

## SPECIES ACCOUNT

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### Species Data

|                             |                        |
|-----------------------------|------------------------|
| Common Name:                | Swainson's Hawk        |
| Scientific Name:            | <i>Buteo swainsoni</i> |
| Species Code:               | B-SWHA                 |
| BC Status:                  | Red-listed             |
| Identified Wildlife Status: | Not listed             |
| COSEWIC Status:             | Not assessed           |

### Project Data

|               |   |
|---------------|---|
| Project Name: | Vernon Commonage Sensitive Ecosystems Inventory |
| Project Type: | Terrestrial Ecosystem Mapping                   |
| Area:         | Central Okanagan                                |
| Ecoprovince:  | Southern Interior                               |
| Ecoregions:   | Thompson-Okanagan Plateau                       |
| Ecosections:  | Northern Okanagan Basin (NOB)                   |
| BGC Units:    | IDFxh1  |
| Map Scale:    | 1:15 000  |

### Distribution

#### ***Provincial Range***

Breeds mainly in the southern interior throughout the Thompson-Okanagan Plateau, from Princeton and Anarchist Mountain to the north Okanagan and Thompson River valley, and locally in the Bulkley Basin (Campbell et al. 1990). The centres of abundance are the Nicola and north Okanagan valleys (Campbell et al. 1990, Cooper 1998).

Nests have been recorded from Princeton, Okanagan Landing, Vernon, Goose Lake Range and the plateau east of Osoyoos (Cannings et al. 1987). A 1996 survey found three active nests near Vernon and two in the Douglas Lake area, with population estimates of 50 pairs on the Douglas Plateau and 25 pairs in the north Okanagan (Cooper 1998).

#### ***Elevation Range***

Occurs up to 2290m, with breeding recorded from 335 to 975 m (Campbell et al. 1990). Three nests recorded from the Vernon area ranged from 350 to 650 m (Cooper 1998).

#### ***Distribution in the Project Area***

In the Okanagan, Swainson's Hawks are most often seen around Goose Lake, the Vernon Commonage, the head of Okanagan Lake, and Anarchist Mountain east of Osoyoos; all nests recorded were from the Vernon area (Cannings et al. 1987). Of 16 Swainson's Hawks observed in the Okanagan in a 1996 survey, all but two were near Vernon (Cooper 1998). The breeding population near Vernon appears restricted to a relatively small area that extends a few

kilometers north and east of Vernon, west to Okanagan Lake, and does not extend as far south as Kelowna (Cooper 1998).

## **Ecology and Habitat Requirements**

After wintering in South America, Swainson's Hawks generally arrive in BC late April and early May, and most depart by late August or early September (Campbell et al. 1990). In the Okanagan, birds may arrive as early as March 25, and have remained as late as October 3 (Cannings et al. 1987).

Breeding most commonly occurs in open forest in or adjacent to open areas such as grassland, agricultural areas, and marshes, and typically in upland areas of foothills and valleys (Campbell et al. 1990). They appear to be rather tolerant of human presence, as one nest was located in mixed grassland and pasture near several houses, and another was in the midst of human activity near downtown Vernon (Cannings et al. 1987).

Pairs appear to return to the same areas several years in succession, either using the same nest, or building a new nest in the same territory (Cannings et al. 1987). These hawks may nest close together where they are common, and will nest in the vicinity of Red-tailed Hawks (Cannings et al. 1987).

All nests in BC have been located in trees (nine in ponderosa pine, three in Douglas-fir, three in black cottonwood, two in trembling aspen, one in spruce, and one in a deciduous tree, possibly exotic), with most near the top of the tree, ranging in height from 4.6 to 23 m (Campbell et al. 1990, Cooper 1998).

Incubation occurs in May, with clutch sizes ranging from 1 to 4 eggs, and most fledging probably occurs in August (Campbell et al. 1990).

Swainson's Hawks hunt by soaring over grasslands, or scanning from a perch. While raising young in the early summer, diet consists mostly of small mammals and reptiles, but they feed heavily on large insects such as grasshoppers and caterpillars during other seasons (Kaufman 1996). Small mammals taken include voles, Deer Mice, ground squirrels and pocket gophers, but they will also feed on small birds, bats, rabbits, reptiles, amphibians and Muskrats (Fraser et al. 1990).

Swainson's Hawks were historically known to congregate in the hundreds during migration and while foraging on outbreaks of grasshoppers and crickets (Cannings et al. 1987). Since the 1920s, no large aggregations have been reported in the province, although as many as 15 birds may occasionally be seen in autumn flocks (Campbell et al. 1990).

### **General Living (Food)**

Hunts in open areas, including grasslands, pastures, agricultural fields, meadows and wetlands. Most often seen in the Okanagan on hilly, sparsely treed grasslands (Cannings et al. 1987). It is unknown how far they will travel from the nest to forage.

