

## Swainson's Hawk

*Buteo swainsoni*

### **REGULATORY STATUS**

USFWS: Migratory Bird  
USFS R2: No special status  
USFS R4: No special status  
Wyoming BLM: No special status  
State of Wyoming: Protected Bird

### **CONSERVATION RANKS**

USFWS: Bird of Conservation Concern  
WGFD: NSSU (U), Tier II  
WYNDD: G5, S5  
Wyoming Contribution: LOW  
IUCN: Least Concern  
PIF Continental Concern Score: 12

### **STATUS AND RANK COMMENTS**

Swainson's Hawk (*Buteo swainsoni*) has no additional regulatory status or conservation rank considerations beyond those listed above.

### **NATURAL HISTORY**

#### **Taxonomy:**

Swainson's Hawk is monotypic. No subspecies are currently recognized <sup>1</sup>.

#### **Description:**

Identification of Swainson's Hawk is possible in the field. Swainson's Hawk measures 48–56 cm from bill to tail and has a wingspan of approximately 130 cm <sup>1,2</sup>. Females are larger than males but plumage is identical between sexes. However, plumage varies among light, dark, and intermediate morph individuals. In flight, light morph birds have white or pale buff wing-linings (leading edge of wing) with sharply contrasting dark-brown barred flight feathers on the trailing edge of the wing. The tail is grayish brown with narrow dark bands. Light morph birds have a white chin, conspicuous dark-brown or rufous "bib" on the breast, and a white or pale buff belly. Dark morph birds lack a white chin and are uniformly dark-brown to rufous-brown or black-brown, lacking the contrast between the wing-linings and flight feathers when seen in flight. Intermediate morphs may have a range of characteristics of both light and dark morphs, but typically have a white chin and dark-brown bib. The belly of intermediate birds is typically heavily barred rufous or dark-brown. Juveniles are similar in appearance to adults of the same morph but have heavy dark streaking or spotting on the breast and belly and an incomplete bib. In flight, Swainson's Hawk is distinguished from other hawks in Wyoming by the dark flight feathers on the trailing edge of the wing. Red-tailed Hawk (*B. jamaicensis*) differs from Swainson's Hawk in that it has a red tail, dark belly-band instead of a breast bib, and dark

patagial marks on the leading edge of the underside of the wing between the body and wrist <sup>1, 2</sup>. Dark morph individuals of many *Buteo* spp. can be difficult to differentiate.

**Distribution & Range:**

Swainson's Hawk breeds across much of inland western North America from southern Canada to northern Mexico. Wyoming is centrally located within the breeding range of Swainson's Hawk. Almost the entire population winters in South America on the pampas in Argentina <sup>1</sup>. Swainson's Hawk has been largely extirpated from its former breeding range in southern California <sup>1</sup>.

**Habitat:**

Swainson's Hawk forages in open grasslands, shrub-steppe, and prairies, as well as agricultural areas where crop height does not greatly exceed that of native grasses (e.g., hay, wheat, alfalfa) <sup>1, 3</sup>. In Wyoming, the species generally occurs in these habitats below 2,750 m in elevation <sup>4</sup>. Swainson's Hawk nests in a variety of isolated or scattered trees or tall shrubs within or adjacent to foraging habitat. In the Laramie Plains in Wyoming, nest trees ranged from Narrowleaf Cottonwood (*Populus angustifolia*) to relatively isolated willow shrubs (*Salix* spp.) <sup>5</sup>. Swainson's Hawk seems to tolerate human activity and frequently nests in farmsteads, shelterbelts, and the outskirts of urban areas where trees planted by people can offer nesting structures otherwise limited or absent in the surrounding landscape <sup>4, 6, 7</sup>. The species will occasionally nest on telephone poles and on the ground when trees are absent <sup>1, 5</sup>.

**Phenology:**

In Wyoming, Swainson's Hawk typically returns from wintering grounds beginning in mid-April, with the number of spring migrants peaking in late-April. Nest initiation has been reported from early May to mid-June in Wyoming <sup>4, 5</sup>. Incubation lasts 34–35 days and nestlings fledge at about 43 days of age, typically in early to mid-August <sup>1</sup>. Fall migration typically begins in late August and mid-September, with large flocks moving south feeding on grasshoppers and other prey at stopover locations <sup>1, 4, 8</sup>. Migration may continue through October in Wyoming, but is finished by the beginning of November <sup>4</sup>.

**Diet:**

During the breeding season, Swainson's Hawk feeds largely on vertebrate prey, especially ground squirrels, pocket gophers, voles, and deer mice. Swainson's Hawk also feeds on birds, bats, and reptiles <sup>1</sup>. Outside of the breeding season, the species feeds largely on invertebrate prey, especially grasshoppers, dragonflies, butterflies, and moths. Swainson's Hawk will hunt from either the ground or the air and often follows agricultural equipment to catch prey disturbed by machinery <sup>1</sup>.

