

THOMAS S. SMITH

Curriculum Vitae

Brigham Young University
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PROFESSIONAL GOALS

My professional goal has been to promote the conservation of a variety of wildlife species through a better understanding of their ecological niche and the nature of human conflicts that affect them. In order to conserve a species we must first understand its ecological needs. Secondly, human-wildlife conflicts not only directly reduce population size but also impedes conservation efforts. Additionally, it is my objective to train tomorrow's conservation leaders so that they can become wise and effective stewards of our natural heritage.

EDUCATION

- Purdue University, Indiana; ecology major; 1974-1975. GPA 3.68
- Brigham Young University, Utah; zoology major; 1978-1982, **B.S.** awarded 1982. GPA 3.65
- University of Alaska – Fairbanks; wildlife management major; 1984-1986; **M.S.** awarded 1987. Thesis title: “Patterns of Activity and Snow-Related Behavior of Wintering Reindeer (*Rangifer tarandus*) on the Seward Peninsula, Alaska”. GPA 3.98
- Brigham Young University, Utah; wildlife ecology major; 1986-1992, **Ph.D.** awarded 1992. Dissertation title: “The bighorn sheep of Bear Mountain: ecological investigations and management recommendations”. GPA 3.66

PROFESSIONAL WORK HISTORY

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| 2006 to Present | Associate Professor, Department of Plant and Wildlife Sciences, Brigham Young University, Provo, Utah. Awarded tenure in 2011. |
| 1993 to 2006 | Research Wildlife Ecologist, US Geological Survey, Alaska Science Center, Anchorage, Alaska. |
| 1995 to 1996 | Adjunct Faculty, Department of Biology, Kodiak College, Kodiak, Alaska. |
| 1992 to 1993 | Research Wildlife Biologist, National Park Service, Katmai National Park, King Salmon, Alaska. |
| 1991 to 1992 | Adjunct Faculty, Utah Valley University, Department of Biology, Orem, |

Utah.

- 1989 to 1992 Research Wildlife Technician and PhD Graduate Student, Brigham Young University, Department of Botany and Range Science, Provo, Utah.
- 1988 to 1989 Wildlife Biologist, US Forest Service, Ashley National Forest, Manila, Utah.
- 1984 to 1986 Research Biological Technician and MS Graduate Student, University of Alaska, Fairbanks, Alaska.

PUBLICATIONS

Peer Reviewed Journal Articles and Book Chapters

Forty-one total publications, 22 as an associate professor at Brigham Young University. Google scholar citation results (12/26/18): total citations = 770, h-index = 12)

Notes: Graduate and undergraduate student authors are underlined and italicized, respectively. IF = journal impact factor. A description of my personal contribution is outlined for refereed papers authored as an Associate Professor.

Robinson, R. W., T. S. Smith, J. C. Whiting, and J. M. Shannon. 2018. Status and trends of desert bighorn sheep in the North San Rafael Swell. Submitted to the Desert Bighorn Council Transactions. 2018. Desert Bighorn Council Transactions 54:1-12.

Rusty Robinson was one of my PhD students at Brigham Young University, funded by a Utah Division of Wildlife Resources grant that I authored and directed. I designed the fieldwork that is the basis for this publication, and have collaborated with former BYU students J. Whiting and J. Shannon during this project. This represents 3 years of field work. The Desert Bighorn Council Transactions in which this was published includes a section of peer-reviewed papers, and this is the lead peer-reviewed article in the last issue.

Smith, T. S., J. Gookin, B. Hopkins, and S. Henrie. 2018. Portable electric fencing for bear deterrence and conservation. Human Wildlife Interactions 12:309–321. (IF = 0.61)

I designed this research project and tasked undergraduate S. Henrie with doing the laboratory portion at BYU, under the direction of Dr. Hopkins. The field data used for this project originated from J. Gookin and myself. Data collected for this publication spanned 18 years of data collection effort.

Rode, K. D., J. W. Olson, D. Eggett, D. C. Douglas, G. M. Durner, T. C. Atwood, E. V. Regher, R. S. Wilson, **T. S. Smith**, M. St. Martin. 2018. Den phenology and reproductive success of polar bears in a changing climate. J. Mammalogy 99:16-26. (IF = 2.139)

This research project was based on data generated by my graduate student J. Olson, D. Eggett and myself. We (student and myself) originally came up with the concept for this paper and worked with K. Rode and others to accomplish the task. We used field data for this publication that spanned 36 years of data collection effort, part of which I collected while working for the US Geological Survey.

Smith, T. S. and S. M. Herrero. 2018. Human-bear conflict in Alaska: 1880 – 2015. The Wildlife Society Bulletin 42:254-263. (IF = 0.967)

I initiated data collection regarding Alaska bear attacks in 1996 when I became the US Department of the Interior bear safety trainer for Alaska. This database now contains > 62,000 entries and is the most extensive in the world. I have generated 5 peer-reviewed papers from this database. Data

collection efforts for this publication spanned 20 years.

Olson, J. W., K. D. Rode, D. Eggett, **T. S. Smith**, R. R. Wilson, G. M. Durner, A. Fischbach, T. C. Atwood and D. C. Douglas. 2017. Collar temperature sensor data reveal long-term patterns in southern Beaufort Sea polar bear den distribution on pack ice and land. *Marine Ecology Progress Series* 564: 211-224. (IF = 2.619)

I designed this research for graduate J. Olson, who worked closely with D. Eggett to generate this paper. We used field data for this publication that spanned 36 years of data collection effort, part of which I collected while working for the US Geological Survey.

Gooch, A.M., S. L. Petersen, G. H. Collins, **T. S. Smith**, B. R. McMillan, and D. L. Eggett. 2017. The impact of feral horses on pronghorn behavior at water sources. *Journal of Arid Environments* 138:38-43. (IF = 1.772)

I served on the graduate committee of A. Gooch and worked closely with her to design the aspect of her work that addressed behavioral interactions of wildlife with feral horses. We consulted on many occasions, including ways in which to most effectively statistically analyze behavioral data. I reviewed and revised the manuscript as an Associate Professor at BYU.

Miller, J. A., **T. S. Smith**, J. Auger, H. Black, and L. Allphin. 2016. An analysis of human-black bear conflict in Utah. *Human-Wildlife Interactions* 10:292-299. (IF = 0.61)

I designed this research project and tasked graduate J. Miller with doing the data collection and analysis at BYU. The field data used for this project originated from a variety of statewide sources and spanned a 25-year period. I reviewed and revised the manuscript as an Associate Professor at BYU.

Miller, J. A., **T. S. Smith**, J. Auger, H. Black, and L. Allphin. 2016. The late denning activities of the American black bear in Utah. *Ursus* 27:1-12. (IF = 1.094)

I designed this research project and tasked graduate J. Miller with doing the data collection and analysis at BYU. The field data used for this project spanned a 3-year period. I reviewed and revised the manuscript as an Associate Professor at BYU.

Robinson, R., **T. S. Smith**, R. T. Larsen and B. J. Kirschhoffer. 2014. Factors influencing polar bear den detection using forward-looking infrared imagery. *BioScience*. 64(8): 735-742. (IF = 5.378)

I designed this research project and tasked graduate R. Robinson with doing the data collection and analysis at BYU. The field data used for this project were collected on the North Slope of Alaska under extreme weather conditions (< -40 deg C). I reviewed and revised the manuscript as an Associate Professor at BYU.

Shannon, J. M., J. C. Whiting, R. T. Larsen, D. D. Olsen, J. T. Flinders, **T. S. Smith**, and R. T. Bowyer. 2014. Population response of reintroduced bighorn sheep after observed commingling with domestic sheep. *European Journal of Wildlife Research* 60:737-748. (IF = 1.453)

I served as graduate advisor for J. Shannon while he conducted this research project. The field data used for this project spanned a 5-year period. I reviewed and revised the manuscript as an Associate Professor at BYU.

Gookin, J., **T. S. Smith** and A. Williams. 2014. A device for refilling practice bear spray canisters. *Human-Wildlife Interactions Journal*. 8(2): 279-283. (IF = 0.61)

J. Gookin invented this device but I set forth the idea of making this into a research paper and subsequently conducted laboratory experiments to collect data for this project and wrote the manuscript.

Smith, T. S., J. A. Miller and C. S. Layton. 2013. A comparison of methods to document activity patterns of post-emergence polar bears (*Ursus maritimus*) in northern

Alaska. Arctic 66(2):139-146. (IF = 1.174)

I designed this research project and tasked graduate R. Robinson with doing the data collection and analysis at BYU. The field data used for this project were collected on the North Slope of Alaska under extreme weather conditions (< -40 deg C). I reviewed and revised the manuscript as an Associate Professor at BYU.

Smith, T. S., J. Oyster, S. T. Partridge, and I. Martin. 2012. Assessing black bear response to human activity at Kenai Fjords National Park, Alaska. *Ursus* 23(2): 179-191. (IF = 1.094)

I designed and conducted this research project and tasked undergraduate J. Oyster with performing data analysis. I collected the field data used for this project over a 2-year period in Alaska. I reviewed and revised the manuscript as an Associate Professor at BYU.

