
HELEN DAVIS, R.P.Bio.

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PROFESSIONAL AND ACADEMIC QUALIFICATIONS

REGISTERED PROFESSIONAL BIOLOGIST, College of Applied Biology (British Columbia)
MASTER OF SCIENCE in Biological Sciences, Simon Fraser University, Burnaby, BC, 1996
BACHELOR OF SCIENCE in Animal Biology, University of British Columbia, Vancouver, BC, 1992

SUMMARY OF EXPERIENCE

My career as a Registered Professional Biologist has focussed on developing and implementing conservation programs for a wide variety of wildlife, concentrating primarily on research and conservation of black bears, grizzly bears, and species at risk. My research on bears has included telemetry studies of black bears (i.e., habitat relationships, winter denning requirements), grizzly bears and regional strategies to minimize impacts of bear viewing on both black and grizzly bears.

Much of my work on species at risk has focused on developing and implementing conservation programs. I have conducted multi-year research projects on American badgers and Western Screech-owls as well as Resources Information Standards Committee-compliant surveys for Great Basin spadefoots, gopher snakes, western rattlesnakes and Northern Goshawks. Much of the species at risk work that I have completed has been for First Nations' clients.

I have also participated in various habitat modelling exercises for wildlife. I have assisted in the development of predictive models for bears, badgers and Western Screech-owls and been a member of a team of species experts reviewing co-location scenarios for old growth reserve areas for coastal BC.

I have considerable experience successfully initiating, generating funding for, and completing, many large-scale projects and have produced both peer-reviewed publications as well as informative publications for the public from these projects. Creating effective extension and communication strategies that help achieve conservation goals has been a particular emphasis of my work. I enjoy landowner contact programs and I have successfully negotiated stewardship agreements between provincial government and municipal governments, and between stewardship societies and private landowners.

I have extensive experience with ecosystem assessments, population inventory, the capture, immobilization and handling of live animals, and ground and aerial radio-telemetry. I am proficient at using various methods of habitat assessment and measurement, particularly the BC biogeoclimatic ecosystem classification system, and in the utilization of Microsoft programs and ArcGIS.

RELEVANT EXPERIENCE

Most of the following projects have been conducted as a Senior Biologist with Artemis Wildlife Consultants, where I am a founding partner.

2014-2017: **Biologist** investigating methods to conserve and enhance winter dens for black bears in the Jordan River watershed. Funded by the Fish and Wildlife Compensation Program-Coastal, BC Timber Sales and TimberWest Forest Products Ltd.

2011-2017: **Biologist** creating and mapping zoology element occurrences for species at risk across BC for the BC Conservation Data Centre. Utilized NatureServe methodologies, Biotics 5.

2016: **Coordinator** of badger gene flow project. Conducted extensive outreach program to gather badger sightings in target study area. Coordinated field effort.

Pioneered innovative hair collection methods. Partners included Ministry of Environment, Okanagan Nation Alliance and UBC-Okanagan.

2015: **Lead biologist** developing a bear-viewing strategy for BC Park's Conservancies in the Central Coast. Conducted for BC Parks, Hagensborg, BC, funded by Habitat Conservation Trust Foundation.

2015: **Biologist** designing a plan for monitoring the effects of bear viewing on grizzly bears in the Atnarko River Valley, Tweedsmuir Park-South. Conducted for BC Parks, Hagensborg, BC.

2015: **Coordinator** of landowner contact program for species at risk in the north Okanagan for the Okanagan-Similkameen Stewardship Society. Worked with multiple landowners to install screech-owl nest boxes, negotiated

stewardship agreements with private landowners for screech-owls, badgers and bats.

2014: **Project Co-leader** conducting Northern Goshawk and bat inventories in the Clayton Falls watershed. Funded by the Fish and Wildlife Compensation Program-Coastal.

2014: **Lead Biologist** conducting surveys for coastal Western Screech-owls. Conducted for BC Ministry of Environment (MOE), Victoria, BC.

