

Education

B.Sc Environmental and Conservation Sciences , University of Alberta, 1997

M.Sc Wildlife Ecology and Management, University of Alberta, 2001

Certifications

Registered Professional Biologist (RPBio), British Columbia College of Applied Biology

Professional Biologist Alberta Society of Professional Biologists

Career Summary**Wildlife Biologist**

Paula is a Principal and Senior Wildlife Ecologist with 20 years of experience in consultation around species at risk, environmental assessment, environmental protection planning, wildlife mitigation and monitoring, integrated land use planning, federal and provincial permitting within western Canada, habitat restoration/ reclamation (and link to GHG offsets), construction monitoring, long term operational wildlife monitoring design and delivery, and wildlife/bird deterrent practices. Paula provides facilitation and consultation with clients from multiple sectors including power, infrastructure, oil and gas, oilsands, pipelines, forestry, transportation, mining, federal Public Works, Provincial and Territorial governments. Primary technical role has covered projects with wildlife and wildlife habitat and species at risk sensitivities, consulting on recovery strategies, residual impacts and mitigation, operating guidelines/provincial and federal legislation and policy, as well as the facilitation of mitigation planning with collaborative efforts across sectors, and implementation of restoration and habitat offsets. Within Canada Paula is a recognized subject matter expert on woodland caribou and habitat restoration. In addition to her expertise in wildlife and wildlife habitat, Paula serves as a Project Director, having led multi-disciplinary teams through environmental assessment, permitting and authorization. Her involvement includes footprint planning and optimization to avoid and minimize environmental effects, strategic planning of collaborative landscape scale habitat restoration projects, feasibility studies around captive rearing facilities and caribou recovery planning for Governments and led research projects to test efficacy of mitigations. Paula has provided hearing support and provided expert testimony at regulatory hearings. Lastly, Paula leads Indigenous inclusion planning within project delivery, as well as facilitates Indigenous and stakeholder meetings and workshops.

SELECT RELEVANT PROJECT EXPERIENCE

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| Dezé Energy Corp. NT, Canada | Key line of inquiry on caribou for the Taltson Hydroelectric Expansion Project as part of the Developers Assessment Report as outlined by MVEIRB terms of reference. |
| Paramount Resources Ltd. NT, Canada | Responsible for wildlife environmental assessment, supplemental questions and hearing for wildlife and woodland caribou cumulative environmental effects within the NT (Deh Cho). |
| BC Oil and Gas Research and Innovation Society, Research and Effectiveness Monitoring Board Fort St. John/Fort Nelson, NE BC | Planning Lead and Stakeholder engagement Lead, author; in first Canadian caribou range-landscape scale Habitat Restoration Program Plan as well as subsequent detailed field Implementation. Over 1000 km linear footprint inventoried for restoration candidacy, field trothed and direct restoration treatments applied on 50 km. Development and implementation of Indigenous Inclusion Plan and training. Permits obtained under Forest Practices Act, as well as AOA and mitigation, watercourse crossing application, water use permit, road use agreements, trapper and public open house session. Senior lead, author and workshop facilitator for Provincial Restoration Toolkit (2014), BC Restoration Monitoring Framework (2015) and Strategic Habitat Restoration Framework (2018). |
| Alberta Transportation, Edmonton, AB | Project director/facilitator with Government of Alberta Ministries and Environment Canada for development of Caribou Habitat Compensation Framework, Literature Review and Plan. |