Smith, T. S., S. Herrero, C. S. Layton, R. Larsen and K. R. Johnson. 2012. Efficacy of firearms for bear deterrence in Alaska. *Journal of Wildlife Management* DOI: 10.1002/jwmg.342 (electronic journal article), (IF = 2.055)

I designed and conducted this research project and tasked undergraduate J. Oyster with performing data analysis. I collected the field data used for this project over a 2-year period in Alaska. I reviewed and revised the manuscript as an Associate Professor at BYU.

Herrero, S., A. Higgins, J. E. Cardoza, L. I. Hajduk, and **T. S. Smith.** 2011. Fatal attacks by American black bear on people: 1900—2009. *Journal of Wildlife Management* 75:596-603. (IF = 2.055)

I contributed data used in this manuscript as well as performed statistical analysis of black bear conflicts in North America. I reviewed and revised the manuscript as an Associate Professor at BYU.

Robinson, R. W., T. S. Smith, BJ Kirschhoffer, and C. Rosa. 2011. Polar bear (*Ursus maritimus*) cub mortality at a den site in northern Alaska. *Polar Biology* DOI 10.1007/s00300-011-1013-2; Published online 20 April 2011. (IF = 1.711)

I worked closely with graduate R. Robinson in writing this paper and in designed and conducted this research project and tasked undergraduate J. Oyster with performing data analysis. I collected the field data used for this project over a 2-year period in Alaska. I reviewed and revised the manuscript as an Associate Professor at BYU.

Shannon, J. M., D. D. Olson, J. C. Whiting, J. T. Flinders, and T. S. Smith. 2009. Status, distribution, and history of Rocky Mountain bighorn sheep in Utah. *Proceedings of the 16th Northern Wild Sheep and Goat Council.* Pages 176-193.

I worked closely with graduate J. Shannon in writing this paper, particularly since it drew heavily from earlier work I had published on the subject. I reviewed and revised the manuscript as an Associate Professor at BYU.

Partridge, S. T, **T. S. Smith,** and T. L. Lewis. 2009. Black and brown bear activity at selected coastal sites in Glacier Bay National Park, Alaska: a preliminary assessment using noninvasive procedures. *USGS Open File Report 2009-1169.* 62 pp.

S. Partridge conducted this research for which I both wrote the grant and study plan and oversaw the research. I wrote this peer-reviewed report but put S. Partridge as lead since he did the entirety of fieldwork. Two field seasons (years) of data contributed to this manuscript. USGS Open File Reports are as peer-reviewed as manuscripts submitted to any scientific journal. I wrote and revised the manuscript as an Associate Professor at BYU.

Smith, T. S., S. Herrero, T. D. DeBruyn, and J. M. Wilder. 2008. Efficacy of bear deterrent spray in Alaska. *Journal of Wildlife Management* 72: 640-645. (IF = 2.055)

I synthesized this paper, assembling the data and analyzing it. The other authors either provided incidents (S. Herrero) or assisted in initial document review. Data for this paper spanned 20 years of collection effort. I wrote and revised the manuscript as an Associate Professor at BYU.

Smith, T. S., S. T. Partridge, S. C. Amstrup, and S. Schliebe. 2007. Post-den emergence behavior of polar bears (*Ursus maritimus*) in northern Alaska. *Arctic* 60: 187-194. (IF = 1.174)

I conducted this fieldwork along with S. Partridge over a five-year period and worked closely with S. Amstrup and S. Schliebe to write this manuscript. I reviewed and revised the manuscript as an Associate Professor at BYU.

Wilder, J. M., T. D. DeBruyn, **T. S. Smith**, and A. Southwood. 2007. Systematic collections of bear-human interaction information for Alaska's national parks. *Ursus* 18: 209-216. (IF = 1.094)

This project was based on earlier work I conducted in Alaska focused on creating a database for human-bear conflict. I worked closely with lead author J. Wilder to design this work. I reviewed and revised the manuscript as an Associate Professor at BYU.

Amstrup, S. C., I. Stirling, **T. Smith**, C. Perham, and G. Thiemann. 2006. Recent observations of intraspecific predation and cannibalism among polar bears in the southern Beaufort Sea. *Polar Biology* 29: 997-1002. (IF = 1.174)

Smith T. S., S. Herrero, and T. D. DeBruyn. 2005. Alaskan brown bears, humans, and habituation. *Ursus* 16:1-10. (IF = 1.094)

Smith, T. S., S. T. Partridge, and J. W. Schoen. 2005. Interactions of brown bears, *Ursus arctos*, and gray wolves, *Canis lupus*, at Katmai National Park and Preserve, Alaska. *Canadian Field Naturalist* 118:247-250. (IF = 0.38)

Herrero, S., **T. Smith**, T. DeBruyn, K. Gunther, and C. Matt. 2005. Brown bear habituation to people: safety, risks and benefits. *Wildlife Society Bulletin* 33:362-373. (IF = 0.967)

DeBruyn, T. D., **T. S. Smith**, K. Proffitt, S. Partridge, and T. D. Drummer. 2004. Brown bear response to elevated viewing structures at Brooks River, Alaska. *Wildlife Society Bulletin* 32:1132-1140. (IF = 0.967)

Smith, T. S. and B. A. Johnson. 2004. Modeling the effects of human activity on Katmai brown bears (*Ursus arctos*) through the use of survival analysis. *Arctic* 57: 161-166. (IF = 1.174)

Smith, T. S. and S. T. Partridge. 2004. Dynamics of intertidal foraging by coastal brown bears in southwestern Alaska. *Journal of Wildlife Management* 68:233-240. (IF = 2.055)

Smith, T. S. 2002. The effects of human activity on brown bear use of the Kulik River, Alaska. *Ursus* 13:153-163. (IF = 1.094)

Smith, T. S., P. J. Hardin and J. T. Flinders. 1999. Response of bighorn sheep to clear-cut logging and prescribed burning. *Wildlife Society Bulletin* 27:840-845. (IF = 0.967)

Smith, T. S. 1998. Attraction of brown bears to red pepper spray: caveats for use. *Wildlife Society Bulletin* 26:92-94. (IF = 0.967)

Matheny, R., **T. S. Smith**, and D. G. Matheny. 1997. Animal ethology reflected in rock art of Nine Mile Canyon, Utah. *Journal of California and Great Basin Anthropology*

Smith, T. S. and J.T. Flinders. 1992. Evaluation of mountain sheep habitat in Zion National Park, Utah. *Desert Bighorn Council Transactions* 36:4-9.

Smith, T. S., J. T. Flinders and D. S. Winn. 1991. A habitat evaluation procedure for Rocky Mountain bighorn sheep in the intermountain west. *Great Basin Naturalist* 51:205-224. (IF = 0.311)

Collins, W.B. and **T. S. Smith**. 1991. Effects of wind-hardened snow on foraging by reindeer (*Rangifer tarandus*). *Arctic* 44:217-222. (IF = 1.174)

Smith, T.S., J.T. Flinders and D.S. Winn. 1990. Habitat evaluation procedure for Rocky Mountain bighorn sheep in the western Rocky Mountains and Great Basin regions. *Biennial Symposium Northern Wild Sheep and Goat Council* 7:210-226.

Smith, T. S. and J.T. Flinders. 1990. Mountain sheep harvest regulations in Utah, 1990. *Biennial Symposium Northern Wild Sheep and Goat Council* 7:256-258.

Collins, W. B. and **T. S. Smith**. 1989. Twenty-four hour behavior patterns and budgets of free-ranging reindeer in winter. *Rangifer* 9:2-8. (IF= 0.48)

Smith, T. S., J. T. Flinders, and D. W. Olsen. 1988. Status and distribution of Rocky Mountain bighorn sheep in Utah. *Biennial Symposium Northern Wild Sheep and Goat Council* 6:5-12.

Smith, T. S., J. T. Flinders, and D. W. Olsen. 1988. The Bear Mountain bighorn sheep transplant research project: a progress report. *Biennial Symposium Northern Wild Sheep and Goat Council* 6:184-190.

Peer Reviewed Reports in Review

Larson, W., **T. S. Smith**, R. Robinson, J. Olson, BJ Kirschhoffer. 2019. Polar bear response to human activity on the North Slope, Alaska. Accepted with revision at the journal *Arctic*.

Data for this project came from 25 years of data collection on Alaska's North Slope. I tasked graduate W. Larson to conduct this work. I guided data organization, analysis and manuscript preparation. This manuscript has been accepted with revisions. I have reviewed and revised the manuscript as an Associate Professor at BYU.

Larson, W., and **T. S. Smith**. 2019. A risk assessment of bear-human conflict at campsites in Bryce Canyon National Park. Accepted with revision at *Ursus*.

I designed and received funding for this project and tasked graduate W. Larson to conduct this work. I guided data organization, analysis and manuscript preparation. This manuscript has been accepted with revisions. I have reviewed and revised the manuscript as an Associate Professor at BYU.

Sharp, T. R., S. Swamianathan, A. S. Arun, **T. Smith**, K. Satyanarayan, and G. Seshamani. 2019. Sloth bear attack behavior. In review at *Ursus*.

