Estimating Lynx Habitat Under Future Fire Management and Climate Change Scenarios

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Climate changes have the potential to considerably alter the habitat of Canada lynx (*Lynx canadensis*), which are dependent on snowshoe hare throughout their range. Both species occupy areas of high altitude forest with dense cover of shrubs and saplings. The Fish and Wildlife Service has designated critical habitat for lynx, but there is little research on how these areas will change with a changing climate. We use the simulation model FireBGCv2 to run scenarios comparing climate change, fuel treatments, and fire suppression. Our results suggest that fire suppression has the most important future benefit in maintaining lynx habitat, as allowing natural fires to burn reduces the quality of lynx habitat over a fifty year modeling period. Although fires can generate the early seral stage that defines quality lynx habitat, their frequency prevents much of the modeling landscape from reaching this stage. Simulation modeling can provide a valuable platform to view the future of lynx habitat under climate change, but the limitations are numerous.