**CONSERVATION CONCERNS**

**Abundance:**

**Continental:** WIDESPREAD

**Wyoming:** COMMON

Based on results from Breeding Bird Survey (BBS) data, Partners in Flight estimated the Wyoming population of Swainson's Hawk to be about 13,000 birds in 2013 <sup>9</sup>. The global population is estimated to be 580,000 birds <sup>9</sup>.

**Population Trends:**

**Historic:** UNKNOWN

**Recent:** STABLE

Trend data from BBS routes in Wyoming from 1966–2013 suggest that the overall population is likely stable, however, results are not conclusive due to limited number of detections<sup>10</sup>. Swainson's Hawk suffered extreme declines in Canada and the northern United States by the early 1900's largely due to persecution by settlers; however, shooting is no longer believed to be a significant threat to species<sup>1</sup>. More recently, Swainson's Hawk has declined in California, Oklahoma, southeastern Oregon, Alberta, Saskatchewan, and the central mixed grass prairie, but appears to be relatively stable or possibly increasing elsewhere in its range<sup>1, 7, 10-12</sup>.

### **Intrinsic Vulnerability:**

#### **MODERATE VULNERABILITY**

Swainson's Hawk is moderately vulnerable to extrinsic stressors because the entire North American breeding population winters within a relatively small area in northern Argentina. Thus, any changes to migration or wintering habitat that negatively impact Swainson's Hawk (e.g., habitat loss, misuse of agrochemicals, etc.) could severely threaten the species as a whole<sup>1, 8, 13</sup>.

### **Extrinsic Stressors:**

#### **MODERATELY STRESSED**

Factors that influence availability of prey threaten Swainson's Hawk persistence. Application of pesticides to control insect or rodent populations has both direct and indirect negative impacts on Swainson's Hawk through toxicity and reduced prey availability. During 1995–1996, application of organophosphate insecticides to control grasshoppers in Argentina resulted in the death of over 20,000 Swainson's Hawks within hours of being sprayed or within days of ingesting poisoned grasshoppers<sup>1</sup>. Although Swainson's Hawk commonly breeds and forages in certain types of agricultural landscapes, the species cannot forage in crops that grow much taller than native grasses or that have dense vegetative cover<sup>1</sup>. Thus, conversion of native grassland, prairie, and shrub-steppe habitat to cropland can negatively impact Swainson's Hawk depending on the type of crops planted<sup>1, 7</sup>.

### **KEY ACTIVITIES IN WYOMING**

The Wyoming Game and Fish Department and the Bureau of Land Management (BLM) have cooperatively surveyed for raptors in northeastern Wyoming on BLM lands and the Thunder Basin National Grassland periodically since 1996. Although timing of surveys (April and May) are somewhat early to detect nest initiation by Swainson's Hawk because the species arrives on breeding grounds later than other raptors, these surveys typically detect some Swainson's Hawk nests<sup>14, 15</sup>. Annual monitoring surveys for raptors, including Swainson's Hawk, have been conducted in the Pinedale Anticline oil and gas development area since 2009<sup>16</sup>. Bird monitoring programs such as BBS and Integrated Monitoring in Bird Conservation Regions also detect Swainson's Hawk in limited numbers<sup>10, 17</sup>.

### **ECOLOGICAL INFORMATION NEEDS**

Anthropogenic changes to prairie ecosystems that result in an increase in nesting structures (e.g., planting of shelterbelts around homesteads and crop fields, construction of transmission lines) has increased populations of competitors for both nest sites and prey, such as Red-tailed Hawk and Common Raven (*Corvus corax*)<sup>11, 18</sup>. Because Swainson's Hawk arrives on breeding grounds later than other predatory bird species, information is needed on how changes in abundance of competitors could influence territory and nest site availability for Swainson's Hawk in Wyoming. Knowledge of Swainson's Hawk demographics, especially productivity and recruitment, is needed for Wyoming. Information is also needed on how pesticide use in

Wyoming could be affecting local Swainson's Hawk populations either directly through contamination or indirectly through reduced prey availability. Lastly, the ecology of Swainson's Hawk during migration is poorly understood and information is needed on how changes in land-use and exposure to pesticides along migration routes could impact the species<sup>1</sup>.

### **MANAGEMENT IN WYOMING**

*This section authored solely by WGFD; Zachary J. Walker.* Swainson's Hawk is classified as a Species of Greatest Conservation Need in Wyoming due to extrinsic stressors, and lack of information regarding nesting and current populations within the state. Management priorities for the species in the short-term will focus on addressing data deficiencies. Information should be gathered on nesting success, distribution, population status, and the impact of potential threats. Any information gathered will ultimately be used to develop management and conservation recommendations for this species. Best management practices for this species include the management of nesting habitat to minimize loss of nesting pairs, avoiding pesticide use in nesting habitats during the breeding season, and maintaining functioning grassland and riparian habitats. Existing monitoring data do not support estimates of occupancy, density, or population trend. Targeted, species-specific survey methods may be needed for this species.

