What is being monitored and why is it being monitored?

We are monitoring the presence, abundance, and distribution of mid-size carnivores, especially lynx, wolverine, and fisher. More specifically, we are conducting long-term monitoring of these species across the Southwestern Crown landscape to detect changes in their distribution and abundance during implementation of the Collaborative Forest Landscape Restoration Program (CFLRP).

How are we monitoring?

We are using winter track surveys, bait stations, and remote cameras across the 1.5 million acre Southwestern Crown landscape. Track surveys are conducted along roads within 5 mi x 5 mi grid cells (85 grid cells with majority of area in SWC). Multiple bait stations are deployed within each grid cell, and remote cameras are placed at a subset of bait stations. Genetic material from hairs and scat are collected from backtracking and bait stations, and analyzed to identify species, gender, and individuals (when possible).

Key Findings from 2012-2014: (also see maps below)

- **Lynx**: Detections in 36 unique grid cells, with consistency in the number of cells with detections each year (19-21 cells per year). 18 individual lynx detected (13 males and 5 females). The limited number of females detected is a concern that we plan to focus on in the future.
- **Wolverine**: Detections in 38 unique grid cells; number of cells with detections increased over the 3 years, due in part to improved sampling techniques, but possibly also to changes in population numbers; more monitoring is needed. 16 individual wolverines were detected (7 males and 9 females). Long distance movements and highway crossings were observed.
- **Fisher**: No fishers have been detected during this monitoring, although the same methods have been successful at detecting fishers in other parts of the Northern Rockies.
- **Other species**: Track observation and genetics have also been collected for many other species including marten, bobcat, mountain lion, and wolves.
- We have developed and tested a rigorous methodology for monitoring changes in abundance and distribution over time for multiple carnivore species simultaneously; including identifying many cost efficiencies that maximize the detection of the target species.
- Track surveys have proven to be the most effective method for detecting lynx presence in a grid cell, and are often sometimes useful for collecting genetic information.
- Bait stations rarely indicate presence where we have not already detected presence via tracks. However, bait stations add insight as to abundance of lynx and wolverines within a grid cell by obtaining genetic samples that inform us about individuals and other genetic measures.
- These methods are now being used by other landowners in and around the SW Crown including the Bureau of Land Management (BLM).
- The project shows the benefits of monitoring partnerships between federal agencies and outside partners that can provide additional expertise, capacity, and funding.
How will this information be used?

Data on the distribution and relative abundance of carnivores can be used to monitor population changes over time, locate areas of potential use by these species, and identify places where improvements to habitat may be appropriate. They can also be used in effects analyses in documents completed under the National Environmental Policy Act (NEPA). The results also have the potential to inform a wide variety of regional management efforts, including (but not limited to): the development of new Forest Plans; the development of restoration projects by local collaborative groups; monitoring programs for Region 1 of the U.S. Forest Service; and management planning for these species by the U.S. Fish and Wildlife Service and Montana Fish, Wildlife & Parks.

Next steps: Surveys have continued in the winter of 2015 and these data will soon be analyzed. Additional efforts have also started or may commence in lands surrounding the SW Crown, including other parts of the Flathead National Forest and BLM lands both inside and outside the SW Crown landscape. Additionally, the Forest Service is discussing the use of our methods at a regional scale. We hope to continue monitoring through 2022, at a minimum.

Reports and Resources:

- Southwestern Crown Collaborative webpage: http://www.swcrown.org/
- USFS Collaborative Forest Landscape Restoration Program: http://www.fs.fed.us/restoration/CFLRP/

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Partners:
Flathead, Helena, and Lolo National Forests
USFS Rocky Mtn Research Station, Missoula
USFS Region 1
Northwest Connections
Swan Ecosystem Center
Blackfoot Challenge
University of Montana
The Wilderness Society
Bureau of Land Management
Montana Fish, Wildlife and Parks
Montana Department of Transportation
Montana Department of Natural Resources and Conservation
The Nature Conservancy
Wild Things Unlimited

Grid cells with lynx detections (yellow).
Grid cells with wolverine detections (blue).