

Shandra Nicole Frey

Utah State University Cooperative Extension
Biology Department, Southern Utah University
351 West Center, Cedar City, UT 84720
Email: nicki.frey@usu.edu

Current Position: Extension Assistant Professor, January 2012 - present. Utah State University, Department of Wildland Resources, 5230 Old Main Hill, Logan, UT 84322.

Duties include the implementation of Extension Wildlife Assistant Professor programming focusing on Human-Wildlife Conflict Management in southern Utah. This position includes Extension and Education responsibilities. Extension programs include youth education activities, research, and wildlife management planning and coordination activities. Education programs include on-campus teaching, undergraduate mentoring, and graduate student advisement.

I. Education

- **PhD in Wildlife Biology**, Jack H. Berryman Institute, Department of Forest, Range, and Wildlife Science, Utah State University, Logan, UT, 84322. Conferred May 2005.
- **Master's Degree in Wildlife Biology**, Jack H. Berryman Institute, Department of Forest, Range, and Wildlife Science, Utah State University, Logan, UT. 84322. Conferred May 2001.
- **Bachelor's Degree in Wildlife Resources and Management**, West Virginia University, Morgantown, WV. 1992-1996. Cum Laude December 1996.

Areas of Expertise: wildlife ecology, predator-prey relationships, predator management, human-wildlife conflicts, animal behavior, mammalogy

II. Professional Experience

- **Research Assistant Professor, 7/2006 - 12/2011.** Utah State University, Department of Wildland Resources, 5230 Old Main Hill, Logan, UT 84322

Continuation of a post-doc position to implement the Extension Wildlife Specialist program in southern Utah. This position included Extension, Research, and Education responsibilities. Extension programs included youth education

activities, undergraduate research, and wildlife management planning and coordination activities. Research programs included studies on vertebrates, focusing on human-wildlife conflict issues. Education programs included on-campus teaching, undergraduate mentoring, and graduate student advisement. July 1 2006 - December 2011, 50% of the position implemented as the Berryman Institute Continuing Education Coordinator. Additional responsibilities of the Coordinator position included teaching online courses and providing continuing education opportunities through National workshops created for federal employees.

- **Post-doctoral Wildlife Extension Specialist, 10/2004 - 7/2006.** Utah State University, Department of Wildland Resources, 5230 Old Main Hill, Logan, UT 84322.

Design and implementation of Extension wildlife specialist program in southern Utah including facilitating community-based conservation, providing outreach education and assistance concerning wildlife damage management, active involvement in endangered and sensitive species conservation plan development in southern Utah, providing undergraduate research opportunities at Southern Utah University, increasing knowledge of wildlife management via teaching a course on Natural Resource Management at South Utah University, participation in high school science programs, participation in 4-H, and other outreach education opportunities.

- **Contract Consultant. 10/2002-6/2004.** Bio-west Inc., 163 West 1400 North, Logan, Utah, 84321.

Assisted Bio-west Inc. in creating and monitoring shorebird habitat as part of a land mitigation required by the Army Corps of Engineers. Project was located on Chevron Oil property, Salt Lake City.

Research Assistant. 5/1999 - 10/2004. Utah State University, Logan, UT, 84322.

Position held in pursuance of Master's degree and PhD in Wildlife Biology. Research consisted of a) the study of the effectiveness of a mammalian predator removal program to increase ring-necked pheasant populations in Utah, and b) the effect of population reduction on the behavior and interactions of red fox, raccoon and striped skunk at the Bear River Migratory Bird Refuge, Utah.

- **Rare Species Biologist. 6/1998-10/1998.** The Trustee's of Reservations, Vineyard Haven, MA, 02568.

Responsibilities included conducting a habitat analysis of several rare plant species found on Martha's Vineyard and surrounding islands. Additionally,

created a rare species collection of moths found on the islands. Also responsible for analyzing 10 years of nesting recruitment data collected on piping plovers that nested on the islands, as well as monitoring the present nesting colony of piping plovers.

- **Home Teacher.** 1998. Anne Arundel County Board of Education, Annapolis, Maryland
- **Wildlife Intern.** 1997. Kuala Gandah, Malaysia, for The Smithsonian Institution
- **Wildlife Consultant.** 1997. Morgantown, West Virginia
- **Field Technician.** 1996. Morgantown, West Virginia

III. Teaching Experience

- **2015, 2017 BIOL ST 3990: The Predator Paradox – Predator Management in Utah.** Southern Utah University. Fall Semester. 2-credit course. (Note: I serve as adjunct instructor in the SUU Biology Department as part of a Memorandum of Understanding between USU and SUU)
- **2016 BIOL 2500: Environmental Biology.** Fall Semester. 3 credit course. Average student evaluation: 5/5. (Note: I serve as adjunct instructor in the SUU Biology Department as part of a Memorandum of Understanding between USU and SUU)
- **2005 – 2014 NR 3000: Natural Resource Conservation and Management.** Southern Utah University. Spring Semesters. 3-credit course. Average student evaluation 4.53/5. (Note: I serve as adjunct instructor in the SUU Biology Department as part of a Memorandum of Understanding between USU and SUU).
- **2007 - 2011 WILD 4810: Directed Readings in Wildlife Damage Management.** Utah State University Distance Education; Winter, Spring, Summer, and yearlong sections. 2 Credits.
- **2007 - 2011 WILD 4950: Special Topics - Directed Readings in Wildlife Biology.** Utah State University Distance Education; Winter, Spring, Summer, and yearlong sections. 3 Credits.
- **2007 - 2011 WILD 4950: Special Topics - Directed Readings in Vegetation and Landscapes in Wildlife Management.** Utah State University Distance Education; Winter, Spring, Summer, and yearlong sections. 3 Credits.
- **2007, 2009 Mammalogy.** Southern Utah University. 3 Credits. Average student evaluation 4.25/5.
-

