

Siobhan Darlington M.Sc., Ph.D. Candidate

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SUMMARY OF QUALIFICATIONS

Advanced statistical modelling in ecology
Research movement and habitat use of mammals & birds
Collaboration with universities, government, NGOs, First Nations, & industry

EDUCATION

Ph.D. Candidate, Biology, University of British Columbia Okanagan Jan 2020-Present
Advisors: Dr. Adam Ford & Dr. Karen Hodges Wildlife Restoration Ecology Lab
Thesis: Spatial and foraging ecology of cougars across the southern interior of British Columbia, Canada.
Website: bccougarproject.weebly.com

M.Sc. Environmental Studies, University of Victoria Sept 2015-Nov 2018
Advisors: Dr. John P. Volpe and Dr. Jason T. Fisher - Applied Conservation Macro-Ecology lab
Thesis: Cumulative effects of human landscape change, predators, and natural habitat drive distributions of an invasive ungulate
Cumulative GPA 8.25/9 Scale

B.Sc.H. Biology & Sustainability, Dalhousie University Sep 2010-May 2014
Advisor: Dr. Cynthia Staicer – Ornithology lab
Thesis: Species Distribution Modeling for Eastern Wood-pewee (*Contopus virens*) within and outside of protected areas in Nova Scotia, Canada
Cumulative GPA 3.92/4.3 Scale

PROFESSIONAL EXPERIENCE

Southern BC Cougar Project, UBC Okanagan – Project Lead Jan 2020-Present

- Hire, manage & coordinate 14 field crew and 60+ volunteers to collect baseline data on cougar populations in 3 study areas of southern British Columbia, Canada
- Conduct public outreach and science communication via website, blog posts, social media, public presentations, media interviews, podcasts, and magazine articles
- Organize all training materials, field equipment, vehicle maintenance (4x4 truck, snowmobiles)
- Co-lead GPS collaring of adult cougars, tagging kittens, and lead kill site investigations
- Lead all data management, analysis, grant applications, reporting and academic writing to meet research objectives

BC Ministry of Transportation – Contract Biologist April 2022

- Developed animated maps of GPS-collared cougar highway crossings in the southern interior BC

British Columbia Conservation Foundation –Contract biologist Jan-Oct 2020

- Joint literature review for provincial cougar management plan and cougar-caribou dynamics in British Columbia

Rocky Point Bird Observatory –Senior passerine bander Jul-Oct 2018, 2019, 2022

- Lead & trained volunteers conducting standard passerine banding and daily census for fall migration monitoring at two CMMN stations on Vancouver Island's south coast

Foothills Research Institute – Caribou Program Research Assistant Nov 2018-June 2019

- Conducting resource selection analysis of woodland caribou and grizzly bear response to mountain pine beetle infestation using radio-telemetry data in west-central Alberta
- Trapping and collaring of white-tailed and mule deer within caribou ranges

- University of Guelph, ON – Nightjar species at-risk technician May-Jul 2018
- Conducted point-count surveys, nest searching, mist-netting, banding & attaching radio-transmitters to breeding species-at-risk Eastern whip-poor-will and Common nighthawk
- University of Victoria – GIS & Biogeography Lab Instructor Jan 2016-Apr 2018
- Instructed 2nd and 3rd year labs in advanced GIS analysis, biogeography, environmental management, and systems theory. Engaged students in scientific research through in-class lectures and evaluated student assignments and exams.
- InnoTech Alberta – Large mammal camera trap technician Oct 2017
- Deployed 62 Reconyx camera array in Christina Lake, AB for detection of large mammals
- Bird Studies Canada - Aerial insectivore field technician Jun-Aug 2016
- Surveyed private properties for breeding species-at-risk including barn swallows, cliff swallows, bank swallows, bobolink and chimney swifts across New Brunswick and Nova Scotia. Administered landowner surveys and public outreach & education.
- Nature Conservancy of Canada – Coordinator/Intern New Brunswick & PEI Apr-Nov 2014
- Coordinated the Conservation Volunteers Program i.e. waterfowl surveys, cleanups, trail building. Recruited volunteer land stewards and assisted with GIS analysis and property surveys.