I worked closely with lead-author T. Sharp to produce this manuscript, providing insights regarding human-sloth bear conflicts. Data for this project came from 5 years of data collection effort in villages in India. I have reviewed and revised the manuscript as an Associate Professor at BYU.

Sproat, K., N. R. Martinez, **T. S. Smith**, W. B. Sloan, J. T. Flinders, J. W. Bates, J. G. Cresto, and V. C. Bleich. 2019. Desert bighorn sheep response to human activity in Southeastern Utah. Submitted to PlosOne for review.

Data for this project came from N. R. Martinez who did the fieldwork but never published the results. Under my direction, graduate K. Sproat reworked, analyzed the data and produced this manuscript. Slope. I reviewed and revised the manuscript as an Associate Professor at BYU.

Peer Reviewed Reports and Book Chapters in Preparation

French, B., **T. S. Smith**, K. Kunkel, R. Edgel, R. Larsen and E. Follmann. In preparation. Ecology of brown bears (*Ursus arctos*) within a coastal region of Katmai National Park, Alaska. PlosOne.

Smith, T. In preparation. Chapter 17: Patterns of bear attacks on humans, factors triggering risky scenarios and how to reduce them *in* Bears of the World: Ecology, Conservation and Management", Cambridge University Press.

Smith, T., G. York and BJ Kirschhoffer. In preparation. An evaluation of the use of forward-looking infrared for polar bear den detection. BioScience.

Wilder, J. M., **T. S. Smith**, and G. York. In preparation. Efficacy of bear spray for polar bear deterrence: an evaluation. Arctic.

Smith, T. S. In preparation. Reproduction and denning ecology of the polar bear, *Ursus maritimus*. A chapter prepared for the Ethology Series by Springer Press.

Non-Peer Reviewed Technical Reports and Popular Articles

Dungan, R. A., **T. S. Smith**, W. Larson, and *E. Grigg*. 2018. Trapping and collaring black bears in southern Utah, year end report, Summer 2017. Report to the National Park Service, Bryce Canyon National Park. 15 pp.

Sharp, T. R., S. Swaminathan, A. S. Arun, **T. S. Smith**, K. Satyanarayan, and G. Seshamani. 2017. Sloth bear attack behavior and a behavioral approach to safety. Final report to the International Association for Bear Research and Management. 22 pp.

Rosell, J., **T. S. Smith**, W. Larsen and *C. Dixon*. 2016. Paunsaugunt Plateau black bear studies. Final report for 2016 to the National Park Service, Bryce Canyon, Utah. 29 pp.

Smith, T. S. 2015. Polar bear research on Alaska's North Slope. Long-term ecological monitoring in BP's North Slope oil fields: 2013 Annual Report. 88 pp.

Larson, W. and **T. Smith**. Paunsaugunt Plateau Black Bear Project Report. Annual report provided to the Utah Division of Wildlife Resources. 3 pp.

Smith, T. S. 2014. Polar bear research on Alaska's North Slope. Long-term ecological monitoring in BP's North Slope oil fields: 2013 Annual Report. 88 pp.

Smith, T. S. 2013. Polar bear research on Alaska's North Slope. Long-term ecological monitoring in BP's North Slope oil fields: 2012 Annual Report. 80 pp.

Smith, T. S. 2013. New bear safety and conflict tactics. Pages 18-19 *in* Summer edition of Fly Rod and Reel.

Smith, T. S. and S. Herrero. 2012. Bullets and bears. Alaska Magazine, Northwest Publishing, Anchorage.

Allred, P., B. Bateman, D. Brady, K. Johnson, D. Chi, T. Justensen, M. Linnell, J. Zerenberg, S. Madsen, K. Robinson, J. Weis, **T. S. Smith**, R. Robinson, C. Young, J.

Binder, K. Bunnell, J. Dolling, W. Paskett, A. Aoude, and A. Candelaria. 2011. Utah black bear management plan. V 2.0. Utah Division of Wildlife Resources Publication 11-01. 37 pp.

Miller, J. A. and **T. S. Smith**. 2011. The post-denning activities of the American black bear (*Ursus americanus*) in Utah: a summary of research activities: spring 2011. Report to the Utah Division of Wildlife Resources, Salt Lake City, Utah, USA. 42 pp.

Durner, G. M., K.S. Simac, S.C. Amstrup, D. Douglas, G. York, E.V. Regehr, **T. S. Smith**, and T. Bentzen. 2010. U.S. Geological Survey polar bear research, 2005—2009. Pages 199-218 in Obbard, M.E., Thiemann, G.W., Peacock, E., and DeBruyn, T.D. (eds), Polar Bears: Proceedings of the 15th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, Copenhagen, Denmark, 29 June–3 July 2009. Gland, Switzerland and Cambridge, UK: IUCN. vii + 235 pp.

Smith, T. S. 2010. Post-den emergence behavior of polar bears in northern Alaska. Animal Keeper's Forum. 37: 574-575.

Smith, T. S., R. Robinson, B. J. Kirschhoffer. 2010. Long-term ecological monitoring in BP's North Slope oil fields: 2010 Annual Report. 81 pp.

Smith, T. S., J. A. Miller, and *C. Layton*. 2009. Post-den emergence behavior of polar bears in northern Alaska. US Fish and Wildlife Service project completion report. 91 pp.

Robinson, R. and **T. S. Smith**. 2010. Status of post-den emergence behavior of polar bears at maternal dens in Alaska. US Fish and Wildlife Service annual report. 45 pp.

Smith, T. S., R. Robinson, B. J. Kirschhoffer. 2009. Long-term ecological monitoring in BP's North Slope oil fields: 2010 Annual Report. 80 pp.

Smith, T. S., R. Robinson, B. J. Kirschhoffer. 2008. Long-term ecological monitoring in BP's North Slope oil fields: 2008 Annual Report. 81 pp.

Smith, T. S., and J. A. Miller, Editors. 2008. Proceedings of the 16th Northern Wild Sheep and Goat Council Symposium. Meetings held in Midway, Utah. May 2008. 291 pp.

Smith, T. S., S. Herrero, and T. DeBruyn. 2008. Bear spray, your best defense. Alaska Magazine, Northwest Publishing, Anchorage.

Durner, G. M., S. C. Amstrup, G. S. York, E. V. Regehr, K. S. Simac, **T. S. Smith**, S. T. Partridge, T. Bentzen, K. S. Amstrup, and D. C. Douglas. 2006. Polar bear research in Alaska. Pages 77-100 in J. Aars, N. J. Lunn, and A. E. Derocher, Editors. Proceedings of the 14th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, 20-24 June 2005, Seattle, Washington. International Union for Conservation of Nature and Natural Resources, Gland, Switzerland. IUCN/SSC Occasional Paper 32. 198 pp.

Smith, T. S., S. C. Amstrup, and S. Herrero. 2005. The bear that never was. Alaska Magazine, September Issue. 7 pp.

Amstrup, S. C., G. M. Durner, E. V. Regehr, G. S. York, K. S. Simac, **T. S. Smith**, S. T. Partridge, and D. C. Douglas. 2005. Polar bear research in the Beaufort Sea. In Proceedings of the Canadian Polar Bear Technical Committee, 7-9 Feb 2005, Edmonton, Canada.

Schliebe, S., and **T. Smith**. 2004. Many are cold, but few were frozen. USFWS Alaska Reflections 16:6-8

Amstrup, S. C., G. M. Durner, E. V. Regehr, G. S. York, K. S. Simac, **T. S. Smith**, S. T. Partridge, and D. C. Douglas. 2004. Polar bear research in the Beaufort Sea. In Proceedings of the Canadian Polar Bear Technical Committee, 15-17 Feb 2004, Winnipeg, Canada.

Amstrup, S. C., G. M. Durner, A. S. Fischbach, G. S. York, K. S. Simac, **T. S. Smith**, S. T. Partridge, and D. C. Douglas. 2003. Polar bear research in the Beaufort Sea. In Proceedings of the Canadian Polar Bear Technical Committee, Feb 2003, Edmonton, Canada.

Smith, T. S., T. D. DeBruyn, T. Lewis, R. Yerxa, and S. Partridge. 2003. Bear-human interactions at Glacier Bay National Park and Preserve: conflict risk assessment. *Alaska Park Science* 2:20-25.

Hobbs, N. T., F. Singer, **T. Smith** and D. Stevens. 1995. National parks in Colorado. Pages 5-18 *in* Bighorn sheep in the Rocky Mountain Region. Reports of the five scientific advisory committees. National Biological Service, report to the National Park Service, Ft. Collins, CO.

Sellers, R. A., S. D. Miller, **T. S. Smith**, and R. Potts. 1993. Population dynamics and habitat partitioning of a naturally regulated brown bear population on the coast of Katmai National Park. 1993 Annual Progress Report. Alaska Department of Fish and Game, Juneau, 35 pp.

