Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Quantifying the Effects of 2003 Fires on Fire-dependent Bird Species in Glacier NP
Discipline: Natural Resources
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Montana
Effective Dates: 6/15/2006- 7/15/2008
Funding Amount: $50,000
Investigators and Agency Representative:

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Project Abstract:

The University of Montana will work with Glacier NP to status of fire-dependent bird species in areas of the park that were affected by the 2003 fires. This is a two-year project that will cover the summer seasons of 2006-2007.

The 2003 fires encompassed approximately 135,000 acres—over 19% of the forested area of Glacier. These wildfires created patches of standing-dead, burned trees. These special conditions cannot be created through any process other than crown fire. Indeed, standing-dead trees in severely and moderately burned forests provide important feeding and nesting conditions for a variety of birds—conditions that cannot be duplicated without fire. At least 12 bird species (including Black-backed Woodpecker and Olive-sided Flycatcher) are more abundant in recently burned forest than in any other vegetation type, and some (e.g., Black-backed and Three-toed woodpeckers) are nearly restricted in their distributions to such patches.

Due to their association with fire, the Black-backed Woodpecker and Olive-sided Flycatcher are Species of Special Concern in Montana. In addition, several species (Black-backed and Three-toed Woodpeckers and Brown Creeper) are nearly restricted in their distribution to unlogged post-fire forests (as compared to logged burns). Therefore, Glacier National Park is likely to provide source habitat for Black-backed Woodpeckers, a fire dependent species that nearly exclusively nests in unlogged post-fire forests. In Glacier NP, the UM cooperators will come up with distribution information for these important bird species in relation to three vegetation types and two categories of fire severity. These data will be summarized in GIS-based maps of nest site locations in relation to the mapped distribution of the categories above and in relation to local-scale variables surrounding both nest trees and randomly selected trees within four 300-ha sites. These data will allow cooperators to build reasonable habitat suitability models that can be used by managers to predict not only the sites that should be most suitable to the most fire dependent bird species, but which within-site and landscape variables seem to be most important to the same species.

Outcomes with Completion Dates:

December 2006: annual report due

December 30, 2007: Final report due

Also the cooperators will provide the park with data files and a peer-reviewed publication.

Keywords: fire ecology, bird species, black-backed woodpecker, olive sided flycatcher, brown creeper, population surveys, Glacier National Park, University of Montana