

## INDRANI SASMAL

### Curriculum Vitae

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### RESEARCH INTERESTS

Population ecology, landscape ecology and modeling, landscape genetics, habitat management and conservation, population viability and persistence analysis, population genetics and molecular level assessment of relevant questions

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### EDUCATION

#### **Ph. D. in Wildlife and Fisheries Sciences**

South Dakota State University (Brookings, South Dakota 57007), Department of Wildlife and Fisheries, December 2011.

Dissertation: *Population Viability Assessment of Swift Fox (*Vulpes velox*) in Badlands National Park.*

Advisor: Jonathan A. Jenks.

#### **M. S. in Zoology with Specialization in Molecular Genetics**

University of Calcutta, India, Department of Biology, June 2005.

#### **B. S. in Zoology (Major), Botany, Chemistry, Environmental Science**

University of Calcutta, India, June 2003

Minors: Botany, Chemistry, Environmental Science

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### PROFESSIONAL EXPERIENCE

**Coordinator of Grants Writing and Grants Management** (September 2018 – Present) **Dakota College at Bottineau and Research Associate**, Bottineau, North Dakota, USA. Under the supervision of the College Business Manager, provide overall coordination of grants development and management for programs funded by federal, state, and private funds, with a special focus on grants that support the college's mission in the area of Wildlife and Fisheries Technology, but also to include other areas of natural and environmental resources such as Horticulture, Forestry, Recreation Management and Agriculture. Provide assistance with the financial administration of research funds and provide support to faculty and staff to

ensure that the college meets compliance and reporting requirements. Assist faculty and staff in the budget development process for proposed projects and assist with budget analysis duties on active grant projects as assigned by the College Business Manager or his/her designee.

**Post Doctoral Research Associate** (Jan 2016 – May 2017) **North Carolina State University**, Department of Forestry and Environmental Resources, Fisheries and Wildlife Conservation Program, Raleigh, North Carolina, USA. My responsibilities are to work on 1) habitat selection and movement ecology of focal wildlife species; 2) wildlife response to growing-season prescribed fire; and 3) other questions developed by post-doc and collaborators. I have submitted influence of prescribed fire on small mammal abundance manuscript in a journal which is under review and analyzed the movement ecology of eastern coyotes and presently writing the manuscripts and conducting analysis to quantify wild turkey roost-site selection. I have also taught international wildlife management course (graduate level) for half spring semester. Supervisor – Dr. Christopher Deperno and Dr. Christopher Moorman may be contacted at 919-513-7559 or 919-515-5578

**Deputy Manager - Ecology Lead** (Jan 2015 – October 2015) **Foundation for Ecological Security**, Anand, Gujarat, India. My responsibilities were to contribute to the development and management of the Protected Area Observatory of India, identify and initiate discussion with potential collaborators and consultants, work closely with the IT group to design interface, visualization, and functionality of PAO portal, contribute to discussions with protected area managers and campaign to publicize the PAO, and contribute to the requirement analysis, planning, documentation and reporting for the PAO along with species distribution modeling, including niche modeling, Fire risk assessment modeling, and landscape fragmentation and corridor modeling. Supervisor – Dr. Ravi Chellam

**Earth Volunteer** (Mar 2014 – Dec 2014) **Natural Resource Conservation Services**, Brookings, South Dakota. I assessed highly erodible land (HEL) that could contribute to land conservation and I delineated wetlands. I geo-referenced soil and county maps. I assisted with Environmental Evaluation Worksheet CPA-52 documentation and also assist with developing various habitat management tools for habitat management plans. Supervisor - Mark Washechek may be contacted at 605-690-4893

**Post-doctoral Scholar** (Aug 2012 – Dec 2013) **South Dakota State University**, Department of Natural Resource Management, Brookings, South Dakota  
I developed crucial habitat assessment tool for assessing wildlife habitats across the state of South Dakota to aid the Decision Support System (DSS) of the west wide states funded through the Western Governors' Association. Using ArcGIS I created crucial wildlife habitat maps for the state of South Dakota. I also had built spatially-explicit species distribution models. I prepared proposals, reports and manuscripts as part of my job responsibility. Supervisor: Jonathan Jenks may be contacted at 605-688-4783.

