natural Resources Protection Program. \$432,745; 1/1/2005 – 12/31/2007
- Snowshoe hare and red squirrel relative abundance and distribution in Yellowstone National Park. National Park Service. \$21,500; 5/1/2002 – 12/30/2004
- Temporal dynamics of snowshoe hares in Yellowstone National Park. Co-PI with Karen Hodges (post-doc). \$8,500; 9/1/2004 – 12/30/2005.
- Snowshoe hare habitat use in fragmented forests in northern Washington. Co-PI with Karen Hodges (post-doc). Washington Dept of Fish and Wildlife. \$87,968; 1/1/2003 – 6/25/2005.
- REU (Research Experience for Undergraduates) Supplement to Snowshoe Hare/Lynx Demography and Genetics study. National Science Foundation. \$6,000; 5/1/2002 – 5/31/2003.
- Measuring and evaluating connectivity in Olympic marmots. NSF "EPScOR". 5/1/2002 – 1/31/03. \$36,725. (A sister proposal was submitted by Mark Taper, my collaborator at MSU).
- Comparison of pellets to hare densities. USFS Science and Leadership in Cooperation Grant. \$221,500; 9/2000 – 6/ 2004.
- Molecular analysis of threatened lynx and other mammals in the national park system. National Park Service. 10/1/2001 – 9/1/2004. \$18,000 + \$11,500 (As of December 02) = \$29,500. PI.

- Calibrating landscape models of spatially structured snowshoe hare populations. Co-PI with John Goodburn. McIntire-Stennis. \$39,994; 1/2001 – 5/2004.
- Acquisition of instrumentation for research in evolutionary and conservation genetics. Co-PI with P. Kukuk and F. Allendorf. National Science Foundation. \$128,000; 6/13/2000 – 8/31/2000.
- Snowshoe hare response to thinning. Plum Creek. \$82,884; 2/28/2000 – 7/1/2002.
- Supplemental Funding to support Undergraduate Research (REU). National Science Foundation. \$9,750; 3/2000 – 12/2002.
- Highways as potential barriers to movement and genetic exchange in small vertebrates. Montana Department of Transportation. \$176,591. 5/1/2000 – 12/31/2002.
- CAREER: Snowshoe hares and lynx in a fragmented landscape: merging demographic and genetic approaches. National Science Foundation CAREER grant. \$330,000; 6/1999 – 6/2003 (#9876054)

#### **SELECTED MAJOR COMPETITIVE GRANTS IN SUPPORT OF RESEARCH BY MY GRADUATE STUDENTS (SINCE 2000)**

NSF Dissertation Improvement Grant (approx. \$10,000): Paul Griffin (2001); Ellen Cheng (2008).  
 NSF Graduate Student Research Fellowship (“GRFP”) (approx. \$120,000): Sue Griffin (2003); Julie Betsch (2011); Alex Kumar (2014), Jennifer Feltner (2015).  
 EPA Graduate Student Fellowship (\$84,000): Sue Griffin (2001).  
 Canon National Parks Science Scholarship (approx. \$80,000; 3 yr): Sue Griffin (2004); Heather Johnson (2007).  
 PEO Dissertation Fellowship (approx. \$15,000): Heather Johnson (2009).  
 Budweiser Conservation Scholarship (approx. \$10,000): Jenny Woolf (2000), Sue Griffin (2004), Heather Johnson (2007).

#### **SELECTION OF PROFESSIONAL PRESENTATION (SINCE 2007)**

##### **INVITED WORKSHOPS AS LEADER**

Connecting Elephant Friendly Tea Certification to Elephant Vital Rates and Population Recovery. Kazaringa National Park, India. May 2017.  
 Biological and policy aspects of hybridization in endangered species, with implications for red wolf recovery. Atlanta, Georgia. May 2016.  
 Wildlife Research Techniques in Rugged Mountainous Asian Landscapes. Ugyen Wangchuk Institute for Conservation and the Environment. Bhumthang, Bhutan. May 13-20, 2010.  
 Small Mammal Research Techniques and Survey Design. Manas National Park, Bhutan. Feb. 11-16, 2010.  
 Using Sensitivity Analysis of Population Viability Models to Guide Management Decisions. Workshop at National Meeting of The Wildlife Society; Miami, FL; 11/8/2008.  
 SERDP: Risk Assessment framework for defining scientifically defensible recovery goals for listed species. Coeur d’Alene, Idaho, February 2007.

