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SPECIES

Swainson's Hawk *Buteo swainsoni*

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Habitat

Habitat in Breeding Range

Historically and in existing native habitat, forages in open stands of grass-dominated vegetation, sparse shrublands, and small, open woodlands. In many parts of range today, has adapted well to foraging in agricultural areas (e.g., wheat and alfalfa), but cannot forage in most perennial crops or in annual crops that grow much higher than native grasses, making prey more difficult to find ([Bechard 1982](#)

[\(/bow/species/swahaw/cur/references#REF49111\)](/bow/species/swahaw/cur/references#REF49111), [Estep 1989](#)

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[\(/bow/species/swahaw/cur/references#REF21021\)](/bow/species/swahaw/cur/references#REF21021)). In Central Valley, CA, forages in row, grain, and hay crop agriculture, particularly during and after harvest, when prey are both numerous and conspicuous; also attracted to flood irrigation, primarily in alfalfa fields, when prey take refuge on field margins, and to field burning, which forces prey to evacuate (J. A. Estep pers. comm.). In ne. California, 42.5% of habitat within foraging radius of 12 radio-marked individuals was in active agriculture ([Woodbridge 1991](#)

[\(/bow/species/swahaw/cur/references#REF21021\)](/bow/species/swahaw/cur/references#REF21021)). In Utah, nest sites contained significantly more pasture and occurred only on level terrain in the valley floor ([Bosakowski et al. 1996](#)

([/bow/species/swahaw/cur/references#REF49138](#)). In North Dakota, 75.4% of area within 1 km of nests ($n = 27$) was either pasture or hayland, and only 17.7% was cultivated crops; only 2 pairs nested where >60% was cultivated crops (Gilmer and Stewart 1984 ([/bow/species/swahaw/cur/references#REF49117](#))). In e. Washington, home ranges consist of 25.2% grassland, 50.4% wheat, 17.2% shrub vegetation, and 7.2% other (Bechard et al. 1990 ([/bow/species/swahaw/cur/references#REF9576](#))). In contrast, species appears to increase in density in Alberta as cultivation increases to 30% of home range, but there is no further change in density with additional increases in cultivation (Schmutz 1989 ([/bow/species/swahaw/cur/references#REF49131](#))).

Typically nests in scattered trees within these grassland, shrubland, or agricultural landscapes (e.g., along stream courses or in open woodlands). In plains of w. Canada and northern states of U.S., in nineteenth century, major fires burned grasslands every few years, keeping trees to a minimum. An occasional pair nested on the ground, though such nests were subject to trampling by American bison herds (*Bos bison*), so surviving small willows (*Salix* spp.) and low aspen (*Populus* spp.), chiefly along and around water bodies, were used whenever available. In N. Dakota, large majority of nest trees found in planted shelterbelts (43%), wetland borders (22%), and abandoned farmsteads (11% [$n = 270$]; Gilmer and Stewart 1984 ([/bow/species/swahaw/cur/references#REF49117](#))). Today, in California's Central Valley, nests are typically at edge of narrow bands of riparian vegetation, in isolated oak woodland, and in lone trees, roadside trees, or farmyard trees, as well as in adjacent urban residential areas (Estep 1989 ([/bow/species/swahaw/cur/references#REF20989](#)), England et al. 1995 ([/bow/species/swahaw/cur/references#REF35517](#))). When coexisting with Red-tailed Hawk, Swainson's uses smaller trees in smaller clumps than does Red-tailed ($p \leq 0.001$; Murphy 1993b ([/bow/species/swahaw/cur/references#REF16252](#))). A few pairs also nest in northern Mexico ranging from 12 pairs in the Mapimi Desert in northern Durango (Rodriguez-Estrella 2000 ([/bow/species/swahaw/cur/references#REF21047](#))) to 2 pairs in Neuvo Leon (Contreras-Balderas and Montiel-de la Garza 1999 ([/bow/species/swahaw/cur/references#REF35525](#))). See also Breeding: nest site, and Food habits: feeding, below.