**Independent Contractor** (Sep 2013 – June 2014) **Turner Endangered Species Fund (TESF)**, Bozeman, Montana.  
I analyzed release data to assess success of swift fox reintroduction at Bad River Ranches, South Dakota and prepared manuscript for publication. Supervisor: Mike Phillips, maybe contacted at 406-556-8500

**Instructor** (Jan 2012 – Aug 2012) **South Dakota State University**, Department of Natural Resource Management, Brookings, South Dakota

Taught WL 110 in class and online and mentored undergraduate students

Supervisor – Melissa Wuellner may be contacted at 605-688-5963.

**Research Associate** (Jan 2012 – May 2012) **South Dakota State University**, Animal Science Department, Animal Science Complex, Brookings, South Dakota

I performed DNA analysis and set up PCR protocols. I also ran PCR, performed genotyping using gel and sequencer, and worked with animal disease genetics. I prepared reports and grant proposals and inventoried the laboratory

Supervisor – Michael Gonda may be contacted at 605-688-5442

**Graduate Research Assistant** (Aug 2008 – Dec 2011) **South Dakota State University**, Department of Natural Resource Management, Brookings, South Dakota

I designed a mark recapture study of swift fox at Badlands National Park (BNP), South Dakota. I had set up protocol for PCR, extracted DNA and did sequencing and primer design. I trapped, radio-collared and tracked swift fox to be able to investigate habitat preference during pup rearing season. As part of the population genetics study, I also conducted population viability analysis of reintroduced swift fox population in BNP

Supervisor - Dr. Jonathan Jenks may be contacted at 605-688-4783

**Research Fellow** (Sep 2006 - Aug 2008) **Wildlife Institute of India**, Dehradun, Uttarakhand, India

I conducted field surveys to estimate of large carnivore population using mark recapture (remote camera trapping) and analyzed data from different landscapes in India. I assessed human disturbance, habitat quality, prey density, and relative carnivore density and prepared reports. During the study I worked under challenging conditions in several different landscapes (Terai arc of Himalayas, Central India, Eastern India and the Deccan plateau)

Supervisor - Dr. Y. V. Jhala may be contacted at (0135) 2640111-115

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## PEER REVIEWED PUBLICATIONS

Sasmal I., C. E. Moorman, M. B. Swingen, S. Datta, C. S. DePerno. 2018. Seasonal space use of transient and resident coyotes in North Carolina. *Canadian Journal of Zoology*. *Canadian Journal of Zoology* 97(4): 326 – 331. DOI: [dx.doi.org/10.1139/cjz-2018-0209](https://doi.org/10.1139/cjz-2018-0209)

Sasmal I., N. P. Gould, K. L. Schuler, Y. F. Chang, A. Thachil, J. Strules, C. Olfenbuttel, S. Datta, C. S. DePerno. 2019. Leptospirosis in Urban and Suburban American Black Bears (*Ursus americanus*) in Western North Carolina, USA. *Journal of Wildlife Disease* 55(1): 74 - 83. DOI: [10.7589/2017-10-263](https://doi.org/10.7589/2017-10-263)

Sasmal I., E. L. Kilburg, C. S. DePerno, M. C. Chitwood, M. A. Lashley, B. A. Collier, C. E. Moorman. 2018. Eastern Wild Turkey Roost-Site Selection in a Fire-Maintained Longleaf Pine Ecosystem. *Southeastern Naturalist* 17(3): 371 – 380. DOI: [10.1656/058.017.0301](https://doi.org/10.1656/058.017.0301)

Sasmal I., C. Deperno, C. Moorman, M. Swingen. 2017. Influence of Vegetation Type and Prescribed Fire on *Peromyscus* Abundance in a Longleaf Pine Ecosystem. *Wildlife Society Bulletin* 41(1): 49 - 54. DOI: [10.1002/wsb.740](https://doi.org/10.1002/wsb.740)

Sasmal I., R. W. Klaver, J. A. Jenks, G. M. Schroeder. 2016. Age specific survival of reintroduced swift fox at

Badlands National Park. Wildlife Society Bulletin. DOI: 10.1002/wsb.641

Sasmal I., M. Philips. Swift fox reintroduction at Bad River Ranches, South Dakota, USA. Global Reintroduction Perspective: 2016 Case-studies from around the globe. 2016. IUCN/SSC Re-introduction Specialist Group (RSG) 157 – 161.