2010-2011: **Lead Biologist** evaluating persistence and use of den structures by black bears in the Nimpkish Valley in 1992-1995. Funded by the Habitat Conservation Trust Foundation.

2010: **Technician** live-trapping fishers as part of radio-telemetry research project at proposed Site C dam. Subcontracted by Keystone Wildlife Research Ltd.

2010: **Lead biologist** conducting a site-specific review of proposed bear viewing sites within the Atnarko River Corridor. Conducted for BC MOE, Hagensborg, BC.

2010: **Lead Negotiator** between the BC Ministry of Environment and local governments (municipal, city, regional district) to protect habitat of species at risk through stewardship agreements (4 were completed).

2010: **Species Expert/Advisor** compiling and synthesizing information on bear-viewing practices and operations throughout BC and Alaska to advise BC Parks on options for managing bear viewing in Tweedsmuir Provincial Park-South.

2009-2010: **Consultant**: soliciting, compiling and summarizing information to identify priority wildlife species for program investments in various coastal watersheds. Consulted with partner agencies (MOE, Environment Canada). Attended public and First Nations consultation meetings for watershed planning. Conducted for the Bridge Coastal Restoration Program (BCRP, now FWCP-Coastal), Burnaby, BC.

2009: **Lead Biologist** initiating and conducting a research project on habitat use by Great Basin spadefoots (COSEWIC Threatened species) in grasslands on the Okanagan Indian Band's IR#1. Funded by the Interdepartmental Recovery Fund (IRF).

2008-2009: **Domain Expert** for American black bears for a MARXAN modelling project to identify overlap between the old-growth habitat requirements of focal species to optimally select old growth reserve areas at the landscape scale. Conducted for the Ecosystem Based Management Working Group.

2007-2008: **Lead Biologist** developing a bear-viewing strategy for the Kitasoo Spirit Bear Conservancy and surrounding area (2007) and Owikeno Conservancy and surrounding area (2008). Developed rationale for the spatial and temporal extent of viewing in newly created Conservancies. Conducted for BC Parks, Hagensborg, BC.

2005-2008: **Principal Investigator** for inventory, research, and extension program aimed at conserving

Western Screech-owls (COSEWIC Threatened species) along the Shuswap River. Responsible for developing objectives and all aspects of project coordination and implementation, including preparation of successful funding applications. Funded by BCRP, Habitat Stewardship Program, and the Forest Science Program of the Forest Investment Account.

2005-2008: **Project Co-leader** for species at risk surveys. Conducted RISC-compliant presence/not detected inventories of Great Basin spadefoots, western rattlesnakes, gopher snakes, Western Screech-owls, and badgers for the Okanagan Indian Band, Vernon, BC. Secured funding from the IRF.

2005: **Project Coordinator** for Sensitive Ecosystem Inventory of the Vernon Commonage. Conducted landowner contact program, coordinated working group composed of community groups, local government, First Nations, and educational institutions. Conducted for the Allan Brooks Nature Centre, Vernon, BC.

2004-2007: **Project Co-leader** for species at risk surveys. Conducted RISC-compliant presence/not detected inventories of Great Basin spadefoots, gopher snakes, Western Screech-owls, and badgers for the Spallumcheen Indian Band, Enderby, BC. Secured funding from the IRF.

2003: **Lead Biologist** on project examining the habitat ecology of American black bears in coastal environments. Project involved analysis of habitat and spatial data collected during the Nimpkish Black Bear Study. Developed predictive habitat model and published manuscript in peer-reviewed journal. Conducted for Canadian Forest Products Ltd.

1999-2004: **Extension Specialist** for Thompson-Okanagan Badger Project. Responsible for developing extension priorities for conservation strategies, conducting target group consultation, production of extension materials, and project delivery.

2001: **Project Leader** developing implementation guidelines for "Bear Smart" status for communities in British Columbia. Project involved researching and synthesizing methods for reducing human-bear conflicts, developing criterion for "Bear Smart" status, and preparation of final published document. Completed for the Ministry of Environment, Lands and Parks (MELP).