- BC OGRIS, Research and Effectiveness Monitoring Board, BC** Research explored Low Impact Seismic natural vegetation recovery as influenced by line orientation, mulch distribution, BEC unit as well as line width and age. Data from conventional seismic lines were analyzed for comparisons in vegetation recovery post disturbance.
- Ministry of Forests, Lands and Natural Resource Operations, BC, Canada** Primary author retained by the Government of BC to complete an overview on knowledge and research on restoring degraded habitat for woodland caribou with restoration option recommendations to reduce impacts on woodland caribou
- Government of Northwest Territories, Department of Infrastructure, NT** Invited to participate in GNWT caribou habitat restoration and offsets workshop as an expert on habitat restoration. Provided third-party technical review of Associated Environmental Consultants Inc. draft and draft final version of the Final Caribou Habitat Offset Plan for the Tłı̄ch̄o All Season Road to meet the Mackenzie Valley Environmental Impact Review Board (MVEIRB; EA1617-01), Measure 6-3, requiring a plan to offset any residual effects on effective boreal caribou (t̄odzi) habitat caused by building and operating the road.
- Government of Alberta, Alberta Environment and Parks, AB, Canada** Project director/author of feasibility study on woodland caribou population recovery rearing facility as a recovery tool. Led Project Team of subject matter experts who worked collaboratively to evaluate the risks, potential mitigations, and operational considerations, and using optimization tools, identified areas of highest suitability for a rearing facility, costs/benefits, and next steps.
- Forest Resource Improvement Association of Alberta, Edmonton, AB** Senior restoration technical lead on the development of Operational Restoration Plans within Little Smoky caribou range, the Naraway caribou range, and the Red Earth Caribou Range following Alberta Restoration Framework. Plans included Indigenous inclusion, industry and trapper stakeholder engagement, and for the Red Earth range a partnership with Fort McKay First Nations to develop the plan and provide Indigenous input into restoration techniques..
- Coastal GasLink Project** Senior Qualified Professional technical advisor supporting construction monitoring and regulatory support on the Coastal GasLink Pipeline Project. Services include soil salvage monitoring, wildlife, amphibians (including salvage) bird nests, bear/fisher/wolverine dens, mineral licks, wetlands and rare plants.
Peace Region / Omineca Region, BC
- ATCO Group of Companies** Senior technical advisor on minimizing incidental take and supporting compliance under the *Migratory Bird Convention Act* (MBCA), *Species At Risk Act* (SARA) and provincial requirements under the *Wildlife Act*. Project Director for wetlands assessment and associated provincial permitting and compliance under the federal Fisheries Act. Start of life as well as operational support.
Various Projects, AB
- Environment and Climate Change Canada** Primary author of a Literature Review Report and an Options Identification Report to identify approaches to setting offset multipliers for an offsetting policy specific to Woodland Caribou on behalf of Environment and Climate Change Canada (ECCC) in consideration of provincial and territorial jurisdictional policy.
Ottawa ON
- Teck Coal Ltd. Fording River Operations and Elk Valley Operations** Senior technical advisor in the preparation of terrestrial studies, baseline reports and assessment (various) under the *Mines Act* and *Environmental Management Act*. Lead author in the preparation of a helicopter drilling program wildlife mitigation plan to minimize impacts to wildlife (big horn sheep, large carnivores, elk, moose, American badger and birds).
East Kootenay Region, Elk Valley, BC
- KinderMorgan TransMountain** Senior technical lead on the preparation of internal guidance / decision support tools as well as internal training to support compliance of operational and construction activities with the *Migratory Birds Convention Act*.
BC (various), AB

- BC Ministry of Forests
Lands and Natural
Resource Operations
and Rural
Development
(MFLNRORD)**
Northern Interior BC
- Principal investigator working with the Province to develop a Tactical Restoration Plan for the South Peace Caribou Ranges to serve as a starting point for identifying priorities for habitat restoration for the purpose of caribou recovery. Prepared communication materials for engaging First Nations and impacted stakeholders to identify priorities for restoration and to initiate a dialogue about methodologies, restoration techniques, and opportunities for partnership and collaboration.
- Parks Canada Agency
Confidential Project**
Yoho National Park, BC
- Project Director and senior technical review for Detailed Impact Assessment (DIA) of the TransCanada Highway Twinning km 88-128 through Yoho National Park. Planning phases - including locating wildlife crossing structures and minimizing impacts to wetlands - completed with prime design engineer to minimize environmental effects within the National Park. Senior technical reviewer on several Basic Impact Assessments (BIA) for Engineering Highway Services.
- BC MFLNRORD**
Tumbler Ridge, BC
- Project Director and Senior technical lead on the development of Phase 1 and Phase 2 Quintette Southern Mountain Caribou Range Implementation Restoration Plans. Developed costing and procurement strategy with the Province.
- Barkerville Gold Mines
Ltd. Cariboo Gold
Project**
Wells, BC
- Prepared Caribou Mitigation and Monitoring Plan (CMMP) for the Bonanza Ledge Mine in the Cariboo Gold District of BC, in collaboration with BC MOE, following Procedures for Mitigating Impacts on Environmental Values with consideration of available information and management actions identified by the Province.
- Walter Energy**
Tumbler Ridge, BC
- Senior Technical Lead on Caribou Mitigation and Monitoring Plan (CMMP) for coal mine located in in the South Peace Northern Caribou region. Designed around Implementation Plan for the Ongoing Management of South Peace Northern Caribou and regional planning initiatives to manage, recover, and augment caribou herds in NE BC. Plan demonstrated efforts to avoid, mitigate and restore residual impacts to caribou and habitat, with innovative approach to offsetting.
- Caribou Landscape
Management
Association and Forest
Products Association
of Canada**
- Audit of industrial best practices implemented by forestry and oil and gas developers within caribou ranges across Canada. Interviewed 50+ practitioners and high level planners to provide expert opinion on mitigation effectiveness, including caribou habitat protection and restoration zones moving in time and space within the landscape
- PTAC, Foothills
Landscape
Management Forum
and GoA**
- Collaborative research to monitor vegetation attributes 9-13 years post treatment on restoration sites. Developed trajectories for vegetation recovery following restoration treatment on seismic lines in consideration for wildlife movements.
- TransCanada Pipelines**
- Habitat restoration and offset consultation with Aboriginal stakeholders and National Energy Board. Development Caribou Habitat Restoration Plans with measurable targets.
- Canadian Association
of Petroleum
Producers
AB, Canada**
- CAPP representative for regional Caribou Landscape Team, developed landscape management options for caribou in NE Alberta. Provided expert input to predator/prey and cumulative effects modelling to capture biology, distribution and abundance. Author for State of the science review for woodland caribou in western Canada (updated 2006, 2011, 2014), research gap analysis, audit of mitigation practices. Developed industry recommendations with parallel management actions to be led by GoA. Presented to ADMs
- Canadian Boreal
Forest Agreement
Secretariat**
- Provided facilitation and technical expertise on woodland caribou mitigation practices for caribou action planning workshop held for CBFA Regional Working Group members.

