

## **Species - Habitat Model for Steller's Jay**

Original species account/ratings table prepared by Dave Caswell, Lower Nicola Indian Band. Species account and ratings table reviewed and revised by Shawn Hilton, Keystone Wildlife Research Ltd, February 2008.

### **Species Data**

Common Name:	Steller's Jay
Scientific Name:	<i>Cyanocitta stelleri</i>
Species Code:	B-STJA
Nlaka'pux Name:	/qwáye (Thompson and Thompson 1996)
BC Status:	Provincial Listing: Yellow
COSEWIC:	Not at Risk (B.C. Conservation Data Centre 2006.)

### **Project Data**

Area:	Merritt Timber Supply Area
Ecoprovince:	Southern Interior
Ecoregions:	Northern Cascade Ranges, Pacific Ranges, Thompson-Okanagan Plateau, Interior Transition Ranges, Okanagan Range
Ecosections:	Eastern Pacific Ranges (EPR), Guichon Uplands (GUU), Hozameen Ranges (HOR), Nicola Basin (NIB), Okanagan Ranges (OKR), Pavilion Ranges (PAR), Southern Thompson Upland (STU), Thompson Basin (THB)
BEC Variants:	AT, AT-Emwp, BGxh2, BGxw1, CWHms1, ESSFdc2, ESSFdcp, ESSFmw, ESSFmwp, ESSFxc, ESSFxcp, IDFdk1, IDFdk1a, IDFdk2, IDFxh1, IDFxh1a, IDFxh2, IDFxh2a, MHmm2, MHmm2p, MSdm2, MSmw, MSxk, PPxh1, PPxh2, PPxh2a
Map Scale:	1:20,000

## **1 Ecology and Habitat Requirements**

### **1.1 Description**

The Steller's Jay is classified as a passerine or songbird and is a member of the Family Corvidae which includes crows, jays and ravens. In 1987 the Steller's Jay was declared the official provincial bird of British Columbia. There are six described subspecies of the Steller's Jay in North America, three of these occur in British Columbia, including

*Cyanocitta stelleri stelleri* along the western mainland, *C. s. annectens* through the interior and *C. s. carlottae*. *C. s. carlottae* is restricted to the Queen Charlotte Islands and has been placed on the provincial Blue List.

The Steller's Jay has a black head with a long, shaggy crest; and a black upper breast and upper back. The rest of the plumage including the belly, tail, rump and wings is a shiny deep blue. There is dark barring on the scapulars, tertials and tail feathers. The adults have vertical forehead streaks that range from white on interior populations to dark blue on coastal populations and black on the Queen Charlotte Island subspecies. Interior populations also have a white streak above their eyes. The eyes, legs and bill are black and the sexes are similar in plumage. Typically the species has an average length of 22 cm, a wingspan of 48 cm and weighs around 128 g. The Steller's Jay has a large repertoire of calls; the most common is a harsh loud series of “*shack shack shack*” notes. This species is also an excellent mimic and can imitate the calls of many species quite well (e.g., the call of the Red-tailed Hawk is often given).

## **1.2 Diet and Foraging Behaviour**

This species is omnivorous, feeding on a wide range of vegetable and animal matter. Wild or cultivated nuts, seeds, fruits and berries are commonly consumed. The Steller's Jay appears to be a major predator of other smaller bird species eggs and nestlings and will also steal from the food caches of other birds such as the Clark's Nutcracker (*Nucifraga columbiana*). It is also known to eat insects, spiders, suet and occasionally small reptiles, amphibians, small rodents and carrion.(BC. Conservation Data Center 2006).

The Steller's Jay, like most corvids, is intelligent and opportunistic and will quickly take advantage of new food sources. This species forages in trees and on the ground and will frequent picnic areas and campgrounds looking for handouts. The jays will cache excess food for later consumption, especially nuts.