IV. Graduate Student Mentorship

A. Major Professor

- **A. Beers.** *2017- present.*
- **A. Franklin.** *2016- present.* Master of Natural Resources*, Utah State University, Logan, UT.
- **C. Wildermuth.** *2013 - present.* Human-Wildlife Conflicts at Bryce Canyon National Park. Master of Science Thesis, Department of Wildland Resources, Utah State University.
- **S. Zanoni.** *2016 - 2017.* Nesting success of Greater sage-grouse hens in altered habitat. Master of Science Thesis, Department of Wildland Resources, Utah State University. Program not completed.
- **H. Hedden.** *2011 - 2017.* Greater sage-grouse movements, habitat use and mortality in Hamlin Valley, Utah. Master of Science Thesis. Projected completion: December 2015.
- **E. Hansen.** *2013 - 2016.* Effects of transmission line construction and operation on Greater sage-grouse habitat use and movements. Master of Science Thesis, Department of Wildland Resources, Utah State University.
- **E. Wightman.** *2013 - 2016.* Effectiveness of the Utah Habitat Credit Exchange on Utah Prairie Dog conservation. Master of Natural Resources*, Utah State University.
- **A. Roadman.** *2012 - 2014.* Successful relocation of ringtails (*Bassariscus astutus*) using an adaptive resource management strategy. Master of Science Thesis, Utah State University, Logan, UT.
- **C. Burnett.** *2011 - 2013.* Modeling Habitat Use of a Fringe Greater Sage-Grouse Population at Multiple Spatial Scales. Master of Science Thesis, Utah State University, Logan, UT.
- **R. Curtis.** *2009 - 2012.* Factors influencing the successful relocation of Utah Prairie Dogs. Master of Science Thesis, Utah State University, Logan, UT.
- **J. Dinkins.** *2009 - 2012.* (Co-advisor) Impact of predator removal and human activities on Greater sage-grouse nest success. Dissertation, Utah State University, Logan, UT.

- **L. Mastro.** 2005 - 2007. (Co-advisor) Factors affecting deer vehicle collisions. Master of Science Thesis, Utah State University, Logan, UT.
- **B. Palmer.** 2005 - 2007. (Co-advisor) Change in predator communities in Utah's summer rangelands. Master of Science Thesis, Utah State University, Logan, UT.

B. Advisement Committee

- **K. Shedden.** *In Progress.* Master of Natural Resources*, Utah State University, Logan, UT.
- **P. Jackson.** *In progress.* Effects of Resource Availability on Coyote (*Canis latrans*) Abundance, Carrying Capacity, Home Range Size, and Microhabitat Space Use in central Nevada. PhD. Utah State University, Logan, UT.
- **R. Boswell.** *Completed 2017.* Master of Natural Resources*, Utah State University, Logan, UT.
- **L. Peebles.** Completed 2015. Evaluation of Common Raven Removal Efforts across Southwestern Wyoming and the Potential Implications of Changing Raven Densities on Greater Sage-Grouse Populations. Master of Science Thesis, Utah State University, Logan, UT.
- **K. Kerr.** 2015. An Update to Martin State Airport's Wildlife Hazard Management Plan. Master of Natural Resources*, Utah State University, Logan, UT.
- **S. Mabray.** 2014. The Impact of Raven Control on Greater sage-grouse recruitment. Master of Science Thesis, Utah State University, Logan, UT.
- **Gary Bezzant.** 2012. Instances of Conflict and Cooperation: An Exploration into the Role of Competition Between USDA-Wildlife Services and Wildlife Control Operators. Master of Science Thesis, Utah State University, Logan, UT.

*The Masters of Natural Resources is an online non-thesis degree offered through the College of Natural Resources, Utah State University.

V. Undergraduate Student Mentorship

- *USU Extension Internship.* 2018. TBD
- *Quinney College of Natural Resources Intern.* Summer 2017. Ethan Hammer selected to work at Cedar Breaks National Park to assist with wildlife inventory,

visitor education, and other programs as needed. His completed project resulted in his applying for an undergraduate research project, which will start May 2018.

- *USU Extension Internship*. Fall 2015. Levi Price, a student at Southern Utah University assisted the delivery of the Wildlife Research Education Network program, assisted with writing newspaper articles and developed and delivered the Wild Adventures afterschool program.
- *Wildlife Research Intern*. 2014-2015. Strategies to managing Piute ground squirrels and pocket gophers. Undergraduate student at Southern Utah University assisted with an Extension research project designed to determine more effective methods to manage ground squirrel populations and a study to determine more effective methods to manage pocket gopher populations.
- *Quinney College of Natural Resources Intern*. Summer 2013. Student selected to work at Bryce Canyon National Park to assist with wildlife inventory, visitor education, ringtail distribution study, and other programs as needed.
- *Wildlife Research Intern*. 2013 – present. Greater sage-grouse movement patterns in Southern Utah. Supported 1 undergraduate technician/apprentice to assist in data collection and analysis on Greater sage-grouse.
- *Wildlife Research Intern*. 2013-2014. Comparison of methods to control pocket gophers in alfalfa. Supported 1 undergraduate technician/apprentice to assist in data collection and analysis.
- *USU Extension Internship*. 2013. An undergraduate student at Southern Utah University assisted the delivery of the Wildlife Research Education Network program, assisted with writing newspaper articles and developed and delivered the Wild Adventures afterschool program.
- *A comparison of two methods to reduce pocket gopher populations*. 2009. Supported 1 undergraduate research project. This project resulted in a publication for the student in the Journal of Extension.
- *USU Extension internship*. 2008. An undergraduate student at Southern Utah University assisted the delivery of the Wildlife Habitat Evaluation Program.
- *Wildlife Research Intern*. 2005-2011. Impacts of habitat treatments on Greater sage-grouse in Alton, Utah. Supported 5 undergraduate research projects, 3 undergraduate GIS Certificate projects, 1 “Western Alliance to Expand Student Opportunities” funded undergraduate, and 3 SUU undergraduate employment opportunities. Resulted in 1 publication and 1 Utah State University Extension Fact Sheet.

VI. Education Programs (Outreach Education)

- **Wildlife Adventures.** Fall 2015 - present. An after school program held in cooperation with Gateway Preparatory Academy and Iron County elementary schools. This hands-on 6 week class for middle-school aged students presents information on wildlife ecology and behavior by exploring subjects such as form and function, diet, and habitat use. We anticipate repeating the class each fall.
- **Wildlife Research Education Network.** 2013 – present. I have created and implemented this high-school program to introduce students to applied ecology and wildlife management. To date, the program is implemented in 2 high schools in southern Utah. Teachers work with me to determine the length of the program, from 2-6 days. The course involves in-class presentations and activities coupled with using and collecting data to step through the Scientific Method. The studies created by the students may be and have been used for Future Farmers of America and Sterling Scholar competitions. To date, I have conducted this program with more than 200 high school students. Student evaluations average 4.6/5. Website: <<https://extension.usu.edu/wildlifeconflicts/htm/wren>>

In 2017, we began working with Cedar High School to conduct research on pollinating insects in a central Cedar City park. Students are presented with a lecture on pollinating insects. Then, they conduct 1-2 surveys in the fall and 2 surveys in the spring to count and identify pollinating insects. They post their photos on <southernutahbees.Weebly.com>. Any sighting of bumble bees are photographed, identified and reported to bumblebeewatch.org. To date, this group has created 2 new records of bumble bee species in southern Utah.