##### **SELECTED INVITED WORKSHOPS AS PARTICIPANT/PRESENTER (SINCE 2007)**

- “Lean Launchpad” entrepreneurial course, invited selection through NSF I-Corps Award (“Elephant Friendly Tea and Elephant Origins”). (2019/2020)
- Breakthrough Leadership Program (Participant). Invited week-long Executive Leadership Program, Sept. 2017.
- Workshop on Asian Elephant Research and Conservation in Northeast India. Guwahati, India, where I presented 3 talks over 2 days (May 11/12, 2017):
  - Integrating science and conservation: from field data to models to management
  - Genetic Tools to Estimate Abundance (And More!)
  - Estimating connectivity with genetic tools
- Scientific Integrity: Producing, incorporating, and advocating for science in the age of alternative facts. Panel Discussion at Montana Chapter Meeting, The Wildlife Society, Feb. 2017.
- Interactions of human-caused mortality, genetic introgression, and management among wild red wolves in NC. Panel Discussion member. Wildlife Society Annual Meeting, Raleigh, N.C., Oct. 2016.
- Webinar presentation, sponsored by USGS National Climate Change Wildlife Science Center, 7/9/13: “Can camouflage keep up with climate change? White hares on brown snowless backgrounds as a model to study adaptation to climate stress.”
- Florida Panther model development workshop (Florida Fish and Game, USFWS, and Univ. of Florida); St. Petersburg, FL; Oct. 2007.

#### **SELECTION OF INVITED CONFERENCE TALKS (SINCE 2008)**

- Mills, L. S. Invited video to commemorate the life of SCB founder Michael Soulé, Closing Session of the North American Congress for Conservation Biology. Denver (Virtual). July 2020.
- Mills, L. S., Keynote Speaker: “Marrying Ecology and Evolution for Conservation”, Midwest Ecology and Evolution Conference, McComb Illinois, Feb. 2020
- Mills, L. S. Seasonal Coat Color as a Model to Develop Management Guidelines to Foster Adaptive Rescue. Invited Symposium on "Understanding and Adapting to Climate Change: A Focus on Snow Specialists" at The Wildlife Society meetings, Reno, NV, Oct. 2019.
- Zimova, M. and L. S. Mills. Adaptive Capacity to Camouflage Mismatch. Invited Symposium on "Understanding and Adapting to Climate Change: A Focus on Snow Specialists" at The Wildlife Society meetings, Reno, NV, Oct. 2019.
- Kumar, A.V., and L.S. Mills. Snow-mediated plasticity in phenology does not prevent camouflage mismatch. Invited Symposium Presentation at The Wildlife Society meetings, Reno, NV, Oct. 2019.
- Mills, L. S. Non-invasive tools for tiger monitoring: applications in Bhutan. Invited Plenary presentation at the International Forum on Tiger and Leopard Transboundary Conservation, Harbin, China, July 2019.
- Mills, L. S. Successful wildlife conservation in North America at the intersection of science, management and partnerships. Invited Plenary presentation at CIC meeting, Namibia, May 2019.
- Mills, L. S. Practical considerations for evaluating effects of connectivity and harvest on transboundary carnivore populations. Invited presentation in symposium (*Conservation and management of transboundary large carnivore populations: challenges and opportunities*) at the 2018 European Congress of Conservation Biology, Jyväskylä, Finland, June 2018.
- Mills, L. S. The potential for adaptation to climate change for wild animals. Invited presentation, Climate Change Science Roundtable sponsored by National Wildlife Federation and the UM Climate Change Science Program, June 5, 2017.

- Mills, L.S. Keynote Address: The need for monitoring wildlife population in the Himalayas. In: Special Symposium ("Conservation Biology and Wildlife Research Symposium on Monitoring Forest Biodiversity through Non-Invasive Sampling Techniques"), Ugyen Wangchuck Institute for Conservation and Environment. Bumthang, Bhutan. (November 2014).
- Mills, L. S. The potential for adaptation to climate change: confronting mismatch in seasonal coat color, Invited Symposium at The Wildlife Society, Milwaukee, WI (August 2013)
- Melo-Ferreira, J., F. Seixas, E. Cheng, L. S. Mills, P. C. Alves. Cryptic Divergence and ancestral hybridization among North American hares (*Lepus* spp.). 11<sup>th</sup> International Mammal Congress, Belfast, Ireland. August 2013
- Mills, L. S., M. Zimova, J. Good., C. Breuner, P. Alves, and J. M. Ferreira. Intersecting snow models, radiotelemetry, transcriptomes and hormone assays to unravel and interpret seasonal coat color change. Plenary Talk at World Lagomorph Congress, Vienna, Austria (July 2012).
- Mills, L. S. Can camouflage keep up with climate change? Seasonal coat color confronts a globally decreasing snowpack. Invited Symposium talk, The Wildlife Society, Snowbird, Utah, Oct. 2010.
- Mills, L. S. Overview of impacts and possible responses for terrestrial wildlife in western Montana. Anticipating Climate Change: A FWP workshop focused on northern Coniferous Forest ecosystems, alpine meadows, and the Clark Fork upstream of Idaho to the Bitterroot River headwaters. Kalispell, MT 12/09. (Invited Plenary Lecture)
- Mills, L. S. Wildlife responses to climate change: Adapt, move, or die. Conference of biologists and planners from National Park Service, US Forest Service, and Montana: Climate Change in the Crown of the Continent: Identifying Multi-Jurisdictional Strategies. Whitefish, MT 12/3/08. . (Invited Plenary Lecture)
- Mills, L. S., Will *Lepus* successfully respond to global warming: A proposed rangewide research initiative. Invited Plenary Talk, 3<sup>rd</sup> World Lagomorph Conference, Morelia, Mexico, 10/30/08.
- Mills, L. S. Keeping conservation biology thriving for the next 22 years. Plenary Lecture, Annual Research Symposium of the Montana Chapter of the Society for Conservation Biology. 10/10/2008.
- Mills, L. S., J-Y Humbert, J. S. Horne and B. Dennis. Is my population recovering, decreasing, or stationary? Improving the status quo for estimating exponential trend from count data. Society for Conservation Biology, Chattanooga, TN, July 2008.
- Dennis, B., J-Y Humbert, L. S. Mills and J. S. Horne. Estimating ecological trend: which model should I use? Society for Conservation Biology, Chattanooga, TN, July 2008.