Habitat in Nonbreeding Range

Habitat in Migration

Birds rest and feed in grasslands and harvested fields, especially where grasshoppers are numerous, often perching on fence posts, telephone poles, and power poles. Large flocks may roost at night in trees (CSH, Smith 1980c ([/bow/species/swahaw/cur/references#REF25024](#))).

Habitat in Overwintering Range

Historically in Argentina during austral summer, inhabited native grasslands similar to those of n. Great Plains (Figure 3 (<https://cdn.download.ams.birds.cornell.edu/api/v1/asset/25005741>)). Now, as in much of breeding range, species has adapted to agriculture; in e. La Pampa province of Argentina, typically found where alfalfa is grazed by cattle and where sunflowers and corn are abundant (Woodbridge et al. 1995b

([/bow/species/swahaw/cur/references#REF21022](#)). However, hawks only used plowed fields and permanent pastures such as fallow, natural, and alfalfa fields to forage ([Canavelli et al. 2003](#) ([/bow/species/swahaw/cur/references#REF49139](#))). In e. Buenos Aires Province, found in mosaic of salt marsh, freshwater marsh, and pampas ([Rudolph and Fisher 1993](#) ([/bow/species/swahaw/cur/references#REF21010](#))). Regional scale distribution in wintering grounds is determined by land use types, topography and climate ([Sarasola et al. 2008b](#) ([/bow/species/swahaw/cur/references#REF57543](#))).

Probability of occurrence in each of 30 x 30 km squares in which the Argentine pampas was divided was positively related with the percentage of land devoted to cereal crops (wheat, rye and barley) and perennial pastures (mainly alfalfa) but negatively affected by the percentage of land devoted to oleaginous crops (mainly soy bean) and annual pastures (oat, sorghum). In addition, probability of occurrence of Swainson's Hawks is higher at intermediate altitudes (200 m a.s.l.) avoiding lowlands and highlands. Drier conditions during austral springs (time in which hawks arrive at the wintering quarters) also increase local probability of occurrence of hawks. Abundance of Swainson's Hawks at this regional scale is also influenced by land use types and climate.

Similarly, hawk abundance was positively and negatively affected by perennial and annual pastures respectively. Abundance higher when natural grasslands are present and also at intermediate values of percentage of land implanted with groves of exotic tree species. Swainson's Hawk local abundance is also higher when both austral spring and austral summer of the previous year are especially drier. This could be related to insect abundance in the field because in temperate areas such as Argentina, most grasshopper species emerging in any given year laid their eggs during the previous summer.

At night, perches in eucalyptus (*Eucalyptus* spp.) groves or "montes" planted as shelterbelts or windbreaks around farm sites ([Woodbridge et al. 1995b](#) ([/bow/species/swahaw/cur/references#REF21022](#)), MJB). A survey of roost sites throughout the Argentine pampas showed hawks using only groves of exotic tree species for roosting ([Sarasola and Negro 2006](#) ([/bow/species/swahaw/cur/references#REF21050](#))), including eucalyptus but also elm and pine. These groves of exotic tree species are novel elements on the Argentine pampas landscapes, which lacked much of any arborescent growth before European colonization during the 20th century. Thus, the introduction of exotic trees may have resulted either in the expansion of the suitable habitat for Swainson's Hawks, permitting a recent colonization of the Argentine Pampas, or a change in the communal roosting behavior of hawks when these structures become available.