Chapters in Books

DeBruyn, T. D. and **T. S. Smith**. 2009. Managing bear viewing to minimize human impacts on the species in Alaska. Chapter 7 *in* Ecotourism and Environmental Sustainability. J. Hill and T. Gail, editors. Ashgate Publishing, Farnham, Surrey, UK. 259 pp.

PROFESSIONAL AND PUBLIC PRESENTATIONS WHILE AT BYU (indicates published abstract)

Smith, T. S. 2018. Chronicling human-bear conflict: commentary and caveats. Invited keynote presentation at the International Bear Association Conference held in Ljubljana, Slovenia. September 2018.

Wilder, J., **T. Smith**, G. York and M. Obbard. 2018. Why you should carry bear spray in polar bear country. Poster presentation at the International Bear Association Conference held in Ljubljana, Slovenia. September 2018.

Larson, W., **T. S. Smith**, R. Robinson, J. Olson, B.J. Kirschhoffer. 2018. Polar bear response to human activity on the North Slope, Alaska. Oral presentation at the International Bear Association Conference held in Ljubljana, Slovenia. September 2018.

Smith, T. S. August 5, 2018. Oral presentation on bear safety messaging to employees of BP Alaska, Anchorage, Alaska.

Sharp, T., **T. Smith**, and K. Satyanarayan. 2017. Sloth bear attacks: determining a behavioral approach to safety. Oral presentation at the International Bear Association meeting held in Quito, Ecuador. September 2017.

Smith, T. S. 2017. Foraging for wild edibles – a uniquely BYU experience. Invited speaker at the Utah Food Summit, Salt Lake City, Utah.

Robinson, R. W., **T. S. Smith**, J. C. Whiting, and J. M. Shannon. 2017. The desert bighorn of the San Rafael Swell, Utah. Poster presentation at the Utah Chapter of The Wildlife Society, March 20th. Bryce Canyon, Utah.

Larson, W. and **T. S. Smith**. 2017. Polar bear-human conflict on Alaska's North Slope. Poster presentation at the Utah Chapter of The Wildlife Society, March 20th. Bryce Canyon, Utah.

Larson, W. and **T. Smith**. 2017. Black bear-human interactions at Bryce Canyon National Park, Poster presentation at the Utah Chapter of The Wildlife Society, March 20th. Bryce Canyon, Utah.

Muncey, K., **T. Smith**, and J. Taylor. 2017. Bobcat ecology on the Utah Training and Testing Range, Western Utah. Poster presentation at the Utah Chapter of The Wildlife Society, Bryce Canyon, Utah.

Smith, T. S. 2017. Bear safety messaging – a time for review and revision. Oral presentation at the Utah Chapter of The Wildlife Society, March 20th. Bryce Canyon, Utah.

Smith, T. S. 2017. Bear safety messaging. Presented February 2017 at the Alaska Forum for the Environment. Invited keynote speaker. Anchorage Convention Center, Anchorage, Alaska.

Smith, T. S. 2016. Polar bear den research presentation to the staff of the Winnipeg Zoo, Winnipeg, Manitoba.

Smith, T. S. 2016. Bear-human conflict in Alaska: Safety messages that matter. A presentation to the staff of the Brookfield Zoo, Chicago, Illinois.

Smith, T. S. 2016. Polar bear-human conflict. Invited presentation to the Polar Bear Range States Conflict Working Group. Anchorage, Alaska.

Kirschhoffer, BJ, **T. S. Smith**, W. Larson, R. Robinson, and J. Olson. October 19, 2015. From frozen binoculars to heated cameras: the evolution of and early results from polar bear den monitoring in Alaska. The Wildlife Society International Conference. Winnipeg, Manitoba, Canada. Oral Presentation.

Smith, T. S. July 2, 2015. Oral presentation on bear safety messaging to employees of BP Alaska, Anchorage, Alaska.

Smith, T. S. and W. Larson. June 2015. Oral presentation on polar bear den studies to docents, keepers and volunteers at the Hogle Zoo, Salt Lake City, Utah.

Larson, W., **T. S. Smith**, J. Kirschhoffer, and S. C. Amstrup. 2015. Using synthetic aperture radar for detection of polar bear dens. Poster presentation at the Utah Chapter of The Wildlife Society, March 20th. Moab, Utah.

Robinson, R., **T. Smith**, and J. Shannon. 2015. Determining the status and trend for desert bighorn sheep in the north San Rafael Swell, Utah. Poster presentation at the Utah Chapter of The Wildlife Society, March 20th. Moab, Utah.

Miller, J. A., **T. S. Smith**, J. Auger, H. Black and L. Allphin. 2015. An analysis of black bear (*Ursus americanus*) – human conflict in Utah. Poster presentation at the Utah

Smith, T. S. (2015). Mammal species in Utah. Poster presentation at the Utah Chapter of The Wildlife Society, March 20th. Moab, Utah.

Miller, J. A., J. Heward, J. Auger, **T. Smith**, H. Black, J. Shivik, C. Clyde, D. Leichty, W. Paskett, R. Peck, G. Wallace, R. Thacker, B. Compton, and J. Shannon. 2015.

Mammalian species seen at female black bear dens: random or non-random den visitors? Oral presentation at the Utah Chapter of The Wildlife Society, March 20th. Moab, Utah.

Olson, J. W., K. Rode, D. Eggett, **T. S. Smith**, D. Douglas. 2015. Identifying maternal denning behavior in polar bears using temperature. Oral presentation at the Utah Chapter of The Wildlife Society, March 20th. Moab, Utah.

Smith, T. S. October 24-31, 2014. Numerous webcasts to over 75,000 participants of Tundra Connections, a conservation outreach effort of Polar Bears International. Churchill, Manitoba.

Smith, T. S. October 22, 2014. Oral presentation on bear safety messaging to docents, keepers and volunteers at the Columbus Zoo, Columbus, Ohio.

Smith, T. S. October 21, 2014. Oral presentation on polar bear maternity den at the Cincinnati Zoo, Cincinnati, Ohio.

Smith, T. S. June 25, 2014. Presentation on bear safety messaging to the docents, keepers and volunteers of the Brookfield Zoo, Chicago, Illinois.

Smith, T. S. June 21, 2014. Presentation on polar bear maternity den at the Henry Villas Zoo, Madison, Wisconsin.

Miller, J., **T. S. Smith**, H. Black and J. Auger. March 2014. Denning ecology of Utah black bears. Poster presentation at the Utah Chapter of the Wildlife Society, St. George, Utah.

Larson, W., **T. S. Smith**, BJ Kirschhoffer. March 2014. Use of synthetic aperture radar for polar bear den detection on Alaska's North Slope. Poster presentation at the Utah Chapter of the Wildlife Society, St. George, Utah.

Olsen, J. W., K. Rode, D. Eggett, D. Douglas, and **T. S. Smith**. Identifying maternal denning behavior in polar bears (*Ursus maritimus*) using temperature. Poster presentation at the Utah Chapter of the Wildlife Society, St. George, Utah.

Robinson, R. W., **T. S. Smith**, and J. Shannon. Determining the status and trend of desert bighorn sheep in the north San Rafael Swell. Poster presentation at the Utah Chapter of the Wildlife Society, St. George, Utah.

Smith, T. S., M. Obbard, K. Siegel, November 4-6th, 2013. Seven live web conferences linked up with hundreds of elementary schools, zoos and BYU for discussions of polar bear ecology, management and their future. Churchill, Manitoba.

Smith, T. S. September 23-24, 2013. Three presentations on polar bear research, status and future at the St. Louis Zoo, St. Louis, Missouri.

French, H. B, **T. S. Smith**, K. Kunkel, R. Edgel and E. Follmann. September 2013. Ecology of brown bears (*Ursus arctos*) within a coastal region of Katmai National Park Alaska. Poster presentation at the International Conference on Bear Research and Management, Provo, Utah.

Miller, J., **T. S. Smith**, J. Auger, and H. Black. September 2013. The post-denning activities of the American black bear (*Ursus americanus*) in Utah. Poster presentation at the International Conference on Bear Research and Management, Provo, Utah.

Robinson, R. and **T. S. Smith**. March 2013. Polar bear den detection using FLIR. Poster presentation at the Utah Chapter of the Wildlife Society, Bryce Canyon National Park, Utah.

Olsen, J. W., W. Larson, B. J. Kirschhoffer, and **T. S. Smith**. Technologies for polar bear den detection. Robinson, R. and T. S. Smith. Poster presentation at the Utah Chapter of the Wildlife Society, Bryce Canyon National Park, Utah.

Miller, J., **T. S. Smith**, H. Black and J. Auger. March 2013. Denning ecology of Utah black bears. Poster presentation at the Utah Chapter of the Wildlife Society, Bryce Canyon National Park, Utah.

Rehder, M. and **T. S. Smith**. March 2013. Analysis of bear attacks in Alaska, 1883-2012. Poster presentation at the Utah Chapter of the Wildlife Society, Bryce Canyon National Park, Utah.

Smith, T. S. April 25, 2013. Presentation on polar bear research, status and future at the Oregon Zoo, Salt Lake City, Utah.

Smith, T. S. February 26, 2013. Presentation polar bear research, status and future at the Hogle Zoo, Salt Lake City, Utah.