PUBLICATIONS

Refereed

Stewart, F.E.C., Darlington, S., Volpe, J.P., McAdie, M., Fisher, J.T. (2019). Corridors best facilitate functional connectivity across a protected area network. *Scientific Reports*.

Darlington, S., Ladle, A., Burton, A. C., Volpe, J.P., Fisher, J.T. (2022) Cumulative effects of human footprint, natural features and predation risk best predict seasonal resource selection by white-tailed deer. *Scientific Reports*, 12(1072).

Noonan, M. et al. (2023) The search behaviour of terrestrial mammals. *Nature Ecology & Evolution*. Pre-print.

Mowat, G., Darlington, S., Wilson, S. Vander Vennen, L. and Gooliaff, T. 2023. A review of cougar biology and management in British Columbia. Prov. B.C., Victoria, B.C. Tech. Rep.

Select Non-Refereed

Darlington, S. Demography of cougar populations in the southern interior of British Columbia, Canada. Technical report for the Ministry of Water, Land, and Resource Stewardship. March 2024.

Darlington, S. Cougar ecology in Central Mountain Caribou Range. Literature review for the British Columbia Caribou Monitoring Team. April 2021.

Darlington, S., Finnegan, L., Wismer, D., Stenhouse, G., Larsen, T. (2019). Central Mountain Caribou and Grizzly Bear Response to Mountain Pine Beetle. Report, fRI Research. Hinton, Alberta.

Darlington, S., Schaefer, V. Proceedings for the Garry Oak Ecosystem Recovery Team 13th Research Colloquium. November 2017.

Darlington, S., Schaefer, V (Editor). Proceedings for the Garry Oak Ecosystem Recovery Team 12th Research Colloquium. November 2016.

Pre-submission

Darlington, S. Ladle, A., Stewart, F. E.C., Burton, A. C., Volpe, J.P., Fisher, J.T. (2023) White-tailed deer (*Odocoileus virginianus*) increase movement rate near linear features using integrated Step-Selection Analysis (iSSA) metric. Ecological Applications.

Darlington, S., Hodges, K. E., Pauli, J., Foster, S., Alas, B. L., & Ford, A. T. (2024). Comparative approaches to estimating resource partitioning, specialization, and individual dietary plasticity in cougar (*Puma concolor*) populations in British Columbia, Canada. In prep.

Giovannini, A., Darlington, S., Kielpinski, C., Ford, A. T., Hodges, K. E. (2024) Avian scavenger community dynamics and arrival times at cougar-killed carcasses. In prep.

Werden, S. Darlington, S., Ford, A. T., Hodges, K. E., Bryan, H. (2024) Comparing metabarcoding and morphological methods in diet analyses of predator scat. In prep.

WRITING & ANALYTICAL SKILLS

- Writing and editing peer-reviewed manuscripts, public outreach materials, and grants
- Peer-reviewer for Biol. Cons., PLoS ONE, Animal Behaviour, and BIOC.
- Literature reviewer for provincial wildlife managers in British Columbia
- Data entry and management using Excel, OneNote, and R
- Advanced statistical modelling and mapping for species habitat use, movement, predation and dietary preferences (R, ArcGIS 10.4, ArcGIS Pro)

TECHNICAL SKILLS

- Leading cougar & deer chemical immobilization, sampling, & GPS collaring
- Coordinating, managing, and leading field crews & volunteers
- Cougar kill site investigations and field/lab necropsy
- Aerial ungulate surveys by helicopter & VHF tracking of collared animals
- Remote camera trap array deployment & maintenance
- North American bird ID by sight and sound
- Bird banding/mist netting of passerines, owls, and raptors (3200+ banded of 92 sp.)
- Hiking, snowshoeing, & snowmobiling long hours and in adverse weather conditions
- Driving 4X4 truck and trailer, driving with chains on icy roads
- Stable isotope sample preparation (hair and vibrissae) and statistical analysis (Simmr, MixSiar)
- Lab analysis of ungulate bone marrow and tooth extraction