## **1.3 Reproduction and Nesting**

The Steller's Jay can be quite secretive and inconspicuous during the breeding season. This species commonly nest in coniferous and mixed coniferous-deciduous forests, including well treed residential areas. Nests are usually placed in a small conifer tree on a horizontal branch close to the trunk but near the top of the tree. Steller's Jays form monogamous, long-term pair bonds, and the nest is built by both members of the pair (Birdweb 2005). Eggs are laid from early April to early July and are bluish-green in colour and marked with dark spots. The clutch size ranges from 2 to 5 eggs and are incubated by the female for a period of 16 days (Ehrlich *et al.* 1988). Young remain in the nest for approximately 20 days, and are fed by both parents (Goodwin 1976). The adults continue to provide some food for the fledglings for about a month after they leave the nest. Brown-headed Cowbird (*Molothrus ater*) parasitism was not recorded in the 66 Steller's Jay nests recorded with eggs or young in British Columbia (Campbell *et al.* 1997). There are no known reports of this species being parasitized by cowbirds in North

America (Friedmann *et al.* 1977). This species has been known to hybridize with the Blue Jay (*Cyanocitta cristata*) and the Western Scrub-Jay (*Aphelocoma californica*). The lifespan of the Steller's Jay has been recorded in the wild at 16 years and 1 month (USGS 2007).

## **1.4 Dispersal and Movements**

Seasonally, the Steller's Jay concentrates where food sources are most abundant. While the Steller's Jay is considered a year round resident, there is both an altitudinal and latitudinal migration. In terms of latitude, birds appear to move from northern to southern ecoprovinces in August and September. Similarly, birds appear to move from higher elevation breeding areas to valley bottoms on a similar schedule (Campbell *et al.* 1997). The jays return to breeding sites in April and May. Site related dominance is used to describe its territoriality; where dominant birds do not tolerate the presence of sub-dominants within as much as 7 m (Greene *et al.* 1998). Males and females form monogamous, long-term pair bonds, and the mated pair is socially dominant to all other individuals near their nest site. Individual jays communicate utilizing variable, intergrading vocalizations, in conjunction with different postures and displays. This results in complex social hierarchies and dominance patterns (Birdweb 2005).

## **2 Distribution**

### **2.1 Provincial Range:**

Widespread and uncommon to locally fairly common resident on the coast and across the southern interior of the province. Rare to fairly common resident in the central interior, while it is rare in the northern boreal forests and the Peace Lowlands (Campbell *et al.* 1997).

#### **2.2.1 Elevation Range**

Living (LI) Coastal sites, sea level to 1,500 m and 300 m to 2,150 m at interior locations (Campbell *et al.* 1997).

## **3 Food/Cover Life Requisites and Habitat-uses**

### **3.1 Reproduction (RE) / Growing**

A majority of nesting habitat is composed of mature coniferous forests. However, young forests, forest edges and developed interface can be utilized to a lesser extent. Young coniferous trees including Douglas-fir, western hemlock, western red cedar and spruce have an equal distribution of use as nest trees. To a lesser extent deciduous shrubs may be used for nesting. Nests tend to be located near the top on horizontal branches close to the bole of tree. The nest is bulky and is composed of twigs, grass, leaves and moss; and some nests are held together with a mud cup, similar to the American Robin (*Turdus migratorius*). The nest cup is usually lined with fine rootlets, grass, conifer needles, and

other fine materials such as moss or paper. Nest materials are sometimes salvaged from the old nests of other bird species (Cannings *et al* 1987). In British Columbia nest heights ranged from ground level to 9 m with most nests found between 2 and 5 m. (Campbell *et al.* 1997). When nesting near human activity, they are considered to tolerate a fair amount of disturbance (Campbell *et al.* 1997).

### 3.2 Living (LI) / Winter

Moving from higher elevation breeding areas in the fall, the Steller’s Jay will utilize a variety of natural and human influenced lowland habitats through the winter, including open woodlands, residential areas, forest edges, riparian thickets and right-of-ways. Use of swamps, bogs, second-growth forests, orchards, gardens and brushy clear cuts is also common (Campbell *et al.* 1997).

**Table 1. Monthly Life Requisites for Steller’s Jay**

Month	Season*	Life requisites
January	Winter	Living
February	Winter	Living
March	Winter	Living
April	Early Spring	Reproduction-Eggs/Living
May	Late Spring	Reproduction-Eggs/Living
June	Summer	Reproduction-Eggs/Living
July	Summer	Reproduction-Eggs/Living
August	Summer	Living
September	Fall	Living
October	Fall	Living
November	Winter	Living
December	Winter	Living

**Table 2. Food/cover life requisites rated for Steller's Jay in the Merritt TSE**

Food/Cover life requisite	Habitat-use	Months	Rating column title
Food and Security	Reproducing during the growing season	Apr - July	BSTJA_RE_G
Food and Security	Living during the winter	Sep-Mar	BSTJA_W

**Table 3. List of Relevant PEM Attributes**

Life Requisite	PEM Attribute
Reproduction (RE)	<ul style="list-style-type: none"> <li>BGC Zone, site series, structural stage,</li> </ul>
Living (LI)	<ul style="list-style-type: none"> <li>BGC Zone, site series, structural stage</li> </ul>

## 4 Ratings

There is an intermediate knowledge of the habitat requirements of Steller’s Jay in British Columbia, so a 4-class rating scheme will be used (RISC 1999; Table 3).