#### **SELECTED INVITED SEMINARS AT OTHER UNIVERSITIES (SINCE 2008)**

- December 2019: Virginia Tech University
- November 2019: Oregon State University
- July 2019: Flathead Lake Biological Station (UM); "Data Doughnuts" seminar series
- April 2019: University of Portugal CIBIO Biological Research Station, Porto, Portugal
- March 2018: Organismic and Evolutionary Biology Seminar Series, Univ. Massachusetts, Amherst.
- February 2018: Fish and Wildlife Biology, University of Idaho
- January 2018: Biology Department, Stockholm University, Stockholm, Sweden.
- April 2017: Western Illinois University, McComb; Roger and Jean Morrow Distinguished Lecture Series
- March 2017: Utah State University, Logan
- February 2016: Duke University, Durham

January 2016: University of California, Santa Barbara (Bren School of the Environment)  
 March 2015: University of South Carolina, Beaufort, Biology Department and General Public  
 March 2015: North Dakota State Univ., Biological Sciences Graduate Student Association Invited Speaker  
 Feb. 2015: Appalachian State University, Biology Department Invited Speaker  
 Jan 2015: Clemson University, Natural Resources Graduate Student Association Invited Speaker  
 September 2014: University of Wisconsin Wildlife Ecology Department  
 April 2014: Monmouth College Distinguished Speaker: "McMullen Lecture Series"  
 January 2014: Fondazione Edmund Mach (Trentino, Italy)  
 December 2013: SUNY Syracuse  
 September 2012: North Carolina State University Zoology Seminar  
 November 2012: University of Montana Organismal Biology and Ecology seminar.  
 January 2012: University of Alberta, Edmonton  
 December 2011: Texas A&M, College Station  
 April 2008: University of Alaska, Juneau  
 April 2008: Department of Conservation Biology; Donana Biological Station, Sevilla, Spain  
 April 2008: University of Porto, Portugal  
 March 2008: University of Florida, Wildlife Ecology Department

#### **SELECTED CONTRIBUTED CONFERENCE PRESENTATIONS (SINCE 2010)**

##### **PRIOR TO 2010:**

- 2003-2009: 22 contributed presentations
- 1999 through 2002: 21 contributed presentations
- 1995 through 1999: 8 contributed presentations
- Prior to 1995: 9 contributed presentations

Kumar, A.V. and L. S. Mills. 2020. Biotic and abiotic drivers of acyclic snowshoe hare population dynamics in a spatially complex system. North American Congress for Conservation Biology. Denver (Virtual). July 2020.

Pimenta, J., M. S. Ferreira, M. R. Jones, D. J. R. Lafferty, L. S. Mills, J. M. Good, and J. Melo-Ferreira. White to brown and back: circannual genic regulation of coat colour change in snowshoe hares. European Society for Evolutionary Biology, Turku, Finland. Aug. 2019

Ferreira, M., M R. Jones, C M. Callahan, L Farello, L. S Mills, P Alves, J M. Good, J Melo-Ferreira The rippling effect of ancestral introgression in the radiation of hares. European Society for Evolutionary Biology, Turku, Finland. Aug. 2019

Mills, L. S. and L. Mills. 2019. Elephant Friendly Tea: An Example of Wildlife Science-Based Commercialization To Save An Endangered Species. Montana Chapter of The Wildlife Society, Feb. 2019; Helena, MT

Davis, B. M., L. S. Mills. Weasely recognized or stoatally camouflaged: Quantifying coat color of a cryptic predator. Montana TWS Annual Conference; Feb, 2019; Helena, MT.

Kumar, Alex, and L. S. Mills. "Short-term Response of Snowshoe Hares to Western Larch Restoration and Seasonal Needle Drop" Montana TWS Annual Conference; Feb, 2019; Helena, MT.