- Anconia Resources Corp., Nunavut, Canada** Developed wildlife monitoring program to provide increased knowledge on caribou movement within the Kivalliq region of Nunavut. Supervised wildlife monitoring training, implementation and reporting during drilling.
- Government of Alberta** West Central Alberta Caribou Habitat Selection Analysis to support range planning process, as scenario planning regarding footprint and habitat in the west central ranges.
- Enbridge Pipelines Ltd. Line 3 Replacement Project, SK and MB** Wildlife Component Lead and senior technical expert for regulatory and FN/Stakeholder liaison for the Line 3 Replacement Project construction monitoring (Saskatchewan and Manitoba Spreads). Site specific mitigation plans for Northern Leopard Frog (relocation, exclusion barriers, wintering ponds), Species At Risk, raptor, breeding birds, grouse, reptile Environmental Protection Plan mitigation measures implemented. Development of same day mapping and reporting of wildlife setbacks and timing constraints related to wildlife.
- TransCanada Pipelines Limited, Leismer to Kettle River Crossover NE Alberta** Senior wildlife lead on Environmental and Socio-Economic Assessment (ESA) Section 52 National Energy Board application. Hearing expert witness. Developed preliminary and final caribou habitat restoration plan including consultation to TC Energy and the NEB on habitat restoration. Access control mitigation planning, third party review of offsets plan, consultation with First Nations.
- TransCanada Pipelines Groundbirch Pipeline, BC** Senior Wildlife Component lead for Environment and Socio-Economic Assessment (ESA), baseline field data collection, NEB Section 52 filing.
- TransCanada Pipelines Towerbirch Expansion Project WC AB to NE BC** Senior Wildlife Lead for ESA Section 58, baseline field data collection, provincial permit applications, certificate conditions, EPP, construction monitoring. Responsible for all aspects of data collection and analysis and regulatory submissions. Liaison with regulators, project stakeholders, First Nation engagement, expert hearing support, Preparation of old growth forest bird protection plan.
- TransCanada Pipelines Northern Courier Pipeline Project Fort McMurray, AB** Project Director and Senior wildlife technical lead for construction monitoring to minimize incidental take of breeding birds and species at risk. Developed client specific risk-based decision support framework. Daily communication and reporting met NGTL and EI's needs to support fluid construction schedule.
- TransCanada Pipelines Internal ESA Team, Calgary AB** Coordinated and prepared background materials on an Environmental and Socio-Economic Assessment (ESA) Methodology Workshop for Species At Risk. Involved coordinating legal, multiple consultants and TransCanada's internal ESA team, review of multiple ESAs and development of a consistent assessment approach.
- Mackenzie Gas Producers Pipeline Team NT & AB, Canada** Collected ecological land classification data in Northwest Territories and NW Alberta. Prepared summary reports for wildlife studies, and completed comprehensive literature review on potential VEC species occurring along the proposed pipeline route.
- Alaska Gas Producers Pipeline team BC & AB, Canada** Collected ecological land classification data in NE British Columbia and NW Alberta, and assisted in a summary report for wildlife data collected as part of a feasibility study for a proposed natural gas pipeline. Prepared permit applications and summary reports for wildlife studies, and completed comprehensive literature review on potential VEC species occurring along the proposed pipeline route.