Smith, T. S., J. Simerson and M. Obbard. November 1, 2012 from 3:00 to 4:00 pm. Live video conference link with Kansas City Zoo. Churchill, Manitoba.

Smith, T. S. September 21, 2012. Careers in biology. Invited presentation to the Slate Canyon Youth Detention Center. Provo, Utah.

Smith, T. S., B.J. Kirschhoffer, J. W. Olson, and R. Robinson. April 2012. Polar bear mothers and cubs. Tundra Connections webcast for grades K-6 made from BYU, Provo, Utah.

Smith, T. S., B.J. Kirschhoffer, J. W. Olson, and R. Robinson. April 2012. Polar bear mothers and cubs. Tundra Connections webcast for grades 7-12 made from BYU, Provo, Utah.

Smith, T. S. March 2012. Polar bear maternal dens and climate change: what next? Invited presentation at the Friends of the Forest Preserve annual fund-raiser, Chicago, Illinois.

Robinson, R. and **T. S. Smith**. March 2012. Polar bear den detection using FLIR. Poster presentation at the Utah Chapter of the Wildlife Society, Zion National Park, Utah.

Besan, Q. and **T. S. Smith**. March 2012. Alaskan brown bear response to the sights, scents and sounds associated with human activity. Poster presentation at the Utah Chapter of the Wildlife Society, Zion National Park, Utah.

Miller, J., **T. S. Smith**, J. Auger, and H. Black. March 2012. Den observation of black bears of the East Tavaputs Plateau, Utah. Poster presentation at the Utah Chapter of the Wildlife Society, Zion National Park, Utah.

Gooch, A., S. Petersen, **T. S. Smith** and B. McMillan. March 2012. Monitoring of

wildlife use of guzzlers in Nevada. Poster presentation at the Utah Chapter of the Wildlife Society, Zion National Park, Utah.

Smith, T. S., BJ Kirschhoffer, R. Noblin, and K. Dantanagan. October 31, 2011 from 1:00 to 2:00 pm. Live video conference link with Brigham Young University, General Biology Class. Churchill, Manitoba.

Smith, T. S., BJ Kirschhoffer, R. Noblin, and K. Dantanagan. October 31, 2011 from 3:00 to 4:15 pm. Live video conference link with Brigham Young University, Wildlife Techniques Class. Churchill, Manitoba.

Smith, T. S., BJ Kirschhoffer, R. Noblin, and K. Dantanagan. November 1, 2011 from 10:30 to 11:30 am. Live video conference link with Bozeman Public Schools. Churchill, Manitoba.

Smith, T. S., BJ Kirschhoffer, R. Noblin, and K. Dantanagan. November 1, 2011 from 1:00 to 2:00 pm. Live video conference link with Pittsburgh Zoo/Allegheny Zoo. Churchill, Manitoba.

Smith, T. S., BJ Kirschhoffer, R. Noblin, and K. Dantanagan. November 1, 2011 from 3:00 to 4:00 pm. Live video conference link with Kansas City Zoo. Churchill, Manitoba.

Smith, T. S., A. McCall, R. Noblin, and K. Dantanagan. November 2, 2011 from 10:00 to 11:00 am. Live video conference link with Howe Public Schools. Churchill, Manitoba.

Smith, T. S., BJ Kirschhoffer, R. Noblin, and K. Dantanagan. November 2, 2011 from 12:30 to 1:30 pm. Webcast: Polar bear mothers and cubs. Churchill, Manitoba.

Smith, T. S. November 2, 2011. Polar bear maternal den studies. Tundra Buggy Lodge, Churchill, Manitoba.

Smith, T. S., A. McCall, R. Noblin, and K. Dantanagan. November 3, 2011 from 1:30 to 2:30 pm. Webcast: North American Bears. Churchill, Manitoba.

Smith, T. S., R. Robinson and J. W. Olson. October 2011. On thin ice. Invited. 2011 Bluegrass Bioneers Conference, Louisville, KY.

Smith, T. S. September 21, 2011. Careers in biology. Invited presentation to the Slate Canyon Youth Detention Center. Provo, Utah.

Smith, T. S. June 2011. Polar bear den research on Alaska's North Slope. Invited presentation to the general public, given in the Salt Lake City Library on behalf of Polar Bears International and the Hogle Zoo, Utah..

Smith, T. S. June 2011. Polar bear ecology and climate change. Invited presentation to the Board of the Utah Zoological Society.

Smith, T. S. June 2011. Polar bears – a species in peril. Invited presentation to the docents, volunteers and keepers at the Hogle Zoo, Utah.

K. S. Sproat, **T. S. Smith**, W. Sloan, P. Riddle, and G. Wallace. April 2011. Desert bighorn sheep survival rates in Canyonlands National Park, Utah. Presented to the 51st Meeting of the Desert Bighorn Council Transactions, Laughlin, Nevada.

Smith, T. S. November 2010. Efficiency of foraging for bear detritus. Invited

Smith, T. S. November 2010. Efficacy of firearms for bear deterrence. Invited presentation to game wardens from Manitoba Conservation, employees of Frontiers North Adventures, and polar bear biologists from Edmonton, AB and Anchorage, AK.

Smith, T. S. November 2010. Polar bear denning ecology. Invited presentation to the public of Churchill, Manitoba, Canada. Sponsored by the Parks Canada and Polar Bears International.

Smith, T. S. and M. Obbard. October 30, 2010: 12:00 pm. Media Interview: Freelance journalist I. Bhaskar questions for magazine article. Churchill, Manitoba.

Smith, T. S. and M. Obbard. November 1, 2010 from 9:45 to 11:00 am. Live video conference link with Brigham Young University, General Biology Class. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 2, 2010 from 10:45 to 12:00 pm. Live video conference link with the Oregon Zoo and Roosevelt High School. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 2, 2010 from 12:00 pm to 1:00 pm. Live video conference link with members of the Oregon Zoo and Winterhaven K-8. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 2, 2010 from 2:45 pm to 4:00 pm. Live video link with the Oregon Zoo and the Multnomah Learning Centre. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 3, 2010 from 9:15 am to 10:30 am. Live video conference with the North Carolina Zoo. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 3, 2010 from 10:45 am to 12:00 pm. Live video conference with the Oregon Zoo and Aloha High School. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 3, 2010 from 12:45 pm - 2:00 pm. Live video conference with the Oregon Zoo and Wilson High School, marine biology class. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 3, 2010 from 3:45 pm – 5:00 pm. Live video conference with Potter Park Zoo and Clinton Country. Churchill, Manitoba.

Smith, T. S. November 3, 2010 from 7:30 to 8:30 pm. Polar bear maternal den studies. Evening Lecture: Tundra Buggy Lodge, Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 4, 2010 from 8:30 am – 10:00 am. Live video conference with the Philadelphia Zoo and Holy Spirit High School. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 4, 2010 from 1:15 pm - 2:30 pm. Live video conference with the Utah Hogle Zoo, staff and volunteers. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 5, 2010 from 8:45 am to 10:00 am. Live video conference with Seabrook Intermediate School. Churchill, Manitoba.

Smith, T. S., M. Lockart and M. Obbard. November 5, 2010 from 10:45 am – 12:00 pm. Live video conference with the Toronto Zoo, staff and volunteers. Churchill,

Manitoba.

Smith, T. S. November 5, 2010 from 5:00 to 7:00 pm. Workshop: Bear Spray Deterrent Training with Frontiers North Adventure tundra buggy drivers. Churchill, Manitoba.

Smith, T. S. October 2010. Efficacy of firearms for bear deterrence in Alaska. Invited presentation to wildlife students at BYU-Idaho, Rexburg.

Smith, T. S. October 2010. *Ursid* winners and losers in a warming world: montane bears and climate change. Invited presentation to the 17th Annual Conference of The Wildlife Society, Snowbird, Utah.

Smith, T. S. September 2010. Post-den emergence of polar bears in Northern Alaska. Invited presentation to the Association of Zoos and Aquariums Annual Conference, Houston, Texas.

Smith, T. S. August 2010. Polar bears and climate change. Invited presentation to docents, volunteers, and keepers of the Indianapolis Zoo, Indiana.

Smith, T. S. August 2010. Polar bears and conservation. Invited presentation to the public of Cleveland, Ohio at the Cleveland Zoo.

Robinson, R. and **T. S. Smith.** March 2010. Post-denning behavior of polar bears on the North Slope of Alaska. Presented at the annual meetings of the Utah Chapter of the Wildlife Society, Moab Utah.

Sproat, K. and **T. S. Smith.** March 2010. Desert bighorn sheep survival in Canyonlands National Park: 2002-2010. Presented at the annual meetings of the Utah Chapter of the Wildlife Society, Moab Utah.

Smith, T. S. March 2010. Polar bear post-denning behavior on Alaska's North Slope. Invited presentation – Banquet Speaker at the Idaho Chapter of The Wildlife Society's Annual Meeting, Boise, Idaho.