Davis, B. M., L. S. Mills. Weasely recognized or stoatally camouflaged: Quantifying coat color of a cryptic

- predator. The Wildlife Society Annual Conference; October 2018; Cleveland, OH.
- Hackländer K, M. Zimova, S. Suhrer, J. Melo-Ferreira, P.C. Alves, and L. S. Mills. 2017. Coat colour change pattern in Alpine mountain hares (*Lepus timidus varronis*) along an altitudinal gradient in Grisons, Switzerland. 12th International Mammalogical Congress. Perth, Australia. July 2017.
- Jones, M. R., Melo-Ferreira, J., Alves, P. C., Callahan, C. M., D. J. Lafferty, J. D. Jensen, L. S. Mills, J. M. Good. (2017). Molecular and evolutionary origins of seasonal camouflage in snowshoe hares. Society for Molecular Biology and Evolution. Austin.
- Mills LS, Bragina E, Fay K, Zimova M, Davis B, Kumar A, Lafferty DJR, Feltner J, Hackländer K, Alves P, Melo-Ferreira J, Pacifici K (2016) Lagging morphs of lagomorphs in winter. World Lagomorph Society, Turlock, CA, USA.
- Kumar, A. and L. S. Mills. 2016. The cascading effects of circannual phenologies across trophic levels. World Lagomorph Society, Turlock, CA, USA.
- Zimova, M., L. S. Mills and J. J. Nowak (2016). High fitness costs of climate change-induced camouflage mismatch. World Lagomorph Society Conference, Turlock, CA.
- Jones, M. R., Melo-Ferreira, J., Alves, P. C., Callahan, C. M., D. J. Lafferty, J. D. Jensen, L. S. Mills, J. M. Good. 2016. The evolution of seasonal camouflage. American Society of Mammalogists.
- Lafferty DJR, Bragina E, Clontz L, Davis B, Fay K, Feltner J, Kumar AV, Sanders D, Venezia R, Whitcher S\*, Zimova M, Mills LS (2016) Cultivating collaborations across the academic hierarchy: essential training for the next generation of wildlife ecologists. The Wildlife Society, Raleigh, NC.
- Hackländer K, Venezia R, Palme R, Mills LS (2015): Stress responses in snowshoe hares facing mismatch of coat colour and their environment. [7th European Congress of Mammalogy, Stockholm, AUG 17-21, 2015], Abstract In: Angerbjörn A, Dalén L, Elmhagen B, Werdelin L, Abstracts 7th European Congress of Mammalogy
- Mills, L. S. Seasonal Coat Color and Climate Change in Mammals: A Global Model System to Understand Adaptive Rescue European Society of Mammalogists Meeting, Stockholm, August 2015
- Zimova M., S. Mills, M. Mitchell, P. Lukacs, and J. Novak. Camouflage mismatch in seasonal coat color due to decreased snow duration: Will snowshoe hares keep up with climate change? European Society of Mammalogists Meeting, Stockholm, August 2015.
- Zimova M., L. S. Mills, and J. J. Nowak. Climate change and the high fitness costs of seasonal camouflage mismatch in snowshoe hares. Evolution annual meeting, June 2014, Raleigh, NC
- Kumar, A.V., L.S. Mills and J. Sparks. *The Cascading Effects of Circannual Phenologies Across Trophic Levels - How Western Larch affect the Coat Color Molt in Snowshoe Hares*. The Wildlife Society's 22<sup>nd</sup> Annual Conference, Winnipeg, MB. 19 October 2015.
- Zimova M., S. Mills, M. Mitchell, P. Lukacs, and J. Novak. Camouflage mismatch in seasonal coat color due to decreased snow duration: Will snowshoe hares keep up with climate change? Society for Conservation Biology annual meeting, July 2014, Missoula MT.
- Johnson, H., L. S. Mills, J. Wehausen, T. Spethenson, and G. Luikart. Translating effects of inbreeding depression on component vital rates to overall population growth in endangered bighorn sheep. Society for Conservation Biology annual meeting, July 2014, Missoula MT.
- Larkin, B., L. S. Mills, and S. Surher. Photos and phenotypes: using camera trap images to monitor seasonal coat color change in snowshoe hares. Society for Conservation Biology annual meeting, July 2014, Missoula MT.
- Hodges, K., and L. S. Mills. High variability in snowshoe hare densities in their southern range. Society for Conservation Biology annual meeting, July 2014, Missoula MT.

- Melo-Ferreira, J., F. Seixas, E. Cheng, L. S. Mills, P. C. Alves. Cryptic Divergence and ancestral hybridization among North American hares (*Lepus* spp.). 11<sup>th</sup> International Mammal Congress, Belfast, Ireland. August 2013
- Alves, P. C., J. Melo-Ferreira, J. Vilela, M. Zimova, J. Good, and L. S. Mills. *Evolution of coat-color seasonal variation in hares (Lepus)*. Society for the Study of Evolution, Snowbird, Utah, June 2013.
- Zimova, M., and L. S. Mills. Seasonal coat color camouflage confronts globally decreasing snowpack Plenary Talk at World Lagomorph Congress, Vienna, Austria (July 2012).
- Pagacz, S., J. Witzczuk, S. C. Griffin & L. S. Mills; Optimizing methods for wildlife monitoring programs: Range-wide occupancy sampling of Olympic Marmots. International Congress for Conservation Biology (ICCB) (Edmonton, Alberta); July 2010.
- Witzczuk, J., S. C. Griffin & L. S. Mills. Non-native coyote predation on endemic marmots; International Congress for Conservation Biology (ICCB) (Edmonton, Alberta); July 2010.