Sasmal I., Honness K., Bly K., McCafferey M., Kunkel K., Jenks J., Phillips M. 2015. Release Method Evaluation for Swift Fox Reintroduction at Bad River Ranches in South Dakota. Restoration Ecology. I Restoration Ecology Vol. 23, No. 4, pp. 491–498.

Datta S., J. A. Jenks, K. C. Jensen, C. C. Swanson, R. W. Klaver, I. Sasmal, and T. W. Grovenburg. 2015. Mate Replacement and Alloparental Care in Ferruginous Hawk (*Buteo regalis*). The Prairie Naturalist 47: 36 – 37.

Sasmal I., J. A. Jenks, L. P. Waits, M. G. Gonda, G. M. Schroeder, S. Datta. 2013. Genetic Diversity in Reintroduced Swift Fox Population. Conservation Genetics 14:93 – 102.

Sasmal, I., J. A. Jenks, T. W. Grovenberg, S. Datta, G. M. Schroeder, R.W. Klaver, and K. M. Honness. 2011. Habitat selection by female swift foxes (*Vulpes velox*) during the pup-rearing season. The Prairie Naturalist 43:29–37.

Guha, S., D Kanji, I. Sasmal, T. K. Mukhopadhyay, N. K. Sarkar 2005. Study of repelling action of some plant products on stored grain pest *Sitophilus oryzae*. Golden Jubilee Commemorative collection of research articles. Department of Zoology, Presidency College. Volume II: 16–18.

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## MANUSCRIPTS UNDER PREPARATION OR IN REVIEW

Rockhill A. P., Sasmal I., DePerno C. S. *In Review*. Using the surrogate species approach with bobcat (*Lynx rufus*) to assess the importance of crop-lands as conservation corridors. PLOSONE.

Sasmal I., T. Grovenburg, S. Kempema, R. W. Klaver, J. A. Jenks, T. Runia, T. Kirschenmann. *In review*. Prairie Grouse Distribution in South Dakota. Wildlife Monograph.

Sasmal I., S. Datta, T. Grovenburg, R. W. Klaver, J. A. Jenks, S. Kempema, T. Kirschenmann. *In review*. Modeling Golden Eagle Distribution in South Dakota. PLOSONE.

Sasmal I., S. Datta, T. Grovenburg, R. W. Klaver, J. A. Jenks, S. Kempema, T. Kirschenmann. *In review*. Modeling Ferruginous Hawk Distribution in South Dakota. PLOSONE.

Sasmal I., S. Datta., T. Grovenburg, R. W. Klaver, J. A. Jenks, S. Kempema, T. Kirschenmann. *In review*. Modeling Burrowing Owl Distribution in South Dakota. Journal of Raptor Research.

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## TECHNICAL REPORTS

Sasmal et al. 2013. Crucial Habitat Assessment Tool – Burrowing Owl Distribution in South Dakota. Report submitted to South Dakota Game Fish and Parks.

Sasmal et al. 2013. Crucial Habitat Assessment Tool – Golden Eagle Distribution in South Dakota. Report submitted to South Dakota Game Fish and Parks.

Sasmal et al. 2013. Crucial Habitat Assessment Tool – Greater Sage-Grouse Distribution in South Dakota. Report submitted to South Dakota Game Fish and Parks.

Sasmal et al. 2013. Crucial Habitat Assessment Tool – Sharp-Tailed Grouse Distribution in South Dakota. Report submitted to South Dakota Game Fish and Parks.