- **Color Country Natural Resource Camp.** 2009 – Present. A high-school after-school program for southern Utah students interested in the natural resource sciences. Students camp for 5 days, during which they are instructed in Wildlife Management, Vegetation Management, Soil Sciences, Aquatics, Recreation Management, Archeology, and experience various recreational opportunities. As an instructor, I teach a 3-hour hands-on course in Wildlife Management each day. Additionally, I teach recreational activities including leadership skills, mountain biking and dance. My student rating of the Wildlife Investigation is an 8.9/10. Students have demonstrated a 20% increase in knowledge.
- **Invitational Courses** - I am periodically invited to assist in after-school programs, 4-H camps, Girls Scouts and Boy Scouts, and college course field trips, teaching subjects such as animal identification, small identification using owl pellets, endangered species distribution, small mammal trapping, and many others.

Iron County Water Fair. 2015. This is an all-day event where 4th grade students from schools in Iron County visit stations to learn about various

important influences of water. There were 454 students in 2015. I presented a lesson plan developed to teach students about water quality. Each teacher evaluated the presentation. The average evaluation for my presentation was 4.8/5.

Natural Resources Field Day. Even Years: 2006, 2008, 2010, 2012, 2014, 2016. Utah State University Garfield County Extension, Upper Sevier Watershed Coordination Committee, and other partners organize this event. It is an all-day event where elementary students from at least 5 schools visit stations to learn about various natural resources and their management in southern Utah. There are roughly 500 students annually. In participating, I create a hands-on lesson plan that I implement for each of 8-10 student groups. Usually, this lesson plan focuses on Greater sage-grouse ecology and management.

- **Wildlife Capture and Immobilization.** August 2012. Collaborated with Dr. Eric Gese, also at Utah State University, to organize a 2-day training course for graduate students and USU faculty that require animal handling experience or training for their research. The course consisted of 1 day of classwork and 1 day in the field. The course evaluation respondents (26 of 28 participants) indicated that the classwork increased their knowledge (3.7/5), as did the in-field experience (3.2/5).
- **Envirothon.** 2009 – 2014. A national high-school program designed to teach students elements of Soil Science, Aquatics, Forestry, Wildlife, and Current Events. The Utah Envirothon is hosted by the Utah Area Conservation Districts and is usually conducted in-class by interested Biology teachers. As an instructor, I assisted in annual workshops for teachers, and annually conducted the Wildlife portion of the Envirothon test.
- **Wildlife Habitat Evaluation Program.** 2005-2011. A high-school program administered through Utah State University Extension to expose students to basic and in-depth concepts of Wildlife Management. My participation includes running the state program (i.e. training high school teachers to coach teams, organizing the state contest). Utah placed second in the National competition in 2007.
- **National Wildlife Habitat Evaluation Program Committee.** 2005-2010. Committee members met for 1 week during each summer to administer the National contest. During my tenure on the committee, we also met mid-year to rewrite the national manual and change portions of the contest to reflect current educational goals.

VII. Guest Lectures and Extension Outreach Presentations

- **S. N. Frey.** December 2017. *PSGMA Public Survey: Knowledge and Perception of Habitat Treatments for Sage-grouse.* Color Country Local Working Group and

- Southwest Desert Local Working Group meetings, Iron and Garfield Counties, Utah.
- **S. N. Frey.** October, 2017. *Wildlife Activities in Extension.* Southern Region Extension Bi-Annual Conference. Juab County Extension Office, Nephi, Utah.
 - **S. N. Frey.** April 2015, 2017. *Greater sage-grouse in Southern Utah.* Natural Resources 3000, College of Science and Engineering, Southern Utah University, Cedar City, UT.
 - **S. N. Frey.** February 2017. *Enchanting Southern Utah: The science behind the magic.* Southern Utah Orchestra Creative Legacy Concert Debut, Cedar City, Utah.
 - **S. N. Frey,** and M. Nelsen. January 2017. *Fine tuning pocket gopher control in alfalfa.* Beaver County Crop School, Utah State University Extension, Minersville, Utah.
 - **S. N. Frey.** January 2015, 2016, 2017. *Identifying and managing common garden wildlife pests.* Utah Master Gardener Program, Cedar City, UT.
 -
 - **S. N. Frey,** and D. Monroe. December 2016. *Movements and habitat associations of Greater sage-grouse in the Panguitch SGMA.* Bureau of Land Management, Kanab Field Office, Open House, Kanab, Utah.
 -
 - Nelson, R., and **Frey, S. N.** January 2016. *Comparing different methods of controlling Townsend Ground Squirrels in irrigated crop ground.* Ground Squirrel Control Workshop, Utah State University Extension, Minersville, Utah.
 -
 - **S. N. Frey.** January 2016. *The biology behind the management of ground squirrels.* Beaver County Squirrel Management Workshop, Utah State University Extension, Minersville, Utah.
 - **S. N. Frey,** and M. Nelsen. August 2015. Fine tuning pocket gopher control in alfalfa. Extension Wildlife Specialists, Agents, and Associates Workshop, Cedar City, Utah.
 - **S. N. Frey.** November 2014. Moderator. *Session: Sagebrush and Sage-grouse Landscape Management - Minimums and Maximums.* International Sage-grouse Forum, Salt Lake City, UT.
 - **S. N. Frey.** November 2014. Moderator. *Session: New Breakthroughs in Fire and Invasive Weed Management.* International Sage-grouse Forum, Salt Lake City, UT.