- Horse Lake First Nation Industry Relations Corporation SemCams Redwillow Pipeline Project**
AB, Canada
Prepared an environmental and socio-economic assessment review on the SemCams Redwillow Pipeline Project on behalf of Horse Lake First Nations Industry Relations Corporation (HLFN IRC). Provided consultation to HLFN INC on pre-hearing and NEB hearing. Consulted on woodland caribou, proposed access management measures design and recommended pipeline mitigation. NEB hearing expert witness
- TransCanada Pipelines Ltd.** (various projects)
Prepared access control monitoring protocol to meet NEB approval conditions related to a number of projects where access control monitoring is an approval condition.
- Shell Canada Ltd.**
Fort McMurray
AB, Canada
Wildlife component lead for Shell Jackpine – Phase 1 project. Prepared Application Case and Planned Development (CEA) Case for wildlife Environmental Impact Assessment component of proposed oil sands open pit mine. Responded to supplemental questions from government and stakeholder groups and hearing technical support for wildlife and wildlife habitat.
- Brion Energy.** AB,
Canada
Provided consultation on caribou mitigation options for the Dover Commercial Project. Expert witness for the Dover Commercial Project commercial hearing, specific to woodland caribou and support to wildlife technical component. Prepared corporate caribou strategy and provided senior technical guidance on the review and mapping of linear disturbance natural revegetation and habitat restoration potential. Prepared Habitat Restoration Options report
- Brion Energy.** AB,
Canada
Supported local Aboriginal engagement sessions for input into the Dover Commercial Project Wildlife Mitigation and Monitoring Plan (WMMP) and Caribou Mitigation and Monitoring Plan (CMMP). Senior advisor and reviewer of the Dover Commercial Project WMMP and CMMP including regulator consultation.
- MEG Energy Inc.**
AB, Canada
Prepared long term wildlife monitoring plan, mitigation monitoring plan and wildlife habitat enhancement plan as required under Alberta Environment approval conditions for an approved in-situ project (2008). Wildlife component lead for Provincial Environmental Impact Assessment, and field lead for breeding bird, owl call playback, amphibian, winter track, aerial ungulate, and raptor surveys. Prepared pre-disturbance assessment, Application Case and Planned Development (CEA) Case for wildlife. Consulted on best operating practices and footprint optimization in relation to woodland caribou and prepared a corporate caribou protection plan strategy, annual Caribou Protection Plan(s) and developed joint industry project collaborative habitat restoration project plan. Managed annual caribou monitoring surveys and above ground pipeline location assessment survey and consultation, and prepared baseline reports. Wildlife issue scoping with internal project team and client and consultation with stakeholders and regulators.
- Senior wildlife technical review and strategic support in the development of a woodland caribou mitigation monitoring program and caribou habitat restoration plan including access control, completion of a linear disturbance inventory and restoration implementation treatment options.

**Canadian Natural
Resources Ltd.**
AB, Canada

Involved in the preparation of the wildlife component of an Environmental Impact Assessment Application Case and Planned Development (CEA) Case which involved determining impacts of a mine to wildlife abundance, wildlife habitat and wildlife movement corridors from the Horizon Project. Completed winter wildlife surveys for use within a wildlife movement corridor study.

Technical lead for the preparation of long term wildlife monitoring program plan, habitat enhancement plan and mitigation monitoring plan (2003). Project manager (2003-2005, 2006-2008) for implementation of long-term wildlife monitoring program, wildlife mitigation monitoring program and wildlife habitat enhancement program for the Primrose and Wolf Lake and Primrose East Projects. Prepared long-term wildlife and habitat enhancement monitoring program proposals, initiated discussions with regulators for input into monitoring proposals and proposals were approved. Prepare and review annual monitoring reports, Caribou Protection Plans and implement long term wildlife habitat enhancement program (habitat restoration) as required under Alberta Environment approval conditions for the existing Primrose and Primrose East SAGD projects within the Cold Lake Air Weapons Range Caribou Area (2003-ongoing).