Sasmal et al. 2013. Crucial Habitat Assessment Tool – Greater Prairie Chicken Distribution in South Dakota. Report submitted to South Dakota Game Fish and Parks.

Sasmal et al. 2012. Western Governors' Association Wildlife Pilot Projects State Management Reporting to WGA: July-December 2012.

Sasmal et al. 2010. Habitat selection by female Swift foxes (*Vulpes velox*) during the pup-rearing season: Submitted to the Swift Fox Conservation Team.

Sasmal et al. 2008. Monitoring tiger, co-predators, prey and their habitat management in Melghat Tiger Reserve, Simlipal Tiger Reserve, and Bhadra Tiger Reserve in India: Submitted to the Wildlife Institute of India.

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## PRESENTATIONS

Sasmal et al. 2019. Leptospirosis in Urban and Suburban American Black Bears (*Ursus americanus*) in Western North Carolina, USA. TWS AFS Joint Annual Conference 2019.

Sasmal et al. 2016. What can location data tell us about coyote status in a landscape? Oral Presentation. TWS Annual Conference 2016.

Sasmal et al. 2016. Influence of Vegetation Type and Prescribed Fire on *Peromyscus* Abundance in a Longleaf Pine Ecosystem. Poster. TWS North Carolina Chapter 2016.

Sasmal et al. 2013. Crucial Habitat Assessment Tool (CHAT) for the state of South Dakota. The Wildlife Society- South Dakota Chapter, Annual Meeting Program.

Sasmal et al. 2011. Population Viability Analysis of Swift fox at Badlands National Park, South Dakota, USA. PhD completion seminar, South Dakota State University.

Sasmal et al. 2010. Reintroduction of Swift fox in Badlands National Park, Ph D synopsis, South Dakota State University.

Sasmal et al. 2010. Habitat selection by female Swift foxes (*Vulpes velox*) during the pup-rearing season. Swift fox Conservation Team meeting. Laramie, WY.

Sasmal et al. 2010. Habitat selection by female Swift foxes (*Vulpes velox*) during the pup-rearing season. Midwest Furbearer Workshop, Deadwood.

Sasmal et al. 2009. Tigers in India, Brookings Wildlife Federation, Brookings, SD.

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## **CONFERENCE, WORKSHOPS AND CERTIFICATION**

Reviewer for The Wildlife Society Annual Conference oral presentation abstract in 2016, 2017, 2018, and 2019.

Moderator for The Wildlife Society Annual Conference contributed paper sessions in 2016, 2018, and 2019.

Project WET Facilitator Leadership Training Workshop, 2017, Bismarck, ND, USA

Google Earth Engine Workshop, 2014, Bangalore, India

Program Mark Workshop, 2013, Brookings, South Dakota, USA

Crucial Habitat Analysis Tool 2012, Western Governor's Wildlife Group roll-up task conference. Portland, Oregon, USA

Swift fox Conservation Team Workshop 2010, Laramie, WY, USA

Midwest Conference, Wildlife Conservation Society, 2009, Chamberlain, SD, USA

Conservation Genetics for Natural Resource Managers Workshop, 2009, Moscow, Idaho, USA

Basic Online Instructor Certification 2012.

Certificate for Environmental Security and Sustaining Peace course from SDG Academy. May 2018.

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## **GUEST LECTURES**

Wildlife Design (WL 715)

Wildlife Nutrition (WL 525)

International Wildlife Management (460/560)

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## **REVIEWING AND JUDGING**

Reviewer for *Wildlife Society Bulletin*, *Restoration Ecology*.

Reviewer for *Annual Wildlife Society Conference* presentation abstracts.

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Judged the undergraduate posters at the North Carolina State University *Undergrad Research Symposium*.