Smith, T. S., S. Herrero and C. Layton. November 2009. Efficacy of firearms for bear deterrence in Alaska. Invited presentation at the Bear-Human Conflicts Workshop held in Canmore, Canada. This was a 1.5-hour presentation of our research to more than 100 biologists gathered from throughout North America.

Smith, T. S., C. Layton and S. Herrero. November 2009. Bear spray versus bullets: a comprehensive analysis of bear spray and firearms records in Alaska. Presented at the Bear-Human Conflicts Workshop held in Canmore, Canada.

Smith, T. S. November 2009. Polar bear denning ecology along Alaska's North Slope. Invited presentation to the public of Churchill, Manitoba, Canada. Sponsored by Parks Canada and Polar Bears International; presented at the Parks Canada Headquarters in Churchill, Manitoba.

Derocher, A., D. Moore, M. Obbard, **T. Smith,** and G. York. November 6, 2009 from 7:00 pm to 10:00 pm. A Celebration of Conservation at Parks Canada. An evening presentation with the citizens of Churchill, Manitoba.

Smith, T. S., D. Moore, and K. Siegel. November 7, 2019. Live video conference with the Pittsburgh Zoo, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 9, 2019 from 12:15 PM to 1:15 PM. Live video conference with St George's Independent School, Churchill, Manitoba.

LIVE VIDEO CONFERENCE WITH ST. GEORGE'S INDEPENDENT SCHOOL. Churchill, Manitoba.

Smith, T. S. and G. York. November 9, 2019 1:30 to 3:30 pm. Media Outlet: Ice Bear Project. Smith and York were interviewed for publications regarding the Ice Bear Project, artwork touring the world pertaining to global climate change. Churchill, Manitoba.

Smith, T. November 10, 2009 from 10:00 am-12:00 pm. Forward-Looking Infrared Imagery for Polar Bear Den Detection Training. Presented to employees of Parks Canada and Manitoba Conservation.

Smith, T. S., D. Moore, and G. York. November 10, 2009 from 11:00 -11:45 am. Live video conference with the Toronto Zoo. Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 10, 2009 from 12:00 to 1:00 pm. Live video webcast sponsored by Learning Immersion- Polar Bears. Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 10, 2009 from 2:00 - 3:00 pm. Live video conference with Vanderbilt School, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 10, 2009 from 4:00 to 5:00 pm. Live video webcast sponsored by Learning Immersion- Polar Bears. Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 11, 2009 from 10:30 am -12:00 pm. Live webcast to a General Audience: Webcast (Global Climate Change and Polar Bears). Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. Wednesday, November 11, 2009 from 1:00 to 2:00 pm. Live video conference with BYU Wildlife Biology Course. Churchill, Manitoba.

Smith, T. S. Wednesday, November 11, 2009 from 7:30 to 8:30 pm. Evening Lecture: Polar bears and climate change. Given at the Tundra Buggy Lodge, Churchill, Manitoba.

Smith, T. S., BJ Kirschhoffer, and R. Robinson. November 11, 2009 from 1:00-4:00 pm. FLIR Training presented to Hudson Bay Helicopters, Manitoba Conservation, and Parks Canada. Churchill, Manitoba

Smith, T. S. November 11, 2009 from 7:00 – 8:00 pm. Polar Bear Maternal Denning Ecology: Lecture Series at Parks Canada, Churchill, Manitoba.

Smith, T. S. November 13, 2009 from 10:00 am to 12:00 pm. Tom Smith and Mary Carillo of NBC news do a 5 minute piece on polar bear conservation for the 2010 Olympics. Churchill, Manitoba.

Smith, T. S. May 2009. Polar bears and climate change. Invited presentation to the docents, keepers, volunteers and staff of the Columbus Zoo, Columbus, Ohio.

Smith, T. S. May 2009. Polar bears, conservation and the role of the Columbus Zoo. Invited presentation to the Columbus Zoo Board, donors and trustees of the Columbus Zoo following the dedication of the newly built \$20 million “Polar Frontier Exhibit” which features the research of Dr. Tom S. Smith.

Smith, T. S., D. Moore, and G. York. October 31, 2008 from 11:00 AM to 12:00 PM. Live video conference with the Oregon Zoo and Aloha High School, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. October 31, 2008 from 1:00 PM to 2:00 PM. Live video conference with the Oregon Zoo and Roosevelt High School, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. October 31, 2008 from 2:00 PM to 3:00 PM. Live video conference with the Oregon Zoo and Wilsonville High School. Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 1, 2008 from 8:00 AM to 9:00 AM. Live video conference with Roger Williams Park Zoo, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 4, 2008 from 10:00 AM to 11:00 AM. Live video conference sponsored by Jane Goodall's Roots & Shoots sponsored outreach with Vanderbilt Virtual School, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 4, 2008 from 11:00 AM to 12:00 PM. Live video conference sponsored by Jane Goodall's Roots & Shoots- Apple Webcast: Polar Bear Facts, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 4, 2008 from 12:00 PM to 1:00 PM. Live video conference sponsored by Jane Goodall's Roots & Shoots - St George's (6th grade math and AP Environmental Science), Churchill, Manitoba.

Smith, T. S. and D. Moore. November 4, 2008 from 8:00 PM to 9:00 PM. Live video conference with Polar Bears International- Australia. Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 5, 2008 from 9:00 AM to 10:00 AM. Live video conference sponsored by Jane Goodall's Roots & Shoots - Vanderbilt Virtual School, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 5, 2008 from 11:00 AM to 12:00 PM. Live video conference sponsored by Jane Goodall's Roots & Shoots- Apple Webcast #2. Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 6, 12:00 PM to 1:00 PM. Live video conference sponsored by Jane Goodall's Roots & Shoots with St George's (6th grade math and AP Environmental Science), Churchill, Manitoba.

Smith, T. S., A. Derocher, D. Moore, and G. York. November 7, 11:00 AM to 12:00 PM. Live video conference sponsored by the National Geographic, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 7, 7:00 – 8:00 pm. Lecture Series at Parks Canada: Polar Bear Maternal Denning Ecology. Churchill, Manitoba.

Smith, T.S. and D. Moore. November 4, 2008. Canada TV Interview regarding climate change and polar bears. Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 5, 2008. Zac Unger Interview, Harpers Collins, book publisher, Churchill, Manitoba.

Smith, T. S., D. Moore, and G. York. November 6, 2008. Focus Magazine Interview with Silvia Annidas, Churchill, Manitoba.

Smith, T. S. September 2008. Polar bear post-den emergence research in northern Alaska. Invited presentation at the American Association of Zoo Keepers National Meeting held in Salt Lake City, Utah.

Shannon, J. M., D. D. Olson, J. C. Whiting, J. T. Flinders and **T. S. Smith**. May 2008. Status, Distribution, and History of Rocky Mountain Bighorn Sheep in Utah. Presented to the 16th Northern Wild Sheep and Goat Council in Heber, Utah.

Smith, T. S. March 2008. Polar bear post-denning ecology in northern Alaska. Invited presentation for Biology Department Seminar, BYU-Idaho, Rexburg.

Smith, T. S. October 2007. Polar bear ecology. Invited presentation at the Churchill Northern Studies Centre, Churchill, Manitoba.

Smith, T. S. October 2007. The post-denning ecology of polar bears in Alaska. Invited presentation at the Churchill Northern Studies Centre, Churchill, Manitoba.

Smith, T. S. October 2007. The polar bears of Western Hudson Bay. Invited presentation at the Churchill Northern Studies Centre, Churchill, Manitoba.

Smith, T. S. October 2007. The post-denning ecology of polar bears in Alaska. Invited presentation at the Parks Canada headquarters, Churchill, Manitoba.

Smith, T. S., B. Alan Johnson, T. Lewis, and T. D. DeBruyn. 2006. Using neural networks to model bear-human interactions at Glacier Bay National Park and Preserve, Alaska, USA. Presented at the 17th International Bear Conference at Karuizawa, Japan.

Smith, T. S., S. Herrero, T. D. DeBruyn, and J. A. Wilder. 2006. Efficacy of bear deterrent spray in Alaska: 1985-2005. Presented at the 17th International Bear Conference at Karuizawa, Japan.

GRADUATE STUDENTS SUPERVISED

Justin Shannon (MS Degree: 2006 to 2008)

Thesis Research: Justin studied the results of transplanted Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*) to the Wasatch Front in order to determine herd population dynamics, habitat relationships, and bighorn-human interactions. His thesis is entitled "History and ecology of Rocky Mountain bighorn sheep in Utah."

Rusty Robinson (MS Degree: 2008 to 2012)

Thesis Research: Rusty studied polar bear (*Ursus maritimus*) maternal den activity on Alaska's North Slope. He also conducted tests of forward-looking infrared technology in order to better understand variables that influence the detection of polar bear den thermal signatures. His thesis is entitled "Post-den emergence behavior and den detection of polar bears (*Ursus maritimus*) in northern Alaska and the southern Beaufort Sea".

Kanalu Sproat (MS Degree: 2009 to 2012)

Thesis Research: Kanalu studied radio-collar location data from desert bighorn sheep (*Ovis canadensis nelsoni*) in the Moab, Utah area in order to determine movements of bighorn rams and ewes using ongoing GPS radio-telemetry data. His thesis is entitled "Alteration of behavior by desert bighorn sheep from human recreation and Desert Bighorn Sheep Survival in Canyonlands National Park: 2002 – 2010".