CERTIFICATIONS

- Biologist in Training Status - College of Applied Biology British Columbia
- ECCC Bird Banding Permit – British Columbia (#10781W)
- Possession and Acquisition License (PAL; cert 2021)
- Standard, Wilderness, & Marine Basic First Aid (cert. 2023)
- Arbor Canada Tree Climbing Certification (cert. 2020)
- Chemical Immobilization of Wildlife (cert. 2019)
- AST1 Avalanche Safety (cert. 2018)
- H₂S Safety Training (cert. 2018)
- Bear Aware Safety Training (cert. 2017)
- WHMIS (cert. 2015)

SELECT CONFERENCE PRESENTATIONS (presenters in bold)

Darlington, S. Gooliaff, T.J., Hodges, K. E., Ford, A. T. Seasonal resource partitioning in a sexually dimorphic generalist predator. The BC Chapter of the Wildlife Conference, Kamloops, BC, March 13-15 2024. 3rd Place for best student talk award.

Darlington, S. Gooliaff, T.J., Hodges, K. E., Ford, A. T. Seasonal & Spatial Variation in Cougar Diet Composition across the southern interior of British Columbia, Canada. The Wildlife Society 29th Annual Meeting, Spokane, Washington, November 7-11 2022.

Darlington, S. Gooliaff, T.J. Hodges, K.E., Ford, A. T. Cougar density, diet, and habitat selection in fire-prone southern British Columbia. The 13th Annual WAFWA Mountain Lion Workshop. April 3-6 2022.

Darlington, S., Bell, D., Nightingale, A. 10,000 Owls: Nocturnal Owl Monitoring at Rocky Point Bird Observatory. Western Bird Banding Conference, Edmonton, Alberta. March 29-31 2019.

Darlington, S., Finnegan, L., Stenhouse, G., Larsen, T. Poster: "Pine-ing" for cover: Caribou and Grizzly bear response to Mountain Pine Beetle infestation in West Central Alberta. Alberta & Canadian Chapter of the Wildlife Society, Canmore Alberta, March 22-24 2019.

GRANTS & AWARDS

CSEE Excellence in Doctoral Research Award, March 2024, \$1,800

Mitacs Accelerate Grant, Awarded May 2023

Held at The University of British Columbia Okanagan, \$45,000

NSERC CGS-D Michael Smith Foreign Study Supplement, awarded December 2022

Held at University of British Columbia, \$6,000

HCTF Al Martin Conservation Fellowship, awarded July 2022

Held at University of British Columbia, \$10,000

NSERC Alexander Graham Bell Canada Graduate Scholarship – Doctoral, awarded May 2020

Held at University of British Columbia, \$35,000/year for 3 years

UBC Graduate Dean's Entrance Award, awarded August 2019

Held at University of British Columbia, \$5,000

Lorene Kennedy Write-up Award, awarded September 2018

Held at University of Victoria, \$1,500

Mitacs Accelerate Grant Awarded May 2018

Held at University of Victoria, \$15,000 grant, student stipend

UVic Graduate Award Awarded January 2016

Held at University of Victoria, \$2,500

UVic President's Research Scholarship, awarded September 2015

Held at University of Victoria, \$4,000

NSERC Alexander Graham Bell Canada Graduate Scholarship- Master's Awarded April 2015

Held at University of Victoria, \$17,500

UVic Dean's Entrance Award, awarded February 2015

Held at University of Victoria, \$5,000

Dalhousie Entrance and Continuing awards, awarded September 2010, 2011, 2013

Held at Dalhousie University, \$3,250

VOLUNTEER EXPERIENCE

Mentor – Wildlife Research & Career Network

Jun 2020-Present

- Providing 1-on-1 career advice to early career researchers and students in the field of wildlife ecology. Have mentored 20 mentees to date.

