



LANDSCAPE MANAGEMENT GUIDELINES FOR BREEDING LANDBIRDS OF PACIFIC NORTHWEST FORESTS

SONG SPARROW (*Melospiza melodia*)



INTRODUCTION:

Song Sparrow is a widespread and variable, medium-sized (16cm) omnivorous sparrow which, in the Pacific Northwest, breeds primarily in dense willow thickets associated with riparian habitats. The Northwestern subspecies (*M. m. rufina*) migrates down slope and/or into northern California and spends the winter in a variety of different habitats. Nest site characteristics are commonly low in grass and shrub, mostly on ground under grass tuft or shrub, but also in sedge (*Carex* spp.) and cattail (*Typha* spp.), often over water.



contrast, analyses of MAPS data from Wenatchee, Willamette and Fremont (CM) national forests (Fig. 1) detected declining numbers of adults and young, a high productivity index and a survival rate comparable to that reported for the northwestern MAPS dataset pooled.

Table 1. Summary of Song Sparrow BBS (1992-2007) and MAPS data (1992-2007) for the Dissected Rockies (DR), Cascade Mountains (CM), Southern Pacific Rainforests (SPR), and Pitt-Klamath (P-K) physiographic provinces. Trends in bold denote statistical significance ($P < 0.05$)

	DR	CM	SPR	P-K
BBS Adult Trend	+3.52	+3.70	-0.47	+2.71
MAPS Results				
# Stations		13	6	
Adult Trend		-1.58	-4.50	
Young Trend		-3.33	-3.16	
Productivity Index		0.892	0.611	
Survival Rate		0.388	0.351	

CONSERVATION STATUS:

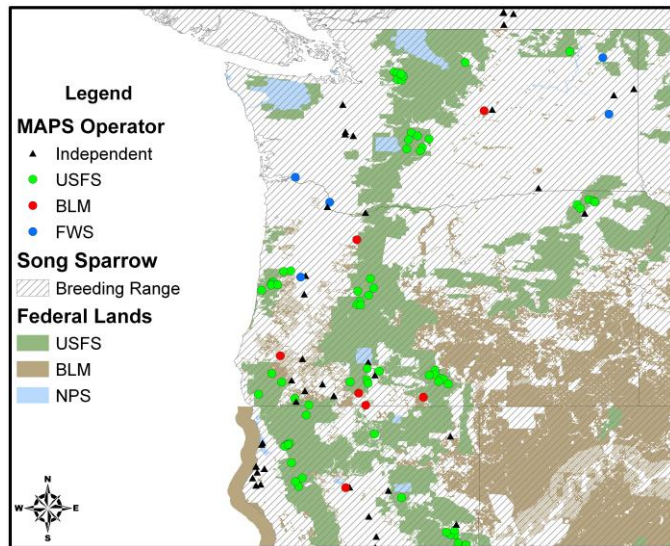


Fig 1. Active MAPS stations and Forest Service (FS), Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), and National Park Service (NPS) lands in the northwestern United States. The hatched area represents Song Sparrow breeding range within the mapped extent.

BBS trends and Siuslaw MAPS adult and young trends were slightly negative for the Southern Pacific Rainforest province but productivity was high and the survival rate was comparable to the Pacific Northwest regional estimate.

MANAGEMENT GUIDELINES:

Maintaining or creating large patches of low canopy cover evergreen, mixed, and deciduous forest in stream dense areas should benefit adult and young populations and lead to high reproductive success. The extent of successional habitat should be kept at less than 3%.

Mechanical canopy thinning may also benefit song sparrow populations. Strong relationships between population demographics and the core area of low canopy cover forest suggest that song sparrows are sensitive to edges, and therefore may be sensitive to the risk of cowbird parasitism or predation which is typically higher in edge habitats.

Breeding Bird Survey (BBS) data (Table 1) collected in the Dissected Rockies, Cascade Mountains, and Pitt-Klamath provinces showed significant increases. In

Humple and Burnett (2004) suggested that grazing exclusion and creek restoration will help restore higher



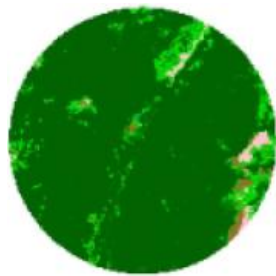
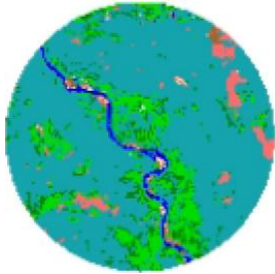
**A COLLABORATION IN BIRD CONSERVATION BETWEEN
THE INSTITUTE FOR BIRD POPULATIONS, POINT REYES STATION, CALIFORNIA AND
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elevation song sparrow habitat. Grazing activities have two major negative effects upon Song Sparrow habitat, destroying understory foraging and nesting habitat. Ohmart (1994) reported a 50-fold increase in song sparrows after cattle exclusion and riparian habitat regeneration.

Riparian breeding habitat can also be easily damaged by water diversion and agricultural encroachment, and marshy sites can become desiccated following channelization caused by livestock. Proximity of residential areas may also increase the threat of predation by feral animals, especially cats.

Fig. 2. a) Two-kilometer radius National Land Cover Dataset (NLCD) image centered on the Beaver Lake MAPS station on Mount Baker National Forest, WA (right). The station lies along a riparian corridor and recorded high numbers of adult and young sparrows, with high reproductive success. The landscape is at ~300m elevation and dominated by mature coniferous (teal), mixed (dark green), and riparian deciduous forest with patches of successional habitat (pink). Much of the riparian forest is fairly open (40-70% canopy closure).



b) Conversely, numbers of Song Sparrows and productivity indices were low at the Deep Creek MAPS station at ~1300m elevation on Wenatchee National Forest (left). The USFS forest cover map shows that the landscape is dominated by mature coniferous forest with high (71-100%) canopy cover, including most of the streamside habitat.

Logging practices generally create Song Sparrow breeding habitat at the edges of clear-cuts and gaps. As a result of continent-wide logging practices over the last century Song Sparrow habitat is considered plentiful.

A habitat conservation plan for breeding landbirds of coniferous forests of Oregon and Washington can be found at <http://www.pcjv.org> and <http://www.orwapif.org>. Song Sparrows may benefit from the management recommendations suggested for Orange-crowned Warbler (*Oreothlypis celata*) and Rufous Hummingbird (*Selasphorus rufus*).

These recommendations include facilitating the growth of early successional deciduous trees and shrubs at elevations under 900m in coastal forests. Populations thrive in 10-15 year old stands prior to canopy closure and in canopy openings with extensive edges and a well-developed deciduous shrub understory.

Forest pests and future climate

Predictions of increased frequency and spatial extent of forest pest outbreaks under global climate warming scenarios may increase the availability of Song Sparrow breeding habitat. The subsequent thinning effect on high canopy cover riparian forests should encourage the growth of willow thickets, other deciduous shrubs, ground cover, and grasses that provide nesting habitat. However, a drier climate may shift the community towards a higher coniferous component.

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