Wildlife and wildlife habitat technical component lead for the Primrose East in-situ oilsands project and Provincial EIA application. Collected baseline data for SAGD Project through winter mammal track count surveys, breeding bird, owl surveys and aerial ungulate survey. Prepared baseline reports on wildlife inventory analyses.

Senior wildlife advisor and reviewer for the development of the Kirby In Situ Oil Sands Project Wildlife Mitigation and Monitoring Program (WMMP) and Caribou Mitigation and Monitoring Program (CMMP) plans. Project director and senior wildlife advisor during the implementation of a linear deactivation and habitat restoration program as part of the CMMP on legacy disturbance features within a regional area inside the boundaries of the Cold Lake caribou range. Treatments implemented were coordinated and monitored as part of the Regional Industry Caribou Collaboration (RICC). Linear deactivation treatments were designed and planned within the region to contribute to effectiveness monitoring of mitigation treatments for caribou and reduced predation pressure and access management. Provided strategic support to client to coordinate wildlife monitoring (wolf and bear collars) within the collaborative RICC monitoring program design and University of Alberta researchers

SELECT PUBLICATIONS AND REPORTS

- Bacon, M and P. Bentham. 2020. The Use of Multipliers for a Caribou Offsetting Policy: Literature Review. Prepared for Environment and Climate Change Canada, Ottawa, Ontario internal document
- Bacon, M. and P. Bentham. 2020. The Use of Multipliers for a Caribou Offsetting Policy: Options Identification Report. Prepared for Environment and Climate Change Canada, Ottawa, Ontario internal document
- Bentham, P. L. Gomez, J. Lightbown and M. Taylor. 2016. Monitoring and mitigation of breeding birds during pipeline construction. Environmental Concerns in Rights-of-Way Management 11th International Symposium (2015) Proceedings. J. Doucet (ed.) Utility Arborist Association.

- Bentham, P., and B. Coupal. 2015. Habitat Restoration as a Key Conservation lever for Woodland Caribou: A review of restoration programs and key learnings from Alberta. Rangifer.
- Bentham, P. and B. Coupal. 2016. Caribou Habitat Restoration for Pipeline Projects. Environmental Concerns in Right-of-Way Management 11th International Symposium (2015) Proceedings. J. Doucet (ed.) Utility Arborist Association
- Canadian Association of Petroleum Producers (CAPP). 2012. Athabasca Caribou Project Industry-Led Management Options. Prepared for: CAPP Species At Risk Working Group, Calgary, Alberta. Prepared by: Paula Bentham, Golder Associates, Edmonton and Wayne Thorp, Peace River Alberta. 28 pp+appendices
- Caribou Landscape Management Association (CLMA) and the Forest Products Association of Canada (FPAC). 2007. Audit of Operating Practices and Mitigation Measures Employed within Woodland Caribou Ranges. Prepared for: CLMA and FPAC. Prepared by: P. Bentham, Golder Associates, Edmonton, AB. 135pp + app.
- Coupal, B. and P. Bentham. 2014. If You Build It, Will They Come? Caribou Habitat Restoration for Pipeline Projects. In Proceedings of the 10th International Pipeline Conference & Exposition IPC 2014, September 29 – October 3, 2014, Calgary, Alberta, Canada.
- Golder. 2018. Enabling Solutions for Boreal Caribou Habitat Restoration: A Framework. Prepared for: British Columbia Oil and Gas Research and Innovation Society, REMB. Prepared by: P. Bentham.
- Golder. 2012. Boreal Caribou Habitat Restoration. Prepared for Species at Risk Recovery Implementation Manager, Ministry of Forests, Lands and Natural Resource Operations Fish Wildlife and Habitat Management Branch, Prince George, BC. Government of BC. Prepared by: P. Bentham and B. Coupal.
- Nielsen, D., M. Sherrington, C. De La Mare, P. Bentham and C. Fordham. 2004. Seismic Line Reclamation Study in the Suncor Energy Firebag Project Area. Prepared for Suncor Energy Inc.
- Oberg, P. 2001. Responses of Mountain Caribou to Linear Features in a West-Central Alberta Landscape. M.Sc. Thesis, University of Alberta, Edmonton, Alberta.
- Oberg, P., C. Rohner, and F. Schmeigelow. 2000. Responses of Mountain Caribou to Linear Features in a West-central Alberta Landscape. In Proceedings from the 7th International Symposium on Environmental Concerns in Rights-of-Way Management, Sept, 2000, Calgary.