#### **SELECTED CONFERENCE POSTERS (SINCE 2010)**

- Ferreira, M. S., C. M. Callahan, L. Farelo, M. R. Jones, L. S. Mills, P. C. Alves, J. M. Good, J. Melo-Ferreira. (2018). The evolution of seasonal coat color change in hares and jackrabbits. Society of Evolution Meetings, Montpellier, France, August 2018.
- Lafferty, DJR; Kumar, A; Whitcher, SL; Hackländer, K; Palme, R; Mills, LS (2016): Within-sample variation in snowshoe hare fecal glucocorticoid metabolite measurements. 5th World Lagomorph Conference, Turlock, California, July 11-15.
- Zimova, M., L. S. Mills, P. C. Alves, J. Melo-Ferreira (2016). Interspecific competition, hybridization, replacement and adaptation: a case study using whole genome sequencing in hares from Scotland. Poster. Congenomics. Porto, Portugal.
- Davis BM, Mills LS, Kays R, Pacifici K, Powell RA. The Weasel Coat Color Molt: Phenological Response to Climate Change. Poster presented at: The Wildlife Society Annual Conference; October 2016; Raleigh, NC
- Sanders De'Aja, Davis B, Lafferty DJR, Mills LS (2016) Camera trap limitations: quantifying error rates and assessing impacts on animal behavior. The Wildlife Society, Raleigh, NC, USA
- Lafferty DJR, Bragina E, Clontz L, Davis B, Fay K, Feltner J, Kumar AV, Sanders D, Venezia R, Whitcher S, Zimova M, Mills LS (2016) Snowshoe hare conservation physiology: a catalyst for cultivating collaborations. North Carolina State University Postdoctoral Research Symposium, Raleigh, NC, USA – Poster presentation
- Venezia, R; Lafferty, D; Hackländer, K; Palme, R; Mills, LS (2016): Physiological stress response of snowshoe hares (*Lepus americanus*) to environmental enrichment. 5th World Lagomorph Conference. [Abstract in Endangered Species Recovery Program, California State University Stanislaus, Proceedings of the 5th World Lagomorph Conference, Turlock, California, July 11-15, 2016, 112].
- Clontz L, Lafferty DJR, Zimova M, Hackländer K, Palme R, Mills LS. (2016) Environmental factors influence measures of physiological stress in snowshoe hares. The Wildlife Society, Raleigh, NC, USA.
- Venezia R, Lafferty DJR, Hackländer K, Palme R, Mills LS (2016) Measuring stress in captive wildlife: how enrichment can be used to mediated stress to experimental treatments. The Wildlife Society, Raleigh, NC, USA.

Kumar, A.V., L.S. Mills and J. Sparks. Effects of Stand Structure Manipulation on the Seasonal Color Molt and Vital Rates of Snowshoe Hares. The Wildlife Society's 21<sup>st</sup> Annual Conference, Pittsburgh, PA. 27 October 2014

Betsch, J.B., Roelke-Parker, M., Dubovi, E., Packer, C., Cleaveland, S., Mills, L.S. August 2013. Understanding the emergence of Canine distemper virus in Serengeti lions. Viral Evolution and Molecular Epidemiology Bioinformatics Workshop. Gainesville, FL.

Betsch, J.B., Roelke-Parker, M., Dubovi, E., Davis, B., Packer, C., Cleaveland, S., Mills, L.S. September 2014. Evolutionary genetics of clinical *Canine distemper virus* emergence in *Panthera leo*: understanding heterogeneity in exposure outcome in Serengeti lions. Viral Evolution and Molecular Epidemiology Bioinformatics Workshop. Rome, Italy.

#### **SELECT INVITED PRESENTATIONS TO PUBLIC AND/OR NON-UNIVERSITY GROUPS (SINCE 2008)**

Mills, Lisa and L. Scott Mills. "Hope for the Endangered Asian Elephant". Public presentation (approx. 100 attending) in the "Hall of Biodiversity" in Porto, Portugal. April 2019.

Evening discussion and led snowmobile forest tour to Board Members of The Nature Conservancy: "Forest restoration, hares, lynx, and climate change", Feb 2018.

Served as Invited Panelist at the Missoula Documentary Film Festival to discuss the new "Bill Nye the Science Guy" film. (11/9/18)

Roger and Jean Morrow Distinguished Lecture (Public Lecture), Western Illinois University, McComb, IL. April 2017.

McMullen "Distinguished Lecturer" Series for Earth Day, Monmouth College, Public Seminar: Seven Billion Humans Meet Nine Million Other Species. April 2014.

Mills, L.S. (and 5 of my undergraduate and graduate student hare field crew): Two days of talks in the field to a Missoula County Extension kids summer camp called "I-Nature". July 2012.

Mills, L. S., R. Taylor, and D. Naugle. Sage grouse viability analysis and management alternatives. Presentation to approximately 50 Bureau of Land Management Staff (Montana and Wyoming), Miles City, MT, Sept 2010.

Mills, L. S. What wildlife ecology fieldwork is all about. Full-day training session on field techniques to 6 undergraduates from Puerto Rico participating in the Univ. MT "IM-SURE" Program. June 16, 2009.

