

Mesocarnivore Distribution Modelling

Project aim

The Ministry of Water, Land and Resource Stewardship (WLRS), Ecosystems Branch, is compiling and organizing mesocarnivore records across British Columbia. WLRS is using this information to **update the distribution and population trends of mesocarnivores in B.C.** In collaboration with communities interested in wildlife, such as scientists, trappers, and First Nations, the information compiled will help strengthen our understanding of the current geographic extent of mesocarnivores, assess the accuracy of existing population models, and determine if populations are stable, increasing, or decreasing. The results from this project will inform conservation and recovery efforts for mesocarnivores.

The scope of this project includes any record of any of the 18 species of mesocarnivores (table below) throughout B.C. *If you have already processed potential prey such as porcupine or snowshoe hare, please include these records as well. *

Common name	Scientific name
Fisher	<i>Pekania pennanti</i>
Raccoon	<i>Procyon lotor</i>
Striped skunk	<i>Mephitis mephitis</i>
Western spotted skunk	<i>Spilogale gracilis</i>
Wolverine	<i>Gulo gulo</i>
American marten	<i>Martes americana</i>
Pacific marten	<i>Martes caurina</i>
Haida ermine	<i>Mustela haidarum</i>
Short-tailed weasel	<i>Mustela erminea</i>
Least weasel	<i>Mustela nivalis</i>
Long-tailed weasel	<i>Neogale frenata</i>
American mink	<i>Neogale vison</i>
American badger	<i>Taxidea taxus</i>
Bobcat	<i>Lynx rufus</i>
Lynx	<i>Lynx canadiensis</i>
Coyote	<i>Canis latrans</i>
Red fox	<i>Vulpes vulpes</i>
River otter	<i>Lontra canadensis</i>
Prey species	
Porcupine	<i>Erethizon dorsatum</i>
Snowshoe hare	<i>Lepus americanus</i>

Background and questions

Distribution models help inform conservation planning and management. However, in B.C., there is currently limited information available about the distribution, size, and trends of mesocarnivore populations, as well as their basic ecological relationships. In addition, the ability of B.C. ecosystems to support mesocarnivores populations has likely declined due to habitat changes. This hinders adequate management decisions to maintain and recover mesocarnivore populations.

Therefore, this project is interested in **provincial scale distribution and populations trends**. The specific questions WLRS has are:

- What are the population trends over time for mesocarnivore species in BC?
- What is the distribution of mesocarnivore species in BC?
- How well do existing habitat models predict mesocarnivore species' distributions in BC?

The intent is to answer these questions for all mesocarnivores. Models will be written to run programmatically with preliminary models fit to fisher data.

What will I be asked to do?

You will be sent a link to an online form where you will be asked to attach an excel or csv file with your records. In the form you will also find different templates for various data types. Please select the one that best matches your data. Alternatively, you can upload your data in its current format as long as each row contains the following information:

- Project name: Unique ID that identifies the project.
- Type of record: trail camera photographs, hair sampling, visual observation, etc.
- Lat and Lon: Two columns with spatial coordinates, preferably in decimal degrees.
- Sampling effort: Two columns with the start date and end date of the survey.
- Date and time of the observation: Depending on the type of record only date might be available.
- Species name.

How will my data be protected?

When uploading your information, you will be prompted to select the data sharing options you are comfortable with. The options are:

Project scale use	Raw contributed data will only be used for the purpose of distribution maps and modelling. Data will be used for this objective only and will not be shared outside of the Conservation Science Section of the Ministry of Water Land and Resource Stewardship (WLRS). Data contributors will only be contacted in case of peer-review publications. All research data will be held
-------------------	---

	and stored in perpetuity in a password protected folder on the network drive of the Ecosystems Branch of WLRS. The Carnivore Conservation Specialist (currently Joanna Burgar) will remain responsible for the data.
Secured [Managed as secured datasets within government data systems]	Contributed data will be incorporated into provincial scale data systems but managed as secure proprietary data under the Species and Ecosystems Data and Information Security policy. Data secured under the Species and Ecosystems Data and Information Security policy may be shared by request with parties outside of government that have an appropriate rationale and sign a confidentiality agreement. Contributed data will not be made publicly accessible.
Publicly accessible [Open data]	Contributed data will be incorporated into provincial scale data systems and managed as open data. Data will be publicly accessible. Example of publicly available database.
Other	Other options are possible, contact us if you want to develop a data information sharing agreement.

Questions?

If you have any questions or feel that the project aims will conflict with your current research goals, please reach out to Cindy Hurtado or Joanna Burgar (mesocarnivores@gov.bc.ca).