### **Reproducing (Security Habitat)**

Typically nests in lone trees on the plains, occasionally in shrubs, cliff ledges or on the ground on a knoll. In BC, coniferous or mixed woodlands or small stands of mature to old forest, in or adjacent to open areas are most commonly used (Campbell et al. 1990). Three of five nests found in 1996 were in ecotones between grassland and coniferous forest; one was in a single pine on a knoll in a rural area, and one on a golf course (Cooper 1998).

## Ratings

This model employs a 4-class rating scheme because there is insufficient knowledge of habitat requirements to use a 6-class scheme yet there is sufficient knowledge to go beyond a 2-class rating scheme. This complies with the recommended rating scheme in the RIC (1999) standards manual.

### Provincial Benchmark

|                      |   |
|----------------------|---|
| Ecosection           | NOB (estimated 25 pairs in a relatively small area) |
| Biogeoclimatic Zones | BG, PP, IDF   |
| Habitats             | Open grassland with scattered trees or copses.      |

### Map Themes

| Habitat Use    | Life Requisite | Season         | Rating Code | Ecosystem Attributes  |
|----------------|----------------|----------------|-------------|---|
| General Living | Food           | Growing season | LIG         | <ul style="list-style-type: none"> <li>open areas including grassland, pasture, field, meadow, and wetland</li> </ul> |
| Reproducing    | Security       | Spring         | RE          | <ul style="list-style-type: none"> <li>Scattered trees or small stands in or adjacent to open areas</li> </ul>        |

### Ratings Assumptions

| <b>General Living during growing season – Food (LIG)</b> |  |
|--|--|
| Site Series  | <ul style="list-style-type: none"> <li>Open grassland and pastures rated up to High; shrub-steppe, meadows, wetlands up to Moderate</li> </ul> |
| Structural Stage   | <ul style="list-style-type: none"> <li>No effect on rating</li> </ul>  |
| Shrub Density  | <ul style="list-style-type: none"> <li>Dense rated down 1</li> </ul>   |
| Range Condition  | <ul style="list-style-type: none"> <li>Poor rated down 1 due to lower rodent numbers</li> </ul>  |
| Aspect   | <ul style="list-style-type: none"> <li>No effect on rating</li> </ul>  |
| Slope  | <ul style="list-style-type: none"> <li>Steep slopes rated down</li> </ul>  |
| Soil Texture   | <ul style="list-style-type: none"> <li>No effect on rating</li> </ul>  |
| Soil Depth   | <ul style="list-style-type: none"> <li>Very shallow rated down 1</li> </ul>  |
| <b>Reproducing – Security (RE)</b>                       |  |
| Site Series  | <ul style="list-style-type: none"> <li>Open forest and scattered trees rated up to High; mixed deciduous woodlands up to Moderate</li> </ul>   |
| Structural Stage   | <ul style="list-style-type: none"> <li>Stages 6 and 7 up to High; 5 up to Moderate; 4 up to Low</li> </ul>                                     |
| Range Condition  | <ul style="list-style-type: none"> <li>No effect on rating</li> </ul>  |
| Slope/Aspect   | <ul style="list-style-type: none"> <li>No effect on rating</li> </ul>  |
| Soil Texture/Depth                                       | <ul style="list-style-type: none"> <li>No effect on rating</li> </ul>  |

## Map Interpretation

Two map themes are portrayed on the habitat map: nesting (RE) and foraging (LIG). Nesting overlays foraging. The highest value method is used to rate both of these themes, which portrays the highest habitat rating of all the units occurring within the polygon.

Grassland units (which can have up to high suitability foraging values) often have single or scattered trees. Although they may have high nesting potential, the occurrence of these trees is hard to predict. Therefore, grassland units are not rated for nesting, in order to avoid covering the foraging values, but may have high nesting potential.

## Literature Cited

- Campbell, R.W., A.K. Dawe, I. McTaggart-Cowan, J. Cooper, G. Kaiser and M.C. McNall. 1990. Birds of British Columbia: Volume 2, Nonpasserines; Diurnal Birds of Prey through Woodpeckers. Royal British Columbia Museum.
- Cannings, R.A., R.J. Cannings and S.G. Cannings. 1987. Birds of the Okanagan Valley, British Columbia. Royal British Columbia Museum.
- Cooper, J.M. 1998. An inventory report on the status of diurnal raptors (Ferruginous Hawk, Swainson's Hawk, Prairie Falcon, Peregrine Falcon) at risk in the southern grasslands of British Columbia. Ministry of Environment, Lands and Parks. Victoria, BC. Wildlife Working Report WR-92.
- Fraser, D.F., W.L. Harper, S.G. Cannings and J.M. Cooper. 1999. Rare birds of British Columbia. Ministry of Environment, Lands and Parks, Wildlife Branch and Resources Inventory Branch. Victoria, BC.
- Kaufman, K. 1996. Lives of North American Birds (Peterson Natural History Companions). Houghton Mifflon Co., New York.
- RIC (Resources Inventory Committee). 1999. British Columbia wildlife habitat rating standards, Version 2.0. Ministry of Environment, Lands and Parks, Resource Inventory Branch. Victoria, BC.

### Swainson's Hawk Suitability - Vernon Commonage