Mills, L. S. Climate change and winter coats. Half-day training lectures to all Interpreters/Naturalists at Glacier National Park, June 10, 2009.

Mills, L. S. Snowshoe hares in Glacier National Park and North America: food for lynx and a potential sentinel for climate change. Waterton-Glacier Science and History Day, July 22, 2008.

Mills, L. S. "Climate change effects on wildlife: move, deal with it, adapt, or die." Public talk, Juneau Alaska (Interview about my talk on National Public Radio, Juneau Affiliate: April 11 2008.

#### **RECENT INVITED PROFESSIONAL COMMITTEE INVOLVEMENT (SINCE 2007)**

- Ex Libris Research Management Advisory Council (Dec 2019-)
- Panelist to review proposals for National Academies of Sciences Partnership for Enhanced Engagement in Research (PEER) Program (June 2018).

- Panelist for EPA-STAR Graduate Fellowships ('Terrestrial Animal Ecology' section). Washington, D.C. (Feb. 2012).
- Panelist to evaluate all Swedish Biodiversity Research from 2002-2006, sponsored by Swedish Research Council and the Research Council for Environment, Agricultural Sciences and Spatial Planning. Stockholm, Sweden. (April 2010).
- Panelist for National Science Foundation, Washington DC
  - Evolutionary and Population Ecology Grant Advisory Panel, Washington, D.C. (At least 7 times).
  - Panelist for National Science Foundation Doctoral Dissertation Improvement Grant Panel (Population and Evolutionary Processes), Washington, D.C. (December 2008).
- Participant in Montana Fish, Wildlife and Parks' Science Methodology Review Team as (part of the Crucial Areas and Wildlife Corridors Assessment Process) (2008).
- Member, Western Governors Association Climate Change Working Group to assess "Corridors and Climate Change. Involved multiple working sessions and production of a report unveiled to all western Governors, Secretary of Interior, and others (Report can be accessed at: <http://www.westgov.org/wga/publicat/wildlife08.pdf>). (December 2007 to June 29, 2008).

### **INTELLECTUAL PROPERTY and DATABASES**

- Certified Elephant Friendly Tea (copyright, 2020)
- GPS Radio Collar with light and sound sensors (In progress, 2020)
- Mills, L.S., K.E. Hodges, A.V. Kumar, M. Zimova, P.C. Griffin, and E. Cheng. 2020. Snowshoe Hare Mark-Recapture Trapping Data from western Montana Summer 1998-2018 ver 1. Environmental Data Initiative. <https://doi.org/10.6073/pasta/180be476a353cf9969076e332dd1cddb>.

### **SELECT ACTIVE INTERNATIONAL RESEARCH AND CAPACITY BUILDING PROGRAMS**

**Bhutan:** Capacity building for ecological research (multiple visits: 3 weeks in Jan. 2007; Six months in 2010 supported by Guggenheim Fellowship; 2 weeks in Oct. 2012; 2 weeks Nov 2014; 2 weeks April 2016); three Bhutanese PhD students.

**India:** Asian elephant work (outreach and education)

**Portugal:** Active two-way research collaborations since 2006 with Univ. of Porto, Portugal (continuing).

**Scotland:** Visited summer 2012 as part of NSF-sponsored International Exchange; beginning collaboration on mountain hares in Scotland.

**Sweden:** Invited reviewer of Biodiversity research (2010); Invited Reviewer of large carnivore management (2013), Invited expert evaluator of conservation status for wolves (2015).

### **EDITORSHIPS**

Associate Editor of "Journal of the Bhutan Ecological Society" (current)

Associate Editor of Journal of Wildlife Management (past)

Associate editor of Ursus (past)

