



Rocky Mountain Research Station

Wildlife Corridors and Habitat Fragmentation

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Climate change, urbanization, fire, timber harvest, and even exotic weed invasions fragment landscapes. Fragmentation of the landscape diminishes critical habitat for some species and prevents connectivity among populations, thus increasing a population's likelihood of extinction. To combat these effects in an increasingly fragmented landscape, we need to identify critical corridors and manage these lands to maintain connectivity.

IMPORTANCE

Climate change and habitat degradation can be partially offset by ensuring connectivity among wildlife populations. In recognition of this fact, diverse interest groups such as the Western governors, various non-government organizations, and many state agencies are looking to partner with scientists who can elucidate non-developed areas (state lands and National Forests) that are currently critical for connectivity and areas that can be purchased or swapped to foster critical connectivity.

The RMRS Wildlife and Terrestrial Ecosystems Program has initiated an effort to develop quantitative methodologies to identify species movement pathways. Through our "landscape genetics" approach, we can ultimately provide land use planners and wildlife managers with transparent, species specific connectivity maps. In addition, we can aggregate these corridor maps for multiple species synergistically identifying one piece of land that is valuable for the persistence and connectivity of many species.



EXPECTED OUTCOMES

We have published empirical corridor maps for both black bears and wolverines in premier scientific journals. We are currently engaged in building models for fisher, marten, and evaluating corridors for multiple additional species. Through this work, we will be able to formally test whether similar landscape features serve as corridors and/or barriers for multiple species or whether or not each species sees the landscape uniquely. This will have a large impact on land acquisition and protection by both state and federal agencies. The maps we have produced are already in high demand by State and Federal agencies to help them prioritize land management activities.

PARTNERS AND COLLABORATORS

- Forest Service Regions 1, 4, 5, 6
- University of Montana, Montana State University, Oregon State, University of Idaho
- Montana Fish Wildlife and Parks, Idaho Fish and Game
- Coeur D'Alene Tribes, National Parks
- Wildlife Conservation Society and other non-governmental organizations