- **S. N. Frey.** June 2014. *Reasons to Love the Utah Prairie Dog.* Keystone Speaker, The Bryce Canyon Utah Prairie Dog Days, Bryce Canyon National Park, Utah.
- **S. N. Frey.** February 2014. *Utah Plan Topic 1: Habitat Management Strategies.* Utah Greater sage-grouse Summit, Salt Lake City, Utah
- H. Godding and **S. N. Frey.** 2013. *Living Safely with Wildlife.* Bryce Canyon National Park Evening Lecture Series, Bryce Canyon National Park, UT.
- Roadman, A.* and **S. N. Frey.** August 2013. *Management and natural history of ringtails (Bassariscus astutus) in Zion National Park.* Springdale Library Lecture Series, Springdale, Utah.
- Roadman, A.* and **S. N. Frey.** August 2013. *Management and natural history of ringtails (Bassariscus astutus) in Zion National Park.* Zion National Park employee brown-bag lunch series, Zion, Utah.
- **Frey, N.** April 2013. *Basics of identifying wildlife.* Utah Envirothon Workshop, Richfield, Utah.
- Brown, N and **N. Frey.** February 2013. *Explanation of population structure for Utah Prairie Dog recovery.* Utah Prairie Dog Recovery Implementation Program, Cedar City, Utah.
- Black, T. and **N. Frey.** October 2012. *Basics of Wildlife Identification.* Envirothon Fall Workshop, Thanksgiving Point, Utah.
- Burnett, A.* and **N. Frey.** October 2012. *Greater Sage-Grouse Crucial Habitat, Movement, and Survival in a Southwestern Utah Fringe Population.* Southwest Desert Adaptive Resource Management Open House, Minersville, Utah.
- McPherron, H.* and **N. Frey.** October 2012. *Hamlin Valley Sage-grouse and the Impact of Fences Research Project.* Southwest Desert Adaptive Resource Management Open House, Minersville, Utah.
- **Frey, N.** and T. Messmer. September 2012. *Benefits of biomass reduction for wildlife species.* Biomass Field Days, Beaver, Utah.
- **Frey, N.** June 2012. *Why we love the under - (Utah prairie) dog.* Keystone Speaker, The Bryce Canyon Utah Prairie Dog Days, Bryce Canyon National Park, Utah.
- **Frey, N.,** T. Black and T. Messmer. June 2012. *Status of the Sage-grouse local working groups.* County Commission report to Iron, Beaver, and Garfield counties.

- **Frey, N.** February 2012. *Opposition to Opportunity: a prairie dog tail.* College of Natural Resources, Wildland Resources Department Seminar, Utah State University, Logan, Utah.
- **Frey, N.** January 2012. *What makes it a habitat?* Envirothon Training Workshop, Thanksgiving Point, Utah.
- **Frey, N.** January 2011, 2012. *Greater sage-grouse in southern Utah.* The St. George Bird Festival, St. George, Utah.
- **Frey, N.** February 2011. *How we use what we learn in college.* Southern Utah University Biology Seminar, Cedar City, Utah.
- **Frey, N.** March 2010. *Ground squirrel biology.* USU Extension Ground Squirrel management workshop, Minersville, Utah.
- **Frey, N.** September 2009. *The Jack H. Berryman Institute, Continuing Education.* The USDA/APHIS/WS Regional Meeting, Raleigh, North Carolina.
- **Frey, N.** March 2008. *Habitat use of southern Greater Sage-grouse.* Southern Utah University Biology Seminar, Cedar City, Utah.
- **Frey, N.** September 2007. *The Value of Utah Prairie Dogs.* Utah Prairie Dog Summit, Sandy, Utah.
- **Frey, N.** September 2006. *Roads, Corridors and the Edge Effect.* Southern Utah University Biology Seminar, Cedar City, Utah.
- **Frey, N.** September 2006. *Waterfowl Populations of the Great Salt Lake Ecosystem.* Great Salt Lake Symposium, Brigham City, Utah.
- **Frey, N.** June 2005. *Unsilently Light: Nocturnal animals living in a world without darkness.* Bryce Canyon Astronomy Festival, Bryce Canyon National Park, Utah.

* First author was my undergraduate or graduate student.

VIII. Presentations at Professional Meetings

- **S. N. Frey.** January 2017. The effect of riparian habitat restoration on wild turkey habitat use and recruitment in the “Central Utah Forests”. The National Wild Turkey Federation Technical Committee Meeting, Nashville, Tennessee.

- **S. N. Frey.** January 2017. Wildlife and 'Wild' horses of the Southwest. Plenary Presentation, Society for Range Management National Conference, St. George, Utah.
- **S. N. Frey.** March 2016. Fine tuning pocket gopher control in alfalfa. Vertebrate Pest Conference, Vertebrate Pest Conference, Newport Beach, California. March 2016.
- E. Hansen*, and **S. N. Frey.** October 2015. Influence of transmission line construction on winter sage-grouse habitat use in southern Utah. The Wildlife Society Annual Conference, Winnipeg, Manitoba, Canada.
- Messmer, T. A., Belton, L., Dahlgren, D., **Frey, S. N.** September 2015. The role of local working groups in Tetraonid conservation: sage lessons from Sage-Grouse. International Grouse Symposium, Icelandic Natural History Society, Reykjavik, Iceland.
- A. Nielson, T. Anderson, **S. N. Frey**, L. Mauger, and A. Roadman. April 2015. *Population genetics of ringtails (Bassariscus astutus) in southern Utah.* Southern Utah University Festival of Excellence, Cedar City, Utah.
- D. Monroe** and **N. Frey.** December 2014. *Greater sage-grouse movement patterns in Southern Utah.* Southern Utah University Student Research Symposium, Cedar City, Utah.
- **N. Frey** and E. Wightman. September 2014. *Opposition to Opportunity: Managing prairie dogs in southern Utah.* 8th International Wildlife Ranching Symposium - Congress for Wildlife and Livelihoods on Private and Communal Lands, Estes Park, Colorado. Accessed at <
<http://events.warnercnr.colostate.edu/iwmc-2014/presentation-poster-materials/>>
- **N. Frey.** June 2014. *Connectivity in a fragmented landscape.* 29th Western Agencies Greater and Sharp-tailed grouse workshop, Elko, Nevada.
- **N. Frey.** March 2014. *WREN Successes and Stumbles.* USU Extension Annual Conference, Logan, Utah.
- Roadman, A.* and **N. Frey.** October 2013. *Using dermatoglyphics for non-invasive mark-recapture abundance estimates of ringtails in Zion National Park, Utah.* The Wildlife Society Annual Conference, Milwaukee, Wisconsin.
- Roadman, A.*, and **N. Frey.** August 2013. *Using dermatoglyphics for non-invasive mark-recapture abundance estimates of ringtails in Zion National Park, Utah.* The Central, Mountain and Plains Section of the Wildlife Society Annual Conference, Cedar City, Utah.

