



TOP: Clark's Nutcracker, *Nucifraga columbiana*

BOTTOM: Red-breasted sapsucker, *Sphyrapicus ruber*

Contact: Robert_Kuntz@nps.gov

Landbirds

Landbirds are vital to the North Cascades ecosystem. They are critical components in a complex food web, eating millions of seeds and insects and in turn, providing food for other creatures. Because they have specific requirements for food, nest sites, and habitats, they respond to subtle changes to their environment. For these reasons, birds are among the most sensitive indicators of ecosystem health and monitoring them is one of the most efficient ways to take the ecological pulse of an area.

Bird populations are widely used as indicators of ecosystem health, and monitoring methods have been standardized, giving scientists a relatively low cost and statistically rigorous monitoring tool. Whether year-long residents or spring and fall migrants, birds bring color and song to our national parks. They have high and growing public interest and are the most visible faunal component of many park ecosystems. This broad public interest in birds ensures that landbird information gathered over time will be relevant to the public and to resource managers.

Despite many international treaties, domestic laws, and initiatives protecting resident and migratory bird species, landbird populations continue to decline. Because national parks provide relatively stable and protected habitat for birds, parks are among the few remaining places to study regional and global effects of bird populations. North Cascades National Park Complex (NOCA) represents an excellent reference site for comparison with more heavily impacted lands. And, monitoring landbird populations in the park fills a gap in other regional monitoring programs, which are virtually unmonitored by other programs.

Trends

NOCA completed its fourth year of long-term landbird monitoring in 2010. During these four years of sampling, we

conducted 1,269 point counts, counted 13,134 individual birds, and documented over 100 bird species. Over the four years of data collection, we detected nine species at least 500 times during point count sampling (see table).

Discussion

In 2007, NPS biologists working with The Institute for Bird Populations and the U.S. Geological Survey established a Landbird Monitoring Protocol for seven national parks in the Pacific Northwest. The program has completed four successful years of sampling with this comprehensive, field-tested protocol. Preliminary results indicate the monitoring program has provided a robust dataset for evaluating a five year trend analysis, and that the monitoring program is detecting substantial annual fluctuations in bird populations. These fluctuations, when analyzed in the context of annual weather variation and perhaps other factors, should yield interesting and useful findings about the drivers of population dynamics in birds of the North Cascades.

Nine most commonly documented bird species at North Cascades

# of individuals	Bird
1505	Pine Siskin
831	Dark-eyed Junco
809	Swainson's Thrush
630	Townsend's Warbler
608	Varied Thrush
598	Yellow-rumped Warbler
597	Evening Grosbeak
537	Western Tanager
534	Hermit Thrush