

# Swainson's Hawk

*Buteo swainsoni*



Photo by Larry Neel

## Habitat Use Profile

Habitats Used in Nevada	
Great Basin and Mojave Lowland Riparian Agriculture Sagebrush (Wet Meadow)	
Key Habitat Parameters •	
Plant Composition	Fremont cottonwood, agricultural crops (especially alfalfa), perennial grasses, sedges and rushes, sagebrush and sagebrush-associated shrubs <sup>2</sup>
Plant Density	Sparse tree cover, or single old-growth cottonwoods; avoids dense forest stands <sup>2</sup>
Mosaic	Open riparian woodlands with significant expanses of pasture, agricultural fields, wet meadow, or open shrublands with grass cover in immediate vicinity <sup>2</sup>
Distance to Water	In Nevada, usually occurs close to riparian or other wet habitats <sup>EO</sup>
Response to Vegetation Removal	Negative to tree removal, otherwise response depends on prey populations <sup>EO</sup>
Area Requirements •	
Minimum Patch Size	Unknown; varies with prey density
Recommended Patch Size	> 10,000 ha [25,500 ac] <sup>EO</sup>
Home Range	70 – 8,700 ha [170 – 21,500 ac] <sup>9</sup>

## Conservation Profile

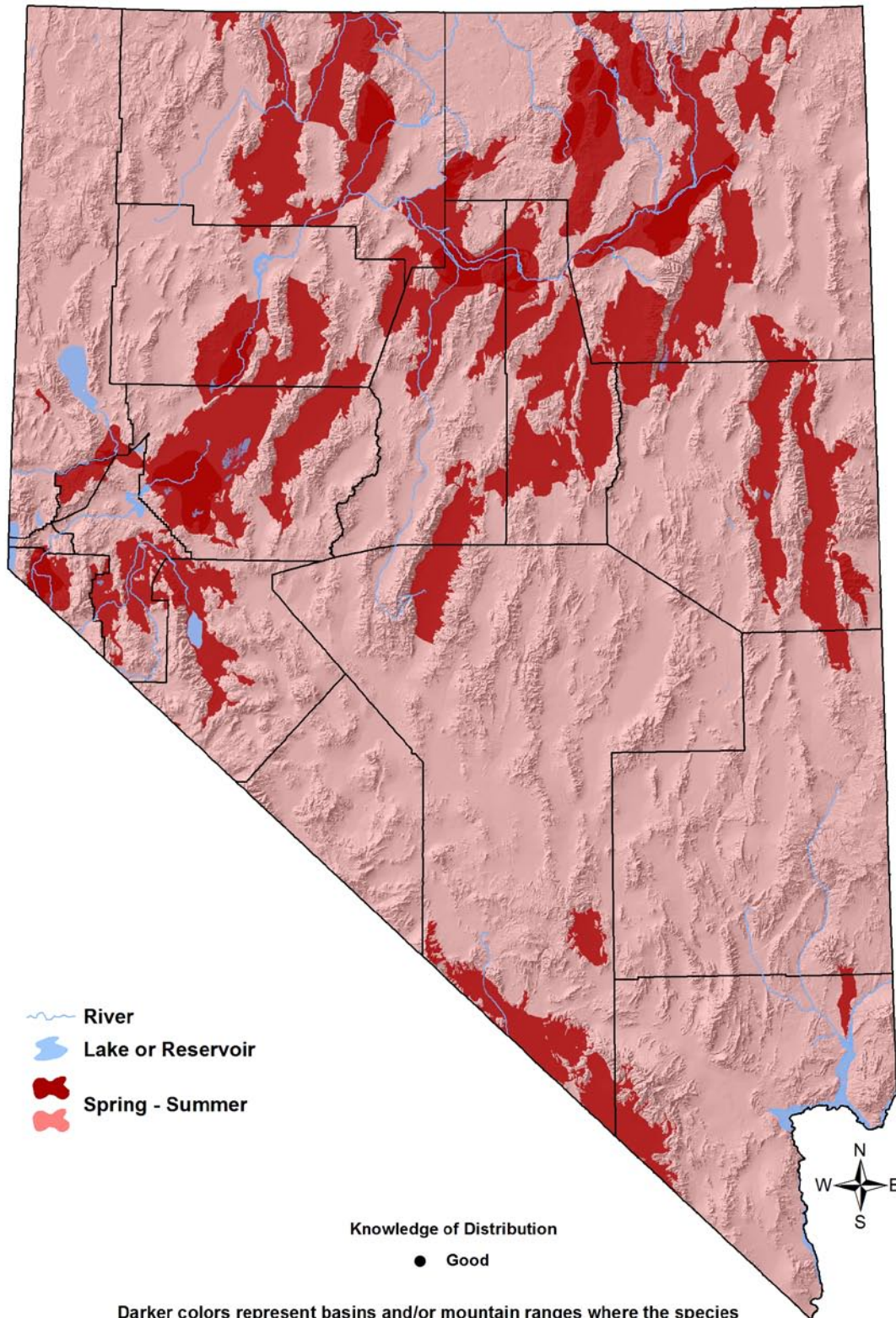
Priority Status	
Conservation Priority Species	
Species Concerns	
Historical and recent declines Small population size Habitat threats	
Other Rankings	
Continental PIF	Watch List
Audubon Watchlist	Yellow
NV Natural Heritage	S2B
USFWS	Migratory Bird
BLM	Sensitive Species
USFS	None
NDOW	Conservation Priority
Trends	
Historical •	Rangewide declines and range contractions <sup>2</sup>
Recent •	Probable declines <sup>2, 7</sup>
Population Size Estimates	
Nevada ○	~ 300 <sup>7</sup>
Global •	460,000 <sup>10</sup>
Percent of Global	< 1%
Population Objective	
Maintain / Increase <sup>7, EO</sup>	
Monitoring Coverage	
Source	NDOW raptor surveys, Nevada Bird Count
Coverage in NV	Good / Fair
Key Conservation Areas	
Protection	Great Basin lowland riparian and agricultural habitats
Restoration	Same