Julie Miller (MS Degree: 2011 to 2015)

Thesis Research: Julie studied the post-denning behaviors of Utah black bears (*Ursus americanus*) and creating a database of bear-human conflict in Utah. Her thesis is entitled "A study of the American black bear (*Ursus americanus*) in Utah: an analysis of the post-denning activities and bear-human conflict".

Jay Olson (MS Degree: 2011 to 2015)

Thesis Research: Jay studied polar bear (*Ursus maritimus*) denning behavior and produced two peer-reviewed manuscripts on the topic. His thesis is entitled “Maternal denning phenology and substrate selection of polar bears (*Ursus maritimus*) in the southern Beaufort and Chukchi Seas”.

Rusty Robinson (PhD Degree: 2012 to 2017)

Thesis Research: Rusty investigated the causes for the decline of the San Rafael desert bighorn (*Ovis canadensis nelsoni*) in south-central Utah. Rusty tracked 38 radio-tagged bighorn on a daily/weekly basis to determine movements, reproduction, and mortality factors. His thesis is entitled “Space use, resource selection, and survival of reintroduced bighorn sheep”.

Wesley Larson (MS Degree: 2014 to 2017)

Thesis Research: Wes was involved in a suite of bear research projects including North Slope Alaska polar bear den monitoring project and an investigation into the ecology of black bears on the Paunsaugunt Plateau. His thesis is entitled “Human-bear interactions among black bears in Bryce Canyon National Park, Utah, and polar bears on Alaska’s North Slope”.

Kyle Muncey (MS Degree: 2016 to 2018)

Thesis Research: Kyle studied the ecology of bobcats on the Utah Testing and Training Range (UTTR), Utah. His thesis is entitled “Bobcat abundance and habitat selection on the Utah Test and Training Range”.

Adriana Dungan (MS Degree: 2017 to Present)

Thesis Research: Black bear-habitat relationships on the Paunsaugunt Plateau, Utah.

GRADUATE STUDENT COMMITTEE MEMBER/CHAIR ASSIGNMENTS

Loren Chase – MS – 2006 to 2007. Public perceptions of bighorn reintroductions and mountain lion reductions. Committee member.

Daniel Olson – MS – 2006 to 2008. Population ecology and dynamics of the Stansbury Mountains bighorn herd, Utah. Committee member.

Kathryn Johnson – MS (Univ. Alaska) – 2006 to 2008. Cultural relationships with brown bears on Kodiak Island, Alaska. Committee member.

Joshua Whitaker – MS—2007 to 2009. Diet selection by bighorn sheep in Utah. Committee member.

Ben Stearns – MS – 2007 to 2009. Diet selection by Rio Grande turkeys in Utah. Committee member.

Justin Shannon – MS – 2006 to 2009. Bighorn reintroductions along the Wasatch Front. Committee chair.

Danny Raymer – PhD –2006 to 2009. Use of range water resources by turkeys and quail. Committee member.

Rob G. Appleby – PhD (Nathan Univ, Australia) – 2004 to Present. Dingo-human interactions on Fraser Island, Australia. Committee member.

Rusty Robinson – MS/PhD – 2009 to Present. Polar bear post-denning behaviors in Alaska. Committee chair.

Kanalu Sproat – MS – 2009 to Present. Desert bighorn movements, home ranges, and response to human activity near Moab, Utah. Committee chair.

Julie A. Miller – MS - 2011 to 2015. A study of the Utah black bear at den sites and a History of black bear-human conflict in Utah. Committee chair.

Amy Gooch – MS - 2011 to 2014. A study of wild horse-pronghorn conflict at water sources in the Sheldon National Wildlife Refuge. Committee member.

Jay W. Olson – MS - 2011 to 2015. Maternal denning behaviors of polar bears in northern Alaska. Committee chair.

R. Justin Bingham – PhD - 2010 to Present. Translocated chukars as population engineers: evaluating the influence of biological and environmental constraints on site fidelity and persistence. Committee member.

Eric Freeman – MS – 2011 to 2013. Utah deer harvest and population dynamics. Committee member.

Wesley Larson – MS – 2014 to 2017. Black bears of the Paunsaugunt Plateau and polar bear human conflict.

Rusty Robinson – PhD – 2012 to 2017. Ecology of desert bighorn sheep of the San Rafael Swell, Utah.

Tommy Krebbs – PhD – 2016 to present. Impacts and behavior of feral horses in southern Arizona.

Mark Petersen – PhD – 2018 to present. Dissertation topic under development.

UNDERGRADUATE STUDENTS PARTICIPATING IN MY RESEARCH PROGRAM

Cali Layton – 2007 to 2011.

Aaron Sisson – 2007 to 2008.

Jared Oyster – 2010 to 2011.

Julie A. Miller- 2008 to 2011.

Cari Jenkins – Summer 2008.

Ammon Boswill – 2008 to 2009.

Jeffrey Walton – 2007 to 2009.

Besan Quffa – 2010 2012.

Mikyn Rehder – 2011 to 2012.

Greg Dorn – 2012 to 2013.

Marci Nelson – 2012 to 2013.

Randy Creaser – 2012 to 2013.

Ariel Hong – 2012 to 2013.

Hayle Boyle - 2012 to 2014.

Alison Williams - 2012 to 2014.

Kirsten Jacobsen – 2012 to 2013.

Gina Geest – 2012-2014.

Lain Geest – 2012 – 2014.

Jordan Roselle – 2015 to 2016.

Colton Dixon – 2015-2016.

Colin Lindsey – 2015 to 2016.

Shad Mills – 2015 to 2016.

Teal Duncan – 2015 to 2016.

Joshua Brown – 2015 to 2016.

Josnua Brown – 2015 to 2016.
Sam Dearing – 2017 to 2018.
Zoe Haltom – 2017 to 2018.
Elicia Grigg – 2017 to present.
Cody Mallory – 2015 to present.
David Lariviere – 2018 to present.

RESEARCH GRANTS RECEIVED WHILE AT BYU

2007. Alaska grizzly and black bear research completion grant for \$13,000 from the BYU mentoring environment grant program.

2008. Polar bear den emergence studies grant for \$113,750 awarded through the National Fish and Wildlife Foundation. Matching funds within the grant were provided by Polar Bears International who received and administered these funds to T. Smith.

2009. Use of forward-looking infrared imagery (FLIR) for polar bear den detection for \$90,348 awarded through the National Fish and Wildlife Foundation. Matching funds within the grant were provided by Polar Bears International who received and administered these funds to T. Smith.

2009. Potash desert bighorn study for \$60,000 awarded by the Utah Division of Wildlife Resources to T. Smith at BYU.

2009. Polar bear den emergence study grant for \$5,000 from the Columbus Zoo to T. Smith at BYU.

2010. Polar bear den emergence study grant for \$5,000 from the Hogle Zoo to T. Smith at BYU.

2011. Utah black bear den study grant of \$5,000 from an anonymous donor to T. Smith at BYU.

2011. Utah black bear den study grant of \$5,000 from the Utah Division of Wildlife Resources in cash and in-kind support (vehicle use) to T. Smith at BYU.

2011. Polar bear den emergence study grant of \$30,000 from Conoco-Phillips, Alaska to T. Smith of BYU through Polar Bears International.

2011. Utah black bear den study grant of \$2,500 from the Utah Chapter of The Wildlife Society to J. Miller to support this T. Smith research project.

2011. San Rafael Swell desert bighorn research grant of \$289,497 to T. Smith of BYU.

2011. Polar bear den emergence study grant for \$5,000 from the Hogle Zoo to T. Smith at BYU.

2012. Polar bear den emergence study grant for \$37,000 from BP-Alaska to Polar Bears International to support T. Smith project.

2012. Polar bear den emergence study grant for \$7,000 from the Hogle Zoo to T. Smith at BYU.

2013. Redd Center Grant of \$9,000 for black bear research in Utah, BYU and a second Redd Center Grant for \$10,000 for black bear research that will include faculty from the English and GIS departments.