### **CONTRIBUTORS**

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Figure 1: Adult Swainson's Hawk near Hutton National Wildlife Refuge, Wyoming. (Photo courtesy of Kimberly Szcodronski, WGFD)

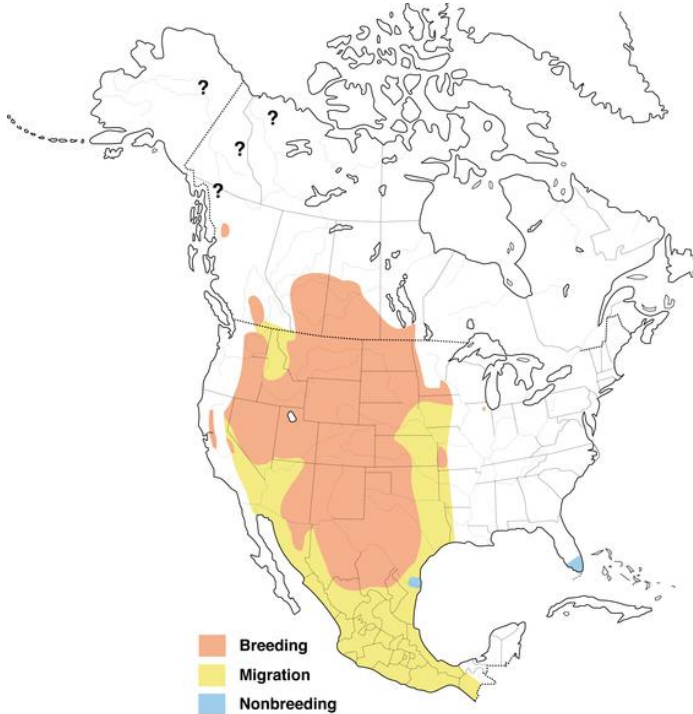


Figure 2: North American range of *Buteo swainsoni*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)



Figure 3: Shrub-steppe habitat of Swainson's Hawk. (Photo courtesy of Robin Greene)

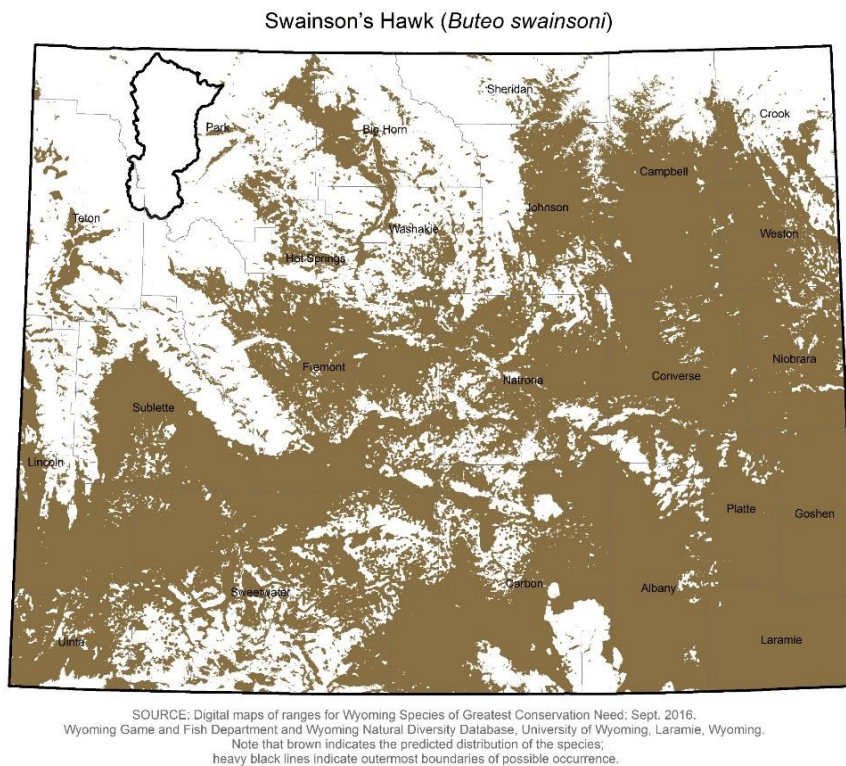


Figure 4: Range and predicted distribution of *Buteo swainsoni* in Wyoming.



Figure 5: Adult Swainson's Hawk in flight in Colorado. (Photo courtesy of Bill Schmoker)