### **Selected MEDIA COVERAGE, OUTREACH and INTERVIEWS (selected, since 2007)**

- “Elephant Origin” Tea, the retail arm of the “Elephant Friendly Tea” Program developed by Lisa Mills and me to transform Asian Elephant conservation, won the Global Tea Excellence Award, October 2020: <https://worldteanews.com/editors-choice/winners-2020-world-tea-best-of-awards>
- Featured in Two blogs based on interviews with ExLibris company about best research practices:
  - “3 Challenges and 3 Opportunities for Researchers during COVID-19 (August 2020) <https://www.exlibrisgroup.com/blog/researchers-covid19-3-challenges-3-opportunities/>
  - “4 keys to fostering interdisciplinary research” (July 2020); <https://www.exlibrisgroup.com/blog/4-keys-to-fostering-interdisciplinary-research/>
- “Confluence”: A PODCAST by the University of Montana Graduate School (posted Fall 2019): <https://www.umt.edu/grad/telling-our-story/confluence-podcast/default.php>
- 2020: Working with film crews from : a) David Attenborough series about “Colour in the Natural World”; b) BBC “Frozen Planet”. (Visits for March 2020 got delayed by COVID-19)
- Lisa and Scott Mills featured in: “University of Montana helps Asian elephants through ‘unconventional’ work. *Missoulian* 1/26/20.
- Cover of *Science*, 2/15/19 (focusing on Gordon Research Conferences): Cover was one of my research snowshoe hares. Although we did not have an article in this issue, our hare was chosen for cover art because my research group had 2 hare/coat color articles in *Science* in 2018
- Our coat color mismatch (and photo) featured in Chapter 7 (Ecosystems and Biodiversity) of: USGCRP, 2018: *Fourth National Climate Assessment: Impacts, Risks, and Adaptation in the United States, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.
- Our two 2018 articles in *Science* magazine (2 March 2018 issue AND 22 June 2018 issue) have been covered in >40 scientific blogs and media outlets globally (many more than that if re-broadcasts are included). For a compilation of these: <http://www.umt.edu/research/millslab/coat.php>.  
 Here are a few highlights:
  - Featured in PNAS “Front Matter” article: ‘Probing the limits of evolutionary rescue’ by Amy McDermott, PNAS 2019; 116(25): 12116-12120.
  - September 2018: **SciShow** (>5 million subscribers) with Hank Green (35 minute interview).
  - **National Science Foundation** Tumblr Blog posted 12/20/2018: "Winter wardrobe: When a changing climate makes it difficult to know what to wear".
  - **Science Magazine** Blog posted 6/21/2018: <https://www.sciencemag.org/news/2018/06/how-snowshoe-hare-losing-its-white-winter-coat>
  - Mills On-air interview with **TRAIL FM radio** (3/11/19): <https://drive.google.com/file/d/1YzrhY8ze7q3vryeiT-Qnw6G-z-vmBqYU/view>
  - **Video** on our June 2018 *Science* paper findings: <https://vimeo.com/275115369>
  - **Newslick (India)**. Facilitating evolution can help animals survive climate change. 8 March 2018. <https://www.newslick.in/facilitating-evolution-can-help-animals-survive-climate-change>

- **Die Presse (Germany)**. Color changing animals strongly affected by climate change. 17 Feb 2018. <https://diepresse.com/home/science/5373432/Farbwechselnde-Tiere-stark-vom-Klimawandel-betroffen>
- **International Wildlife Film Festival**. Production and premiere of “Hoptimistic”, April 2018.
- **The New York Times**. 5 Plants and Animals Utterly Confused by Climate Change. 4/4/18 <https://www.nytimes.com/2018/04/04/climate/animals-seasons-mismatch.html>
- **The Missoulian**. “University of Montana graduate students are co-authors on top ‘Science’ article”. 18 March 2018. [http://missoulian.com/news/local/university-of-montana-graduate-students-are-co-authors-on-top/article\\_223bde4d-70de-5c31-a16f-3bd38e21b9d7.html](http://missoulian.com/news/local/university-of-montana-graduate-students-are-co-authors-on-top/article_223bde4d-70de-5c31-a16f-3bd38e21b9d7.html)
- **The Atlantic**. To survive, these animals must lose their camouflage. 14 Feb 2018. <https://www.theatlantic.com/science/archive/2018/02/in-a-less-snowy-world-can-white-coated-animals-survive/553400/>
- **The National Geographic**. How color-changing animals are rebelling against climate change. 2/17/18. <https://news.nationalgeographic.com/2018/02/animals-climate-change-winter-evolution/>
- **BBC**. How hares hide in plain sight. 2/16/2018. <http://www.bbc.co.uk/programmes/p05ycvbm>
- **Carbon Brief**. Animals with white winter camouflage could struggle to adapt to climate change. 2/15/2018. <https://www.carbonbrief.org/animals-with-white-winter-camouflage-could-struggle-to-adapt-to-climate-change>
- **The Weather Channel**. Can evolution rescue color-changing animals as climate change gets worse? 2/19/18. <https://weather.com/science/nature/news/2018-02-19-color-changing-animals-climate-change-evolution>
- Alternative outreach: Supported 4 students (3 graduate students, one undergrad) in producing an ‘interpretive dance’ of our coat color/ adaptation to climate change research: (April 2018) <http://www.umt.edu/research/millslab/stories/dance.php>.
- April 2017: Hosted National Geographic Filmmakers seeking to film snowshoe hares at my long-term study sites.
- Our coat color mismatch work is the focus of a book by acclaimed children’s writer, Sneed B. Collard III: (“Hopping ahead of climate change: snowshoe hares, science, and survival”); Fall 2016 publication (the book was covered in *Science* [2016 Dec. 9, 354(6317):1226].
- We produced a stand-alone video on “Wildlife Adaptation to Climate Change” for The Great Animal Orchestra Symphony premiered by the North Carolina Symphony on April 17, 2016 : <https://drive.google.com/file/d/0BwCwv6vkqJKsLTZmMTduYIZCVHM/view?usp=sharing>
- A sampling of just some of the interviews and media coverage of our article in *Ecology Letters* (Zimova et al. 2016) showing high mortality for climate change-induced camouflage mismatch in snowshoe hares [selected from >40 radio, newspaper, and online outlets]:
  - Featured top science story on *Newswise* feed
  - **AAAS Science Update** radio story: <http://www.scienceupdate.com/2016/01/hare-2/>
  - Voice of America News: “Winter white puts hares at risk”
  - National Public Radio: KPLU, Seattle, Washington: <http://www.kplu.org/post/snowshoe-hares-predated-wearing-white-out-season>
  - Featured story on NSF’s Science360: <http://news.science360.gov/archives/20160125>
  - Featured on U.S. Geographical Survey website, social media, photo gallery