- Roadman, A.* and **N. Frey**. October 2012. *Ringtail relocation using an adaptive resource management strategy in Zion National Park, UT*. The Wildlife Society Annual Conference, Portland, Oregon.
- Burnett, A*, and **N. Frey**. October 2012. *Unique Habitat Use in a Greater Sage-Grouse Fringe Population*. The Wildlife Society Annual Conference, Portland, Oregon.
- McPherron, H.* and **N. Frey**. October 2012. *The Effect of Fences on Greater Sage-Grouse Within Two Small Populations in Southwestern Utah*. The Wildlife Society Annual Conference, Portland, Oregon.
- Curtis, R.* and **N. Frey**. August 2012. *Factors influencing the successful relocation of Utah prairie dogs*. Central Mountain and Plains Section of the Wildlife Society Annual Meeting, Bismarck, North Dakota.
- H. McPherron* and **N. Frey**. August 2012. *The effect of fences on Greater sage-grouse within two small populations in Southwestern Utah*. Central, Mountain, and Plains Section of the Wildlife Society Annual Conference, Bismarck, North Dakota.
- Burnett, A.* and **N. Frey**. June 2012. *Greater sage-grouse: Crucial habitat, movement, and survival in a Southwestern Utah fringe population*. Western Association of Fish and Wildlife Agencies Greater and sharp-tailed grouse conference, Steamboat Springs, Colorado.
- Curtis, R.* and **N. Frey**. March 2012. *Factors influencing the successful relocation of Utah prairie dogs*. Annual Utah Chapter of The Wildlife Society Conference, Springdale, Utah.
- **Frey, N.** and T. Messmer. October 2010. *Opposition to opportunity: a prairie dog tail*. The National Wildlife Society Annual Conference, Park City, Utah.
- **Frey, N.** June 2010. *Living on the Edge: Greater sage grouse of southern Utah*. The WAFWA Greater and Sharp-tailed Grouse conference, Twin Falls, Idaho.
- **Frey, N.** September 2008. *Effect of habitat restoration on sage-grouse land use*. The Wildlife Society Annual Conference, Miami, Florida.
- R. Curtis* and **N. Frey**. March 2007. *Habitat Use, Migration, and Mortality of Greater Sage-grouse in Alton, Utah*. Utah chapter of The Wildlife Society annual conference, Moab, Utah.
- **Frey, N.** and D. Elmore. March 2006. *Utah Prairie Dogs: Creative Strategies to De-list a Problematic Endangered Species*. 22nd Vertebrate Pest Conference, Berkeley, California.

- **Frey, N.** March 2006. *Cooperating to Manage Greater Sage-grouse*. Utah Chapter of The Wildlife Society annual conference, Moab, Utah.
- **Frey, N.** May 2005. *Habitat Use by Meso-predators in a Corridor Environment*. Berryman Institute Symposium, Logan, Utah.
- **Frey, N.** September 2004. *Influence of a Linear Environment on Mammalian Predator Habitat and Space use*. The Wildlife Society Annual Conference, Calgary, Ontario.
- **Frey, N.** September 2003. *Space use by Predators on a Managed Waterfowl Refuge*. The Wildlife Society annual conference. Burlington, Vermont.
- **Frey, N.** March 2003. *Effects of Waterfowl Hunting on Raccoon Movements*. Utah chapter of The Wildlife Society annual conference. Provo, Utah.
- **Frey, N.** March 2002. *Correlates of Hunter Satisfaction*. Utah chapter of The Wildlife Society annual conference, Cedar City, Utah.

* First author was my graduate student

** First author was my undergraduate student

IX. Education and Outreach Materials

A. Peer-Reviewed Extension Materials

- Hammer*, E. and **S. Frey**. 2017. The American Pika in Southern Utah. Utah State University Extension. https://digitalcommons.usu.edu/extension_curall/1803/
- **Frey, S.**, Nelson, R. 2016. Comparison of Three Traps Used for Pocket Gopher Management. Logan: Utah State University Extension. http://digitalcommons.usu.edu/extension_curall/1591/
- **Frey, S.** 2016. Cottontails and Jackrabbits. Logan: Utah State University Extension. http://digitalcommons.usu.edu/extension_curall/1592/
- **Frey, S.**, and Ortego, M. 2016. Management of Wild Turkeys in Utah. Logan: Utah State University Extension. http://digitalcommons.usu.edu/extension_curall/793/
- **Frey, S. N.** 2015. *Rabies in Utah*. Utah State University Fact Sheet. Peer-reviewed. Accessed at: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1762&context=extension_curall

- **Frey, S. N.** 2015. *Finding Bambi – What to do with Mule Deer Fawns*. Utah State University Fact Sheet. Peer-reviewed. Accessed at: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1761&context=extension_curall>
- **Frey, S. N.** 2015. *Bats and Rabies in Utah*. Utah State University Fact Sheet. Peer-reviewed. Accessed at: http://digitalcommons.usu.edu/extension_curall/748/>.
- **Frey, S. N.**, and Ortego, M. 2015. *Managing rock squirrels in Utah*. Utah State University Fact Sheet. Peer-reviewed. Accessed at: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1743&context=extension_curall>
- **Frey, S. N.** 2015. *Managing Utah Prairie Dogs on private lands*. Utah State University Fact Sheet. Peer-reviewed. Accessed at: https://extension.usu.edu/files/publications/publication/NR_Wildlife_2015-01pr.pdf>
- **Frey, S. N.** 2015. *Translating the Endangered Species Act*. Utah State University Fact Sheet. Peer-reviewed. Accessed at: http://digitalcommons.usu.edu/extension_curall/701/>
- **Frey, S. N.**, and H. Godding*. 2013. *Ringtails*. Utah State University Fact Sheet. Peer-reviewed. Accessed at: http://extension.usu.edu/files/publications/publication/NR_Wildlife_2013-02pr.pdf>
- **Frey, S. N.**, and H. Heaton. 2013. *Using plants to attract hummingbirds to your yard*. Peer-reviewed. Utah State University Fact Sheet. Accessed at: http://extension.usu.edu/files/publications/publication/NR_Wildlife_2013-03pr.pdf>
- **Frey, S. N.**, R. Curtis, and K. Heaton. 2013. *Home Range and Movements of Greater Sage-grouse in its Southernmost Distribution*. Peer-reviewed. Utah State University Fact Sheet. Accessed at: http://extension.usu.edu/files/publications/publication/NR_Wildlife_2013-01pr.pdf>
- **Frey, N.** 2012. Editor, *Proceedings of the 14th Wildlife Damage Management Conference*. Peer-reviewed. The Wildlife Society, Bethesda, Maryland.
- **Frey, N.** 2010. *National Wildlife Habitat Evaluation Program Manual*, in D. Elmore and C. Harper (Ed.). (pp. 33-46, 64-68, 80-125, 131-152). Accessed at www.whep.org