## Natural History Profile

Seasonal Presence in Nevada	
Spring – Summer	
Known Breeding Dates in Nevada	
April – August <sup>2, 5</sup>	
Nest and Nesting Habits	
Nest Placement	Platform in old large tree with overhead cover, or on cliff ledge, juniper <sup>2, EO</sup>
Site Fidelity	High for breeding territory <sup>2</sup>
Other	Often re-uses old raptor or heron nests <sup>EO</sup>
Food Habits	
Basic	Aerial predator
Primary Diet	Small to medium-sized mammals, especially ground squirrels and rabbits <sup>2</sup>
Secondary Diet	Reptiles, large insects <sup>2</sup>

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Darker colors represent basins and/or mountain ranges where the species has been recorded within the past 12 years. Lighter colors represent the broader area within which the species is presumed to occur in appropriate habitat types.

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## Overview

Several aspects of the Swainson's Hawk's biology are particularly interesting, including their long-distance migration to wintering grounds in Argentina, and the contrast between their winter diet (primarily insects) and summer diet (ground squirrels and other small mammals).<sup>2</sup> Historical and recent declines have been relatively well documented for this species, and it may encounter threats on the breeding grounds, wintering grounds, and along the migration routes.<sup>2</sup> A decline of 90% from historical levels in the Central Valley of California was thought to be due to loss of riparian woodland, introduction and spread of nonnative annuals and perennials, alteration of fire regime, overgrazing by livestock, and alteration and degradation of habitat.<sup>4</sup>

Swainson's Hawks have adapted to agricultural landscapes in Nevada, and the greatest threats to the species in this state are probably loss of traditional alfalfa fields to other uses, and loss of nesting trees within several kilometers of suitable foraging areas.<sup>3</sup> An ideal landscape for the Swainson's Hawk provides large riparian nesting trees, agricultural fields, and open shrublands within relatively close proximity. Its use of agricultural fields on the wintering grounds (Argentina) unfortunately resulted in a severe die-off (at least 5% of the global population) during the 1990s from pesticides that are not used in the United States.<sup>6</sup>

Our best estimate of population size for Swainson's Hawk is now over 25 years old,<sup>7</sup> and it is important to obtain a current population estimate given ongoing regional population declines. Because of its association with agricultural landscapes, Swainson's Hawk offers an opportunity for landowner outreach that encourages the retention of nest trees and conveys the benefits of traditional agricultural practices.

## Abundance and Occupancy by Habitat

- Typical densities in Nevada < 0.4 pairs / 100 ha [0.2 / 100 ac]<sup>8</sup>
- Population estimates derive from NBC (21,000) and BBS (7,700)<sup>10</sup> (*Appendix 4*) are not considered reliable because soaring birds are difficult to relate to a defined surface area during surveys

## Nevada-Specific Studies and Analyses

No information

## Main Threats and Challenges

### Habitat Threats

- Loss of traditional agricultural and riparian landscapes, including large trees and tree groves
- Residential development

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*Buteo swainsoni*

- Loss of prey populations (small to medium-sized mammals) to crop conversion, development, or shrubland degradation

## Research, Planning, and Monitoring Threats

- Population and trend estimates are not current
- Current monitoring efforts (NBC) overestimate the numbers of soaring birds such as Swainson's Hawk
- Effects of agricultural pesticide use are not well understood

## **Conservation Strategies**

### **Habitat Strategies**

- Great Basin Lowland Riparian (p. Hab-7-1), Mojave Lowland Riparian (p. Hab-11-1), Agriculture (p. Hab-1-1), and Sagebrush (p. Hab-17-1) habitat conservation strategies benefit this species
- Encourage conservation of traditional agricultural and riparian landscapes that support large scattered trees or groves and healthy prey populations

### **Research, Planning, and Monitoring Strategies**

- Review NBC data collection techniques to reduce possibility of over-counting
- Using modified monitoring techniques and data, develop updated population size and trend estimates
- A statewide monitoring program in California may provide opportunities for collaboration (<http://www.dfg.ca.gov/rap/projects/swainsonhawk/>)<sup>1</sup>
- Conduct research on the possible effects of pesticide use on prey populations and Swainson's Hawks

### **Public Outreach Strategies**

- Support outreach to private landowners to encourage retention of nesting trees and promote the value of traditional agricultural practices for wildlife

References: <sup>1</sup>Anderson et al. (2007); <sup>2</sup>Bechard et al. (2010); <sup>3</sup>Brown et al. (2008); <sup>4</sup>Estep (2009); <sup>5</sup>GBBO unpublished Atlas data; <sup>6</sup>Goldstein et al. (1997); <sup>7</sup>Herron et al. (1985); <sup>8</sup>Neel (1999); <sup>9</sup>Nevada Wildlife Action Plan Team (2006); <sup>10</sup>Rich et al. (2004); <sup>EO</sup>Expert opinion