**Table 4. Habitat Capability and Suitability 4-Class Rating Scheme.**

<b>% of Provincial Best</b>	<b>Rating</b>	<b>Code</b>
100% - 76%	High	H
75% - 26%	Moderate	M
25% - 1%	Low	L
0%	Nil	N

#### **4.1 Provincial Benchmark**

No provincial benchmark has been set for this species. In British Columbia the highest numbers of Steller's Jay occur in the Georgia Depression and on Vancouver Island. In the Merritt TSA optimal reproducing and winter living habitat is found in the CWH, MH, MS, and IDF zones.

#### **4.2 Ratings Assumptions**

Based on its elevation range, all BEC subzones in the Merritt TSA will provide suitable habitat for the Steller's Jay. The breeding range of Steller's Jay starts with availability of Douglas-fir at the lower elevations and end at the tree-line of the upper elevation. Structural stages 6 and 7 are assumed to provide a more complex understory and are rated higher.

##### 4.2.1 Reproduction (RE)

1. In the CWH, MH, MS and IDFdk: Mesic to hygric sites with structural stages 6 and 7 will be rated up to High; with structural stages 4 and 5 rated up to Moderate and structural stage 3 rated Low. Xeric sites with structural stages 6 and 7 will be rated up to Moderate, structural stages 4 and 5 rated up to Low and structural stage 3 rated Nil. Structural stages 0-2 are rated Nil for all site series.
2. In the ESSF, IDFxh and PP zones: Mesic to hygric sites with structural stages 6 and 7 will be rated up to Moderate with structural stages 4 and 5 rated up to Low and structural stages 0-3 rated Nil. Xeric sites with structural stages 6 and 7 are rated Low, with structural stages 0-5 rated Nil.
3. In the AT and BG zones, hygric sites with structural stages 6-7 will be rated up to Low. All other site series and structural stages will be rated Nil.
4. Rock, Talus, Avalanche, Urban, Water, and Cultivated Fields are rated Nil

##### 4.2.2 Living (LI)

1. In the AT, ESSF and MH zones: For all site series, structural stages 4 - 7 are rated up to Low and structural stages 0-3 rated Nil.
2. In the CWH, IDF and PP zones: Mesic to hygric sites with stages 6-7 will be rated up to High, with structural stages 4-5 rated up to Moderate, structural stage 3 rated Low and structural stages 0-2 rated Nil. Xeric sites with structural stages 6-7 are rated up to Moderate with structural stages 4 and 5 rated up to Low and structural stages 0-3 rated Nil.
3. In the BG zone, hygric sites with structural stages 6 and 7 will be rated up to Moderate with structural stages 4 and 5 rated up to Low and structural stages 0-3 rated Nil. All other site series and structural stages will be rated Nil.
4. In the MS zone: Hygric sites with structural stages 6 and 7 will be rated up to Moderate; with structural stages 4 and 5 rated up to Low and structural stage 0-3 rated Nil. Xeric and mesic sites with structural stages 6 and 7 will be rated up to Low, structural stages 0-5 will be rated Nil.
5. Rock, Talus, Water, Avalanche, and Cultivated fields are rated Nil. While jays are found in Urban areas it will be rated Nil as the mapping considers Urban as structural stage 1.

### 4.3 Reliability Qualifier

**Table 5. Number of plots in each rating class from field work.**

	High (1)	Mod High (2)	Moderate (3)	Low (4)	Very Low (5)	Nil (6)	Total
B-STJA-W	14	13	33	42	62	42	206
B-STJA-G	12	16	30	76	39	33	206

In the field, units rated high in the winter included the IDFdk1 - 05; IDFdk2 - 01, 04, 05 and 07; and the IDFxh1 - 01, 06, 09, 11 and 12. Units rated moderately high in the growing season included the IDFdk2 - 01, 06 and 07; IDF dk1 - 05; and the IDFxh1 - 01, 06, 09 and 11.

Based on a review of information extrapolated from similar ecosystems and ground truthing at the reconnaissance level, the species-habitat model has a Moderate Reliability.

### 5 Ratings Adjustments

There are no ratings adjustments.

## 6 References

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