B. Websites and Social Media

- Human-Wildlife Interactions. 2017. Facebook
- Hwi_wildlife_utah. 2017. Instagram
- Hwi_wildlife_utah. 2017. Twitter
- Southern Utah Bees. <Sutahbees.weebly.com>. Developed in 2017 as a webpage for students at Cedar High School to upload photos of pollinators.
- Utah State University Extension Human-Wildlife Conflicts <extension.usu.edu/wildlifeconflicts> Created June 2013. Recreated as of January 2015; over 4235 “viewed” visits (those that exclude robots, worms, etc.).
- Jack H. Berryman Institute. <http://www.berrymaninstitute.org>. Organized the design and development of the website. Curated the website 2006 – 2010.
-

C. Video and Radio

- **Frey, S. N.** February 2015. Southern Utah Forum, KSUB Talk Radio. 1 hour live segment on Greater sage-grouse ecology and management in southern Utah.
- **Frey, S. N.** and C. J. Schaible. 2013. *How to reduce deer damage to your ornamentals*. Utah State University Extension Video. Accessed at <http://www.youtube.com/watch?v=j3crkdR3Pkc>

D. Newsletters and Newspaper Articles

- Frey, S. N., and M. Ortego. 2015. **Mourning doves, not turtle doves, for Christmas in Utah**. The Spectrum. December 16, 2015.
- Frey, S. N., and M. Ortego. 2015. **The status of wild turkeys in Utah**. Iron County Today. November 25, 2015.
- Frey, S. N. 2015. **Managing rock squirrels in Southern Utah**. Iron County Today. June 24, 2105.
- Frey, S. N. 2015. **The truth about bats and rabies in the Southwest**. The Spectrum. June 17, 2015.
- Frey, S. N. 2015. **What is a vole and how can you keep it from damaging your yard?** Iron County Today. March 4, 2015.

- Frey, S. N. 2014. **High-school students win with wildlife education.** Iron County Today. May 7, 2014.
- Frey, S. N. 2014. **High-school students win with wildlife education.** The Communicator 10(2): 4.
- Frey, S. N. 2014. **Wildlife fun in the winter.** Iron County Today. January 28, 2014.
- Frey, S. N. 2013. **Ask the Specialist: Is it safe to be a hiker during the hunting season?** Iron County Today. November 5, 2013.
- Frey, S. N. 2013. **New research project may provide new information on sage-grouse and tall structures.** The Communicator 9(4):4.
- Frey, S. N. 2013. **Question and Answer: Creating backyard wildlife habitats.** Iron County Today. September 16, 2013.
- Frey, S. N. 2013. **Question and Answer: Preventing damage to your garden from rabbits.** Iron County Today. August 21, 2013.
- Frey, S. N. 2011. **Color Country annual field trip a success.** The Communicator 7(4): 3.
- Frey, S. N. 2011. **Meet the graduate students!** The Communicator 7 (2):4.

X. Peer-Reviewed Publications

- Belton, L., **Frey, S.**, and D. Dahlgren. (2017). Participatory Research in Sage-grouse Local Working Groups: Case Studies from Utah. *Human-Wildlife Interactions* 11: article 3. <https://digitalcommons.usu.edu/hwi/vol11/iss3/7>
- Dahlgren, D., Messmer, T. A., Crabb, B., Larsen, R., Black, T., **Frey, S.**, Thacker, E., Baxter, R., Robinson, J. (2016). Seasonal movements of greater sage-grouse populations in Utah: Implications for species conservation. *Wildlife Society Bulletin*, 40, 288 - 300.
- Dinkins**, J., Conover, M., Kirol, C., Beck, J., **Frey, S.** (2016). Effects of common raven and coyote removal and temporal variation in climate on greater sage-grouse nesting success. *Biological Conservation*, 202, 202-211. <http://www.journals.elsevier.com/biological-conservation/>
- Hansen*, E., Stewart*, C. B., **Frey, S.** (2016). Influence of transmission line construction on winter sage-grouse habitat use in Southern Utah. *Human Wildlife*

Interactions, 10, 169-187. <http://www.berrymaninstitute.org/htm/human-wildlife-interactions-journal/fall-2016>

- Petersen, S. L., Nicholes, B. K., **Frey, S.**, Heaton, K., Eggett, D. L. (2016). Response of greater sage-grouse to surface coal mining and habitat conservation in association with the mine. *Human--Wildlife Interactions*, 10(2), 205-16.
<http://www.berrymaninstitute.org/files/uploads/pdf/journal/fall2016/PetersenEtal.pdf>
- Dinkins**, J., Conover, M. R., Kirol, C. P., Beck, J. L., **Frey, S.** 2014. Greater sage-grouse (*Centrocercus urophasianus*) select habitat based on avian predators, landscape composition, and anthropogenic features. *Condor: Ornithological Applications*.
- Dinkins**, J. B., M. R. Conover, C. P. Kirol, J. L. Beck, and **S. N. Frey**. 2014. *Greater sage-grouse hen survival: effects of raptors, anthropogenic and landscape features, and hen behavior*. Canadian Journal of Zoology 92:319 -351.
- **Frey, S. N.** and S. Haas. 2014. *The Uninvited guest*. Crossroads in Science 2:43- 50.
- Curtis*, R. **S. N. Frey** and N. Brown. 2014. *The Effect of Coterie Relocation on the Survival and Behavior of Utah Prairie Dogs*. Journal of Wildlife Management 78:1069-1077.
- **Frey, S. N.**, R. Curtis, and K. Heaton. 2013. *The effect of vegetation treatments on Greater sage-grouse habitat use in southern Utah*. Human-Wildlife Interactions 7: 154-166.
- Curtis*, R. and **S. N. Frey**. 2013. *Effects of vegetation differences in relocated Utah prairie dog release sites*. Natural Science 5: 5A. Accessed at www.scirp.org/journal/ns/
- **Frey, S. N.**, and J. R. Wilks. 2012. *Faculty-and-Farmer Collaboration, A Case Study: Comparison of 0.5% Strychnine Treated Gopher Bait and Road Flare Fumigation Gopher Control*. Journal of Extension. Accessed at www.joe.org/joe/2012october/rb9.php.
- Nelson, S., **N. Frey**, and T. Messmer. 2012. *Using IPM techniques to improve cooperators effectiveness to mitigate damage caused by Townsend ground squirrels*. Journal of National Association of County Agricultural Agents 5(1). Accessed at www.nacaa.com/journal/index.php?jid=128
- **Frey, S. N.**, and M. R. Conover. 2010. *Effects of waterfowl hunting on raccoon movements*. Human Wildlife Conflicts Journal 4: 94-102.