- *Forbes*: <http://www.forbes.com/sites/jvchamary/2016/01/29/snow-hare-climate-change/#4752efbb2ccb>
- Yahoo News: [http://news.yahoo.com/color-changing-rabbits-t-cope-warmer-world-020343779.html; ylt=A0LEVjw\\_T7JWIkYANcQnnllQ; ylu=X3oDMTBybGY3bmpvBGNvbG8DYmYxBHBvcwMyBHZ0aWQDBHNIYwNzcg--](http://news.yahoo.com/color-changing-rabbits-t-cope-warmer-world-020343779.html; ylt=A0LEVjw_T7JWIkYANcQnnllQ; ylu=X3oDMTBybGY3bmpvBGNvbG8DYmYxBHBvcwMyBHZ0aWQDBHNIYwNzcg--)
- How Stuff Works: <http://now.howstuffworks.com/2016/01/27/climate-change-snowshoe-hare-camouflage>
- Coverage of our new project starting in Scotland on mountain hares: “Running Out of Time?” by Amy-Jane Beer in *BBC Wildlife Magazine* August 2015.
- Interviewed for article on red wolf hybridization, evolution and conservation: “The Opposite of Extinction” by Ellie Kincaid on *Scienceline* (17 Jan. 2016).
- “West Virginia Snowshoe Hare Study Links Camouflage and Climate Changes”; article on our new work in W. VA in *Charleston Gazette*, by John McCoy: <http://www.wvgazette.com/article/20140907/GZ07/140909623> Sunday, Sept. 7, 2014:
- “Thinning Hares raise concerns across PA. *Pittsburgh Tribune*, Bob Fry, 3/1/14. <http://triblive.com/sports/outdoors/5655516-74/hares-pennsylvania-boyd#axzz3lqvQyu9G>
- “Total White Out: Snowshoe Hares VS Global Warming”, by Lesley Evans Ogden in *New Scientist* 23 Nov. 2014.
- National Association of Science Writers “Science in Society Award” 2013 (one of 5 awards) presented to freelancer Hillary Rosner for an article on my snowshoe hare research [“The Color of Bunny” in *High Country News*]
- Featured on NPR’s Morning Edition News Show (Sunday Edition), 9/8/2013 <http://www.npr.org/2013/09/08/220188619/climate-change-leaves-hares-wearing-the-wrong-colors>
- Coverage of 2013 PNAS paper included: ScienceNow (Science magazine), Nature Climate Change, Discover Magazine, Climate Wire, NPR Morning Edition, This Week in PNAS, Today’s Science, Weather Channel, and more
- *Toronto Star*, 9/11/12 (“Climate change conundrum: will Arctic animals’ wardrobes be able to adapt?”)
- *High Country News*, 2/6/12 (“The Color of Bunny”)
- “The Color of Bunny” was also re-published in the “Independent” Newspaper syndicate.
- *Newsweek* magazine, 8/3/09 (“The case of the disappearing rabbit”)
- *National Geographic Kids*, October 2009 (Canada lynx: the comeback cat”)
- UM publications:
  - *Vision Magazine*, 2008 (“Hare today, gone tomorrow?”) and Spring 2000
  - *Montanan Magazine*, Spring 2008. Featured in “Leaders in the Field” story. Also Spr. 2000
- *The Boundary*, Pincher Creek, Alberta, 8/8/08 (“global warming creates an awkward predicament for the snowshoe hare”)
- *New York Times*, 3/10/2009 (“Tools that leave wildlife unbothered widen research horizons”)
- *Science Daily*, 2/24/09 (“Climate change hurting hares: White snowshoe hares can’t hide on brown earth”)
- *High Country News*, 2/16/09 (“Canary in the old growth: the search for an ecosystem’s vital signs”)
- *New York Times*, 5/6/2007 (“Walking on the wild side of a Montana University”)

**CURRICULUM Developed by Others From my Research (Selected, since 2005)**

- Lesson plan based on evolution in our polymorphic hares being developed by the Education Development Center (Oct. 2018).
- Camouflage and Climate Change. Grade 6-8 Teacher Curriculum developed by PEER Outreach Program at Texas A&M University. (Developed 2012)  
[http://peer.tamu.edu/DLC/NSF\\_Resources.asp?ID=1325&type=browse&num=60&terms=&content=allcontent&subject=science&grade=allgrades&query=query&hl=no&count=447&number=60&view=yes](http://peer.tamu.edu/DLC/NSF_Resources.asp?ID=1325&type=browse&num=60&terms=&content=allcontent&subject=science&grade=allgrades&query=query&hl=no&count=447&number=60&view=yes)
- Climate Change as a Selective Force. Natural Selection Lab developed for Introductory Biology Classes at Ohio University, Athens, Ohio. (Developed 10/13).