1999: **Technician** conducting surveys and radio-telemetry on caribou, moose and wolves. Subcontracted by Wildlife Infometrics Inc.

1998: **Technician** collecting bear hair samples in the North Cascades. Conducted for the MELP, Victoria, BC.

1997-1999: **Project biologist** collecting bear hair samples from the range of Kermode bears in BC. Conducted for Western Forest Products, Vancouver, BC.

1992-1995: **Project Biologist** for Nimpkish Black Bear Study. Responsible for all aspects of the denning portion of the study design, data collection, analysis and reporting. Also responsible for immobilization, radio-

collaring, and monitoring of bears, habitat classification and description, behavioural data collection, plant

identification, and forestry interpretations. Conducted for the MELP, Victoria, BC.

REPORTS & PUBLICATIONS

- Davis, H. 1996. Characteristics and selection of winter dens by black bears in coastal British Columbia. M.Sc. Thesis. Simon Fraser University, Burnaby, BC.
- Davis, H. 2008. Proposed bear-viewing strategy for the Kitsoo Spirit Bear Conservancy and surrounding area. Prepared for BC Parks, Hagensborg, BC.
- Davis, H. 2009. Proposed bear-viewing strategy for the Owikeno Conservancy and surrounding area. Prepared for BC Parks, Hagensborg, BC.
- Davis, H. 2014. Ensuring sustainability of least weasel populations. Prepared for the Habitat Conservation Trust Foundation, Victoria, BC.
- Davis, H. 2015. Proposed bear-viewing strategy for central coast Conservancies. Prepared for Habitat Conservation Trust Foundation, Victoria, BC.
- Davis, H. 2015. Grizzly bear monitoring plan for Tweedsmuir Park-South. Prepared for BC Parks, Hagensborg, BC.
- Davis, H. 2015. Black bear den enhancement and creation in the Jordan River. Prepared for Fish and Wildlife Compensation Program, Burnaby, BC.
- Davis, H. 2016. Monitoring black bear den enhancement and creation in the Jordan River and Campbell River watersheds: 2016 year-end report. Prepared for Fish and Wildlife Compensation Program, Burnaby, BC.
- Davis, H. and R. J. Cannings. 2008. Diet of Western Screech-owls in the interior of British Columbia. *British Columbia Birds* 18:19-22.
- Davis, H. and F. Doyle. 2014. Surveys of coastal Western Screech-Owls. Prepared for BC Ministry of Environment, Victoria, BC.
- Davis, H., A. N. Hamilton, A. S. Harestad and R. D. Weir. 2012. Longevity and reuse of black bears dens in managed forests of coastal British Columbia. *Journal of Wildlife Management* 76:523-527.
- Davis, H., and A. S. Harestad. 1996. Cannibalism by black bears in the Nimpkish Valley, British Columbia. *Northwest Science* 70:88-92.
- Davis, H., and S. Himmer. 2010. Bear-viewing areas in Alaska and British Columbia and implications to Tweedsmuir Park (South). Prepared for BC Parks, Hagensborg, BC.
- Davis, H. and S. Himmer. 2010. Evaluation of potential bear viewing sites along the Atnarko River in Tweedsmuir Park (South). Prepared for BC Ministry of Environment, Hagensborg, BC.
- Davis, H. and R. D. Weir. 2010. Home ranges and spatial organization of Western Screech-owls in southern British Columbia. *Northwestern Naturalist* 91:157-164.
- Davis, H., and R. D. Weir. 2008. Western Screech-owl conservation along the Shuswap River. Prepared for Bridge-Coastal Restoration Program, Burnaby, BC.
- Davis, H., R. D. Weir, A. N. Hamilton, and J. A. Deal. 2006. Influence of phenology on site selection by female American black bears in coastal British Columbia. *Ursus* 17:41-51.
- Davis, H., D. W. Wellwood, and L. M. Ciarniello. 2002. "Bear Smart" Community Program: background report. Prepared for BC Ministry of Environment, Lands and Parks, Victoria, BC.