Segregation On Wintering Grounds Among Age-Sex Classes And/Or According To Breeding Origins

Needs study. In e. La Pampa Province, Argentina, foraging flocks are in pampas and agricultural areas and are dominated by adult birds ([Woodbridge et al. 1995b](#) ([/bow/species/swahaw/cur/references#REF21022](#)), A. Lanussé pers. comm.). In contrast, flocks in e. Buenos Aires Province are in wet pampas dominated by juveniles ([Jaramillo 1993](#) ([/bow/species/swahaw/cur/references#REF35519](#)), pers. comm.). Stable isotope analysis reveals wintering aggregations of hawks at roosting places consists of a mixture of individuals originating from different breeding sites in North America ([Sarasola et al. 2008b](#) ([/bow/species/swahaw/cur/references#REF57543](#))). Values

of stable-hydrogen isotope were measured for 40 hatching year old Swainson's hawks captured at five roosting sites across the Argentine pampas. Variability in the values of isotope signatures in feather of hawks captured at the same roosting place were 11 to 19 times greater than that expected in birds with the same breeding origin.

◀ **[Distribution \(/bow/species/swahaw/cur/distribution\)](/bow/species/swahaw/cur/distribution)**

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(<https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24945801>).

Soaring 'kettle' of Swainson's Hawks, Firebaugh, CA, July.

+ [Enlarge \(https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24945801\)](https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24945801)

Swainson's Hawks are gregarious birds, often occurring in large flocks. During summer moderately large flocks of first and second year birds form around food sources. During migration larger flocks form, often numbering in the thousands. Visit this photographer's photo galleries [here](http://www.briansullivanphotography.com/) (<http://www.briansullivanphotography.com/>).





(<https://cdn.download.ams.birds.cornell.edu/api/v1/asset/25005721>).

Figure 2. A "kettle" of migrating Swainson's Hawks

+ [Enlarge \(https://cdn.download.ams.birds.cornell.edu/api/v1/asset/25005721\)](https://cdn.download.ams.birds.cornell.edu/api/v1/asset/25005721).

This species migrates from breeding grounds in western North America to wintering grounds on the pampas of Argentina. Large numbers of migrants can be seen at points where landforms concentrate these migrants, such as Veracruz, Mexico, or the isthmus of Panama, as seen here. Photo by Neal Smith.



(<https://cdn.download.ams.birds.cornell.edu/api/v1/asset/25005741>).

Figure 3. Wintering habitat during the austral spring in Argentina.

+ [Enlarge \(https://cdn.download.ams.birds.cornell.edu/api/v1/asset/25005741\)](https://cdn.download.ams.birds.cornell.edu/api/v1/asset/25005741).

Left photo: native grassland habitat near Winfreda, La Pampa; right photo: agricultural landscape near General Pico, La Pampa. Photos by Brian Woodbridge.





(<https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24936591>).

Swainson's Hawk nesting habitat, northern SD, July.

[+ Enlarge \(https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24936591\)](https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24936591)

Swainson's Hawks frequently nest in trees found around ponds in the prairie pothole region of the Dakotas. Visit this photographer's photo galleries [here \(http://www.briansullivanphotography.com/\)](http://www.briansullivanphotography.com/).



(<https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24958731>).

Swainson's Hawks on sprinkler system, Firebaugh, CA, April.

[+ Enlarge \(https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24958731\)](https://cdn.download.ams.birds.cornell.edu/api/v1/asset/24958731)

In some agricultural areas Swainson's Hawks can be found in numbers around flooded alfalfa fields. This is especially true in California's Central Valley, where groups of 100 or more attend sprinkler systems like this, awaiting rodent prey items that are attempting to escape the water. Visit this photographer's photo galleries [here \(http://www.briansullivanphotography.com/\)](http://www.briansullivanphotography.com/).

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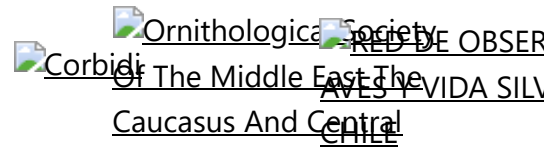
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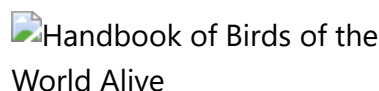


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