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## GRANT PROPOSALS SUBMITTED/UNDER PREPARATION

**North Dakota Game and Fish Department: State Wildlife Grant Preproposal (ND\_SWG):** Intensive survey of small mammal and Herpetofauna in the Turtle Mountains of North Dakota. Amount: \$100,000. *Awarded.*

**USDA-NRCS-Conservation Collaboration Grant.** Implementation of NRCS conservation practices in small-scale farms in North Dakota. Amount \$341,894.30. *Awarded.*

**North Dakota Natural Resource Trust – Small Grant Program.** Natural Resource Conservation Education and Awareness for K-12 Teachers and Students. Amount \$4,500. *Awarded.*

**PAT–NOW Community Fund.** Providing quality training to beginning producers and students at Dakota College at Bottineau, Lake Region State College and Williston State College regarding the application of Unmanned Aircraft System in agriculture. Amount \$5,000. *Awarded.*

**USDA-AFRI-Education and Workforce Development 2019.** Provide Education and Training to students to grow and process industrial hemp for commercial purposes. Amount \$500,000. *Letter of Intent accepted. Full Proposal Submitted/pending decision.*

**NCR-SARE Youth Educator Sustainable Agriculture Grants:** Sustainable Ag Day: Sustainable Agriculture Promotion and Education Day for Middle School Students in Mid-Central North Dakota. Amount: \$4,000. *Awarded.*

**North Dakota STEM Days for Students: North Dakota STEM.** *Awarded.* Amount: \$4,500.

**North Dakota Game and Fish Department: State Wildlife Grant Preproposal (ND\_SWG):** Ecology of American martens and its interaction with fishers in the Turtle Mountains of North Dakota. *Submitted* (pre-proposal accepted pending final decision). Amount: \$99,810. *Pending Decision.*

**USDA Food and Nutrition Service:** Farm to School Program 2019. Amount \$93,488.70. *Not Approved.*

**North Central-Sustainable Agriculture Research and Education:** Promoting Sustainable Agricultural Practices among Present and Future Farmers in North-Central North Dakota. Amount: \$200,000. *Preproposal not approved.*

**U.S. Fish and Wildlife Service International Affairs: Asian Elephant Conservation Fund.** Estimating Occupancy, Detection Probability of Asian Elephants (*Elephas maximus*), and Identifying Potential Human-Elephant Conflict Zones along its range in India and Bhutan. *Under preparation.*

**National Geographic Grant:** Elephants on the Move: Challenges of Animal Movement in a Human Dominated Landscape. Amount: \$36,000 for 2 years. *Not awarded.*

**National Science Foundation: Preliminary Proposal (SG\_RUI):** Using Undergraduate Research to Document Post-flood Changes in Riparian Woodlands of the Souris River, North Dakota. *Prepared.*

**ESRI-ECP** Grant proposal related to GIS software acquirement for Foundation for Ecological Society:  
*Awarded.*

**USDA-AFRI** grant proposal related to Sustainable Bio-energy Program under Land Use Change priority:  
*Letter of intent accepted.*

**Landscape Conservation Cooperative (LCC) Adaptive Science Program (ASP)** proposal for identifying and prioritizing aquatic connectivity and wetlands in South Dakota. USA. *Not Awarded.*

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## **AWARD**

Lyyod Frederickson Outstanding PhD Student of the Year, 2010

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## **SCIENTIFIC AFFILIATIONS**

Great Plains Natural Science Society (GPNSS), Member  
Advance Science Serving Society (AAAS), Member  
The Wildlife Society (TWS), Member

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## **SPECIALIZED SKILLS**

*Statistical Programs:* SAS, SYSTAT, Program R  
*Database and Spreadsheet Programs:* Microsoft Excel, Locate II  
*Miscellaneous Programs:* ArcGIS, ArcView, Fstat, Genepop, VORTEX, Program Mark, Program Presence, Program Distance, Microsoft Word, Microsoft PowerPoint, Adobe Photoshop, Microsoft Publisher, EndNote  
Working collaboratively, managing and conglomerating various levels of officials and stakeholders  
Data management and archiving  
Knowledge and experience in implementation of USA federal and state conservation and wildlife programs (CRP, WHIP, WRP, and GRP) in an agricultural landscape.

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