- Cannings, R. J., and H. Davis. 2007. Status of the Western Screech-owl *macfarlanei* subspecies (*Megascops kennicottii macfarlanei*) in British Columbia. BC Ministry of Environment. Wildlife Working Report No. WR-112. Victoria, BC.
- Horn, H. L., P. Arcese, K. Brunt, A. Burger, H. Davis, F. Doyle, K. Dunsworth, P. Friele, S. Gordon, A. N. Hamilton, G. MacHutchon, T. Mahon, E. McClaren, V. Michelfelder, B. Pollard, G. Sutherland, S. Taylor, L. Waterhouse. 2009. Part 3: knowledge base for focal species and their habitats in coastal BC. Report 3 of the EBM Working Group Focal Species Project. Integrated Land Management Bureau, Nanaimo, BC.
- Krawchuk, A., K. L. Larsen, R. D. Weir, and H. Davis. 2005. Passage through a small drainage culvert by mule deer, *Odocoileus hemionus*, and other mammals. *Canadian Field-Naturalist* 119:296-298.
- Kyle, C. J., R. D. Weir, N. J. Newhouse, H. Davis, and C. Strobeck. 2004. Genetic structure of sensitive and endangered northwestern badger populations (*Taxidea taxus taxus* and *T. t. jeffersonii*). *Journal of Mammalogy* 85:633-639.
- MacHutchon, A. G., S. Himmer, H. Davis, and M. Gallagher. 1998. Temporal and spatial activity patterns among coastal bear populations. *Ursus* 10:539-546.
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- Weir, R. D., H. Davis, and C. S. Hoodicoff. 2003. Conservation strategies for North American badgers in the Thompson and Okanagan Regions. Final report for the Thompson-Okanagan Badger Project. Prepared for the Habitat Conservation Trust Fund.
- Weir, R. D., H. Davis, D. V. Gayton, and E. C. Lofroth. 2015. Fact or fantasy? Damage to livestock and agricultural machinery by North American badgers and other burrowing mammals in British Columbia, Canada. Pages 299-310 *in* G. Proulx, and E. Do Linh San, editors. *Badgers: systematics, biology, conservation and research techniques*. Alpha Wildlife Publications, Sherwood Park, Alberta.
- Weir, R. D., H. Davis, C. S. Hoodicoff, and K. W. Larsen. 2005. Life on a highway: Sources of mortality within an endangered British Columbian badger population. Pages 1-9 *In* T. D. Hooper, technical editor. *Proceedings of the Species at Risk 2004 Pathways to Recovery Conference*. March 2–6, 2004, Victoria, BC.

PAST TASK FORCES/RECOVERY TEAMS/BOARDS

- Representative of the College of Applied Biology for a Species at Risk Task Force (2009)
- Public representative on the board of BC Hydro's Fish and Wildlife Compensation Program-Coastal (2012-2015)
- Member of the *jeffersonii* Badger Recovery Team and Communication/Extension Recovery Implementation Group
- Past member of the *macfarlanei* Screech-Owl Recovery Team

COMMUNITY WORK

To ensure that species at risk are considered in local area planning, I was a member of the Environmental Policy and Natural Lands Working Group that developed goals, objectives, strategies and policy recommendations that were considered for inclusion in the Regional Growth Strategy for the Regional District of North Okanagan.

I coordinated a successful conservation covenant on private land utilized by a species at risk (Western Screech-owl) including acquiring funds to cover covenant costs.

CERTIFICATES & DESIGNATIONS

- ArcGIS: Introduction to GIS and ArcGIS: GIS Data & Analysis (Camosun College; 2013-2014)
 - "Reliability" clearance with Canadian Industrial Security Directorate
 - OFA Level 1 First Aid with Transportation Endorsement (includes CPR)
 - Vaccinated against rabies
 - Snowmobile Operators Course
 - Firearms Licence
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