2013. Utah black bear study grant from the Hogle Zoo for \$3,500.
2013. Polar bear research study grant from the St. Louis Zoo for \$10,000.
2013. The Hogle Zoo invited me to their facility and made a commitment of \$100,000 in funding for polar bear research over the next 5 years beginning 2014.
2013. Exxon-Mobil funded a synthetic aperture radar (SAR) study on Alaska's North Slope. This study is to determine whether or not SAR can be used to detect polar bear dens in mid-winter. Total funding = \$90,000
2014. Black bear research grant from the Utah Division of Wildlife Resources for \$24,000.
2014. Black bear research grant from Disney Nature for \$25,000.
2014. Black bear research grant from Grand Staircase Nation Monument for \$3,000.
2014. Polar bear research grant from the Utah Zoological Society for \$20,000.
2014. Polar bear research grant from BP Alaska for \$24,500
2015. Polar bear and black bear research grant from the Utah Zoological Society for \$28,500.
2015. Grant from BP-Alaska to conduct polar bear den studies on the North Slope. \$24,000
2015. Synthetic aperture radar for polar bear den detection study grant received from Exxon-Mobil for \$125,000.
2015. Grant from Bryce Canyon National Park Natural History Association to conduct black bear research on the Paunsaugunt Plateau. \$25,000.
2015. \$2,000 grant from anonymous donor to black bear research program, Paunsaugunt Plateau black bear study, Utah.
2016. Grant from BP-Alaska to conduct polar bear den studies on the North Slope. \$24,000.
2016. Grant from Filson Clothing Company for Utah black bear research. \$5,000.
2016. Grant from the Utah Hogle Zoo for polar bear denning research on the North Slope. \$20,000.
2016. Grant from the Utah Hogle Zoo for polar bear olfactory research at the Hogle Zoo. \$10,000.
2016. Grants from donors through LDS Philanthropies to Utah black bear research. \$4,000
2016. Grant from the Bryce Canyon Natural History Association for black bear research at Bryce Canyon National Park. \$25,000.
2016. Grant from BP Alaska for polar bear work on Alaska's north slope. \$24,000.
2016. Grant from Hill AER for bobcat research (MS graduate project). \$45,000

2010. Grant from Hill AFB for bobcat research (MS graduate project). \$45,000.

2017. Donations for black bear research in Utah by Larry McMurtrey (\$2,000) and Cliff Lillywhite (\$5,000).

2017. Grant from the Bryce Canyon Natural History Association for black bear research at Bryce Canyon National Park. \$25,000.

2017. Grant from Hill AFB for bobcat research (MS graduate project). \$45,000.

2018. CURA grant for "Impact of Indian wells on native wildlife." \$3,000

2018. Grant from Hill AFB for bobcat research (MS graduate project). \$45,000.

Total Grants (2009-Present) = \$1,372,628

SOCIETY MEMBERSHIPS

IUCN Polar Bear Specialist Group Member

Polar Bear Conflict Work Group Member

The Wildlife Society – Utah Chapter Member

Arctic Institute of North America

The Northern Wild Sheep and Goat Council

International Association for Bear Research and Management

The National Rifle Association (Instructor)

PROFESSIONAL CITIZENSHIP

2017 to Present - I am a member of the International Union for the Conservation of Nature (IUCN) Polar Bear Specialist Group, an assemblage of 35 international scientists whose mission is to promote and develop scientific information necessary for the long-term conservation of polar bears.

2016 to Present – I serve on the Polar Bear Range States Conflict Working Group. This is comprised of scientists from the 5 range states (political entities with polar bears within their boundaries) focused on finding solutions for minimizing polar-bear human conflict in circumpolar regions.

2017 to Present – Serve as an advisor to Wildlife SOS, a nonprofit wildlife conservation group based in India. Their efforts to conserve India's endangered wildlife have me involved primarily in resolving human-sloth bear conflicts.

2006 to Present: I serve on a number of committees at BYU including the Life Sciences Safety Committee, Plant and Wildlife Sciences (PWS) computer science committee, and the PWS social committee.

2008 to Present: I serve on the science advisory board of Polar Bears International, a non-profit organization dedicated to the conservation of polar bears through the support of research and educational outreach.

2006 to Present: I am faculty advisor for the BYU Wildlife and Range Club.

2009 to 2013: I served as President of the Utah Chapter of The Wildlife Society. In that capacity I have helped organize the TWS national meeting at Snowbird (2010), our annual chapter meetings in Utah (2010 and 2012), contribute to our biannual newsletter, and have most recently organized a grant and scholarship program for students in Utah

studying to be wildlife biologists.

2006 to 2009: I served as a science advisor to the Alaska Wildlife Conservation Center near Portage, Alaska.

2000 to Present: I serve as a bear expert for National Geographic Magazine and National Geographic Explorer, providing expert review of articles slated for publication in their magazines and online content.

1992 to Present: I provide blind peer review for a number of journals including: The Journal of Wildlife Management, The Wildlife Society Bulletin, Ursus, Polar Biology, Arctic, The Western North American Naturalist, The Southwest Naturalist, Journal of Mammalogy, Animal Behavior, PlosOne, the Canadian-Field Naturalist, and others as requested. I review 6-12 papers per year for these journals.

UNIVERSITY CITIZENSHIP

Committee Assignments, Department of Plant and Wildlife Science, BYU

- Faculty Advisor – BYU Wildlife and Range Club, 2006 to Present

I work with student leaders to create a club that helps promote professionalism and build resumes for club members each academic year. The club provides educational and professional networking opportunities for students in the Wildlife and Wildlands Conservation major. Supported by fundraising efforts, we host a number of educational trips, support invited speakers and attend professional society meetings, Membership ~ 80 students.

- Faculty Advisor – BYU Club Animalia (Zoo Club), 2017 to Present

I work with student leaders to create a club that helps students better understand career opportunities in the zoo community. The club provides educational and professional networking opportunities for students in the Wildlife and Wildlands Conservation major. Supported by fundraising efforts, we host a number of educational trips, support invited speakers and attend professional society meetings, Membership ~ 40 students.

- Member PWS Computer Support Committee, 2014 to present.
- Member PWS Faculty Activities Committee, 2006 to present.

Committee Assignments, College of Life Sciences, BYU

- Sant Grant Review Panel, 2012 to present.
- College Safety Committee Member 2014 to present.
- University Animal Care and Use Committee Member 2006 to 2014.

Study Abroad Director

- PWS South Pacific Study Abroad (Fiji, New Zealand, Australia): 9 students May 1 to June 15, 2017.
- PWS Costa Rica Study Abroad: 23 students May 1 to May 15, 2018.
- PWS Costa Rica Study Abroad: 22 students May 1 to May 15, 2019.

TEACHING

BYU Teaching (50% teaching appointment).

In the 13 years I have taught at BYU, I have taught 12 different courses. Courses, credit hours, semester taught, enrollment and ratings are presented below.

Note: BYU changed rating systems in 2015. Prior to 2015, ratings were based on a 0-8 scale and separate evaluation scores were given for the course and the instructor. In 2015, a single composite rating was given on a scale of 0-5. Any single rating ≥ 5.0 is from the new system with a maximum value of 5.0. All others represent a 8.0 maximum scale.

Course ID	Title	Credit Hr.	Semester	Enrollment	Composite or Instructor Rating	Course Rating
IAS 201R	Cultural Survey (Study Abroad)	0.5	W 2017	5	5.0	
			Sp 2018	21	4.8	
			W 2018	40	4.8	
BIO 100	Biology for non-majors	3.0	F 2008	239	5.6	5.9
			F 2009	173	6.3	6.8
			F 2010	193	6.1	6.6
			F 2011	117	5.9	6.2
			F 2012	91	6.3	6.8
			F 2013	177	6.1	6.6
			W 2012	22	6.1	6.4
			W 2015	71	4.1	
PWS 113	Safety Certifications	1.0	W 2011	31	7.0	7.0
			W 2012	29	7.1	7.2
			W 2013	19	6.9	7.1
			W 2014	20	6.7	7.1
			W 2015	40	4.5	
			W 2016	4	4.4	
			W 2017	45	4.5	
			W 2018	42	4.6	
PWS 150	Environmental Biology	3.0	W 2016	108	4.1	
			Sp 2017	5	4.1	
			W 2017	66	4.2	
			W 2018	90	4.2	
PWS 225	Princ. Wildlife and Fisheries	3.0	F 2007	16	6.9	7.4
PWS 390R	Campus Clubs Management	1.0	W 2016	21	4.7	
PWS 357	Tech. Wildl Invest. & Mgt.	3.0	W 2007	39	6.4	6.8
			F 2008	18	7.0	6.9
			F 2009	13	6.9	6.9
			F 2010	11	7.0	7.3
			F 2011	20	7.1	7.3
			F 2012	32	6.4	6.2
			F 2013	10	7.2	7.2
			F 2014	25	6.5	6.8
			F 2015	37	4.1	
			F 2016	32	4.1	
PWS 494R	Mentored Learning	3.0	Su 2012	1	8.0	8.0
			F 2013	3	7.0	6.0
			W 2016	1	5.0	
			Sp 2017	4	4.0	
PWS 554	Wildlife Behavior	3.0	W 2008	12	7.5	7.4

			W 2009	7	7.4	7.2
			W 2011	29	7.0	7.0
			W 2013	22	6.9	6.7
			F 2014	21	7.2	6.9
			F 2016	16	4.7	
PWS 598R	Adv. Topics in PWS	3.0	F 2009	1	8.0	8.0
			F 2010	17	6.7	6.4
			W 2015	1	4.6	
			W 2018	1	5.0	
PWS 629	Carnivore Conservation	3.0	W 2010	11	6.8	7.3
			W 2012	15	7.1	7.1
			W 2014	9	6.7	6.9
			W 2016	9	4.4	
			F 2017	5	4.7	
PWS 699R	MS Thesis	3.0	W 2010	1	6.2	6.7
			W 2016	1	4.6	
			Su 2017	1	4.6	