Grizzly Bear Habitat Selection and Predicted Movement Corridors in Western Montana

Sarah Sells*, Wildlife Biology Program, University of Montana, Missoula
Cecily Costello, Montana Fish, Wildlife and Parks
Paul Lukacs and Lori Roberts, Montana Fish Wildlife and Parks
Milan Vinks, Montana Fish, Wildlife and Parks

*Indicates Presenter

**Indicates Student Presentation

Once-contiguous grizzly bear populations remain largely isolated, and connectivity among federal recovery areas is a key concern for conservation efforts. Research has been needed to assess potential corridors that could promote genetic and demographic connectivity for males and females among recovery ecosystems. Our objective was to model grizzly bear habitat use, movement, and population connectivity. We employed GPS data from male and female grizzly bears in the Northern Continental Divide Ecosystem (NCDE) and an integrated step selection function approach to test hypotheses of habitat selection and simulate movements. Results demonstrate highly individualistic behaviors, with some individuals avoiding and others preferring various features like forest edge, riparian areas, etc. Such individualism supports the need for an individual-based modeling approach to understand and predict grizzly bear behavior. We accordingly first used each individual's model to simulate movements within and near the NCDE using correlated random walks. We then used each model to simulate pathways from the NCDE to nearby recovery areas using randomized shortest paths. Our work is ongoing; however, preliminary results highlight potential pathways that could be targeted for proactive conservation efforts such as habitat conservation, conflict mitigation, and transportation planning.