- **Frey, S. N.**, and M. R. Conover. 2010. *Influence of population reduction on predator home range size and overlap*. Journal of Wildlife Management 71:303-309.
- Mastro, L. L.**, M. R. Conover, and **S. N. Frey**. 2010. *Factors Influencing a Motorist's Ability to Detect Deer at Night*. Landscape and Urban Planning 94:250-254.
- Palmer*, B. C., M. R. Conover, **S. N. Frey**. 2010. *Replication of a 1970s Study on Sheep Losses to Predators on Utah's Summer Rangelands*. Journal of Rangeland Ecology and Management 32:70-72.
- Mastro**, L., M. R. Conover, and **S. N. Frey**. 2008. *Deer-vehicle collision prevention techniques*. Human-Wildlife Conflicts 2: 80-92.
- **Frey, S. N.**, and M. R. Conover. 2007. *The influence of population reduction on predator home range size and spatial overlap*. Journal of Wildlife Management 71:303-309.
- **Frey, S. N.**, M. R. Conover, and G. Cook. 2007. *Successful use of neck snares to live-capture red foxes*. Human-Wildlife Conflicts 1:21-23.
- **Frey, S. N.**, and M. R. Conover. 2006. *Habitat Use by Meso-Predators in a Corridor Environment*. Journal of Wildlife Management 70: 1111-1118.
- **Frey, S. N.** 2004. *Integration of Wildlife Damage Management into the College Curriculum*. Proceedings of the 10th Wildlife Damage Management Conference, The Wildlife Society, Bethesda, Maryland.
- **Frey, S. N.**, S. Majors, M. R. Conover, T. A. Messmer, D. L. Mitchell. 2003. *Effect of Predator Control on Ring-necked pheasant populations*. Wildlife Society Bulletin 31:727-735.
- **Frey, S. N.**, M.R. Conover, J. S. Borgo, T. A. Messmer. 2003. *Factors influencing pheasant hunter success and hunter satisfaction*. Human Dimensions of Wildlife 8:277-286.
- Seng, P. T., D. J. Case, M. Conover, D. J. Decker, J. Enck, **S. N. Frey**, M. Z. Stange, B. Staton, R. Stedman, C. Thomas, D. Thorne. 2001. *Contributions of Hunting to North American Society and Culture*. Transactions of the North American Wildlife and Natural Resources Conference 66:202-231.

* First author was my graduate student

** First author was a co-advised graduate student

XI. Other Works

- **Frey, S. N.** 2005. *Habitat use and movements of predators on a managed waterfowl refuge*. Dissertation. Utah State University, Logan, Utah.
- **Frey, S. N.** 2001. *Effect of predator removal on ring-necked pheasant populations in Utah*. MS Thesis. Utah State University, Logan, Utah.

XII. Internal Grants

- **Wildlife Education Intern.** Principal Investigator. Utah State University Extension. \$6,000. January 1, 2018 - June 30, 2018
- **Wildlife Education Intern.** Principal Investigator. Utah State University Extension. \$10,000. July 1, 2016 - June 30, 2017
- **Controlling Ground Squirrels.** Co-Principal Investigator. IPM/SARE Extension, Utah State University. \$10,000. February 1, 2016 - January 31, 2017.
- **Wildlife Education Intern.** Principal Investigator. Utah State University Extension Internships. \$10,000. July 2015 – June 2016.
- **Comparing Different Methods of Controlling Townsend’s Ground Squirrels in Irrigated Crop Ground.** Co-Principal Investigator. Utah State University Extension Integrated Pest Management Grant. \$9,126.80. July 2014 – June 2015.
- **Evaluating the Effectiveness of the Color Country Natural Resource Camp.** Principal Investigator. Utah State University Grants Program 2014-2105. \$9,966.04. 7/1/2014 – 6/30/2015.
- **Comparison of methods to control pocket gophers in alfalfa, Year 2.** Co-principal investigator. Utah State University Extension Grants Program 2014-2015. \$5,142.68. 7/1/2014 – 6/30/2015.
- **Wildlife Research Education Network.** Principal Investigator. Utah State University Extension Internship. \$5,000. 7/1/2013 – 6/30/2014.
- **Damage management of ringtails in southern Utah.** Principal Investigator. Utah State University Extension mini-grant. \$9,266. 7/1/2013 – 6/30/2014.

- **Comparison of methods to control pocket gophers in alfalfa.** Co-principal investigator. Utah State University mini-grant. \$6,743. 7/1/2013 – 6/30/2014.
- **Wildlife Education Programs Intern.** Principal Investigator. USU Extension Grants Program. \$10,000. 7/1/2012 – 6/30/2013.
- **Extension Undergraduate Internship.** Principal Investigator. Utah State University Cooperative Extension. \$3,000. 7/1/2008 – 6/30/2009.