- Passerine and owl bander/extractor – Rocky Point Bird Observatory July-Oct 2016, 2017, 2020, 2021
- Mist-netting and banding of passerines during migration and owls during nocturnal monitoring
- Events Coordinator – UBC Okanagan Chapter of The Wildlife Society Sep 2020-Aug 2021
- Organizing and leading events for undergraduate and graduate students related to research and field skills development in conservation and wildlife management
- Black-tailed deer technician – Urban Wildlife Stewardship Society Mar-Apr 2018
- Capture, immobilization, and GPS-collaring of deer in Oak Bay, BC
- Assistant bird bander/extractor – Atlantic Bird Observatory Aug 2016, 17
- Mist-netting, banding, and attaching VHF transmitters to birds for research projects at Acadia University and ABO
- UVic Environmental Studies Graduate Council Representative Sept 2016-Aug 2017
- Voted and advocated for graduate student matters on behalf of department's students
- Species-at-risk technician -Mersey Tobeatic Research Institute, NS May 2016
- Monitoring of chimney swifts, loons, gulls, Blanding's turtle, and eastern ribbonsnake
- Greater Victoria Green Team Habitat Restoration Volunteer Sept 2015
- Pulling English ivy for habitat restoration on Trial Island and in Oak Bay, BC
- Elk Research Assistant – Yellowstone Ecological Research Centre Jul-Aug 2015
- Gathering elk population data and monitoring herds in Yellowstone National Park

SELECT GUEST LECTURES

S. Darlington. Spatial and seasonal variation in cougar prey choice across the southern interior of B.C. British Columbia Wildlife Federation Conservation Webinar, hosted by Jesse Zeman. March 22, 2023.

S. Darlington. Seasonal & Spatial Variation in Cougar Prey Choice across the Southern Interior of British Columbia, Canada. University of Northern British Columbia, Natural Resources and Environmental Studies Institute. January 27, 2023.

S. Darlington. Update on the Southern BC Cougar Project. Oceola Fish and Game Club, Winfield, BC. November 16, 2022.

S. Darlington. Tracking cougars by the seat of my pants. Remote presentation for Exploring by the seat of your pants hosted by Jesse Hildebrand. January 19, 2022.

S. Darlington. Southern BC Cougar Project Update. British Columbia Wildlife Federation Webinar hosted by Jesse Zeman. September 28, 2021.

S. Darlington. Geog 358: Tracking cougars across British Columbia's fire-prone landscape. University of Victoria, September 2021.

S. Darlington. Cougars in central mountain caribou range. Zoom presentation for British Columbia Caribou Recovery Team. October 2020.

INTERESTS

Birding (Siosaur on Ebird)

Wildlife photography (@wildlife_darling on Instagram)

Moth trapping and identification using INaturalist

Traveling, hiking, and backcountry camping

REFERENCES

1. Dr. Adam Ford, Associate Professor University of British Columbia Okanagan
Cell number: 250 826 3101
E-mail: adam.ford@ubc.ca
2. Dr. Karen Hodges, Professor University of British Columbia Okanagan
E-mail: karen.hodges@ubc.ca
3. TJ Gooliaff, M.Sc. RPBio, Section Head, Penticton Fish and Wildlife Branch
Cell number: 250-809-9526
E-mail: tj.gooliaff@gov.bc.ca
4. Dr. Jason Fisher, Adjunct Professor, University of Victoria
Work Number: 250-483-3297
E-mail: fisherj@uvic.ca
5. Dr. Laura Finnegan, Caribou Program Director fRI Research
Cell number: 780-223-4640
E-mail: lfinnegan@friresearch.ca