XIII. External Grants and Contracts

- **The Response of Sagebrush Obligate and Near Obligate Species.** October 2017 – September 30, 2021.
- **The Effect of Riparian Habitat Restoration on Wild Turkeys.** Principal Investigator. Utah Division of Wildlife Resources. \$37,900. March 2017 – June 2019.
- **Cave and Hamlin Valley Sage-Grouse Year 2.** Principal Investigator. Nevada Division of Wildlife. \$40,676.47. January 1, 2017 -December 2017.
- **Greater Sage-grouse in Southern Utah.** Principal Investigator. Bureau of Land Management. \$80,000. September 2016 – September 2021.
- **Cave and Hamlin Valley Sage-Grouse.** Principal Investigator Year 1. Nevada Division of Wildlife. \$30,000. October 2015-December 2016.
- **Southern Utah Sage-grouse Monitoring. Year 3.** Bureau of Land Management. \$107,000. March 1, 2016 - September 30, 2017.
- **Southern Utah Sage-grouse Monitoring. Year 2.** Bureau of Land Management. \$159,291. March 1, 2015 - September 30, 2017).
- **Using a Spot-Treatment Method to Control Townsend's Ground Squirrels (*Spermophilus townsendii mollis*) in Irrigated Crop Ground.** Co-Principal Investigator. \$9,127. July 2016 - June 2017.
- **Alton Coal Development Sage-grouse Monitoring.** Principal Investigator. Alton Coal Development. \$40,236. May 2016 – December 2021.
- **South Canyon Limestone Project Monitoring.** Principal Investigator. Watershed Restoration Initiative, State of Utah. \$67,000. 9/1/2015 – 9/30/2016.

- **Protecting visitor experience, health, and historic structures via wildlife exclusion of Bryce Canyon National Park. Year 3.** Principal Investigator. National Park Service. \$16,167. 7/1/2015 – 6/30/2016.
- **Dog Valley Greater-sage Grouse.** Principal Investigator. Watershed Restoration Initiative. \$40,000. 7/1/2015 – 6/30/2017.
- **Alton Coal Development Grouse.** Principal Investigator. Alton Coal Development, LLC. \$23,543.00. 7/1/14 – 6/30/16.
- **Protecting visitor experience, health, and historic structures via wildlife exclusion of Bryce Canyon National Park. Year 2.** Principal Investigator. National Park Service. \$24,020. 7/1/2014 – 6/30/2015.
- **Southern Utah Sage-grouse Monitoring. Year 2.** Principal Investigator. Bureau of Land Management. \$159,291. 7/1/2014 – 6/30/2015.
- **Southern Utah Sage-grouse Monitoring.** Principal Investigator. Bureau of Land Management. \$80,000. 7/1/2013 – 6/30/2014.
- **Protecting visitor experience, health, and historic structures via wildlife exclusion of Bryce Canyon National Park.** Principal Investigator. National Park Service. \$31,099. 7/1/2013 – 6/30/2014.
- **Effects of construction activities and reclamation on sage-grouse movements and habitat use.** Principal Investigator. Rocky Mountain Power, PacifiCorp. \$181,921. 7/1/2013 – 6/30/2016.
- **Investigating Wildlife Use of Historic Structures at Bryce Canyon National Park.** Principal Investigator. National Park Service. \$9933. 5/1/2012 - 6/30/2015.
- **Hamlin Valley greater Sage-grouse Population Monitoring Continuation.** Principal Investigator. Bureau of Land Management. \$72,000. 9/19/2012 - 9/30/2015.
- **Hoyt's Ranch Greater Sage-grouse Movements.** Principal Investigator. Utah Division of Wildlife Resources. \$18,000. 7/1/2010 – 6/30/2012.

- **Utah Greater sage-grouse populations within Beaver and Iron Counties.** Principal Investigator. Bureau of Land Management. \$33,186.64. 5/17/10 – 12/30/2012.
- **Greater sage-grouse habitat use, movements and recruitment in Milford, ...Windzones.** Principal Investigator. Bureau of Land Management. \$120,019. 4/1/10 – 3/31/2012.
- **Factors influencing successful Utah Prairie Dog Recolonization.** Principal Investigator. Utah Division of Wildlife Resources. \$23,494.00. July 2011 – June 2011.
- **Successful relocation of Ringtails using an adaptive resource management strategy.** Principal Investigator. National Park Service. \$90,000 10/1/10 – 12/31/2013
- **Hamlin Valley Greater Sage-grouse Population Monitoring.** Principal Investigator. Utah Division of Wildlife Resources. \$50,000. 3/1/10- 6/30/12
- **Factors Influencing Successful Utah Prairie Dog Relocation.** Principal Investigator. Utah Division of Wildlife Resources. \$25,000. 7/1/2009 – 6/30/2010.
- **Color Country Greater Sage-grouse Inventory and Monitoring.** Principal Investigator. Bureau of Land Management, Kanab Field Office. \$25,000. 8/1/08 - 9/30/13.
- **National Wildlife Habitat Evaluation Program.** Co-Principal Investigator. US Fish and Wildlife Service. \$25,000. 5/1/2007 – 12/31/2007.

XIV. Professional Associations:

- National Association of County Agricultural Agents. 2012 – present.
- The Wildlife Society (TWS), Bethesda, MD. 1996-present
- TWS Utah State Chapter 2002- present
- Jack H. Berryman Institute, Utah State University, UT. 1999 - present
- Utah Partners for Conservation Development (proposal reviewer 2008 - present, vice-chair 2005-2007)
- Color Country Resource, Conservation, and Development Committee (technical advisor)

XV. Honors:

- 2016. Group Achievement Award, The Wildlife Society, Bethesda, Maryland.
- 2015. Elected president of the Conservation Education and Outreach working group of the Wildlife Society. 2-year term.
- 2015. Award of Excellence awarded to the facilitators of the Utah Community-Based Conservation Program. Western Extension Directors' Association.
- 2015. Award of Merit. Utah Chapter of the Wildlife Society.
- 2013. Professional Achievement Award. Central Mountain and Plains Section of The Wildlife Society.
- 2010. Rural Development Recognition of Achievement. Rural Development Council.
- 2009. Elected as Central Mountain and Plains Section of The Wildlife Society President-elect for 2010-2012.
- 2008-2010. Elected as The Wildlife Society Wildlife Damage Management Working Group Secretary.
- 2007-2009. Elected as Central Mountain and Plains Section of TWS Board Member at Large.
- 2007. Wildlife Biologist Certification. The Wildlife Society.
- 2003. Research Assistant of the Year. Utah State University College of Natural Resources.
- 2000. Elected as Graduate Student Representative, Jack H. Berryman Institute.
- 1997. Associate Wildlife Biologist Certification. The Wildlife Society.
- 1994. Alpha Zeta Honorary Fraternity.
- 1994. Golden Key National Honor Society.