

Yellow-rumped Warbler

Dendroica coronata (Linnaeus)

D. c. auduboni group (“Audubon’s” Warbler)

D. c. coronata group (“Myrtle” Warbler)

YRWA

AUWA

MYWA



Figure 53. Adult male Yellow-rumped (“Myrtle”) Warbler, *coronata* group (Revelstoke, 30 April 1997; R. Wayne Campbell). In breeding plumage, the bright yellow patches on the rump, side, and crown and the white eyebrow and throat are the best distinguishing field marks.



Figure 54. Adult male Yellow-rumped (“Audubon’s”) Warbler, *auduboni* group (Revelstoke, 30 April 1997; R. Wayne Campbell). In breeding plumage, the bright yellow patches on the rump, side, crown, and throat are distinguishing field marks.

RANGE: Breeds from western and central Alaska, northern Yukon, northwestern and central Mackenzie, southwestern Keewatin, northern Manitoba, northern Ontario, northern Quebec, north-central Labrador and Newfoundland south in the west to northern Baja California, southern California, Arizona, New Mexico, the mountains of western Durango and eastern Chiapas in Mexico, western Chihuahua, and western Guatemala, and in the east to northern Minnesota, central Michigan to eastern West Virginia, Pennsylvania, northern New Jersey, western Maryland, Connecticut, and Massachusetts. Winters locally from southwestern British Columbia and the Pacific states south to Arizona, Colorado, and eastern Kansas; east across the central United States to southern Ontario and New England, south through the southern United States and Mexico to eastern Panama and the West Indies.

STATUS: On the coast, a *fairly common* to *very common* migrant and summer visitant in the Georgia Depression Ecoprovince (locally *very common* to *abundant* during both spring and autumn migration), and *uncommon* to locally *fairly common* in winter, particularly on southeastern Vancouver Island south of Nanaimo and on the Fraser River delta; in the Coast and Mountains Ecoprovince, *uncommon* to *fairly common* migrant and summer visitant (locally *very common* in migration) and *casual* in winter in the Southern Mainland Coast and Northern Mainland Coast, *uncommon* to *fairly common* migrant and summer visitant (occasionally *common* in migration) and *very rare* in winter on Western Vancouver Island (locally *common* winter visitant on Stubbs Island), and *very rare* on the Queen Charlotte Islands.

In the interior, a *fairly common* to *common* migrant and summer visitant and *casual* to *very rare* in winter in the South-

ern Interior, Southern Interior Mountains, and Central Interior ecoprovinces (locally *very common* to *very abundant* during spring and autumn migration), becoming an *uncommon* to *fairly common* migrant and summer visitant (locally *common* to *very common* during migration) in the ecoprovinces further north.

Breeds.

NONBREEDING: The Yellow-rumped Warbler (Figs. 53 and 54) is British Columbia’s most widespread and abundant warbler and is distributed throughout much of the province. Along the coast, it occurs from southern Vancouver Island and the Fraser Lowland north throughout most of Vancouver Island and the adjacent southwest mainland coast. Its distribution becomes more irregular further north. There are few observations of this warbler from the Queen Charlotte Islands.

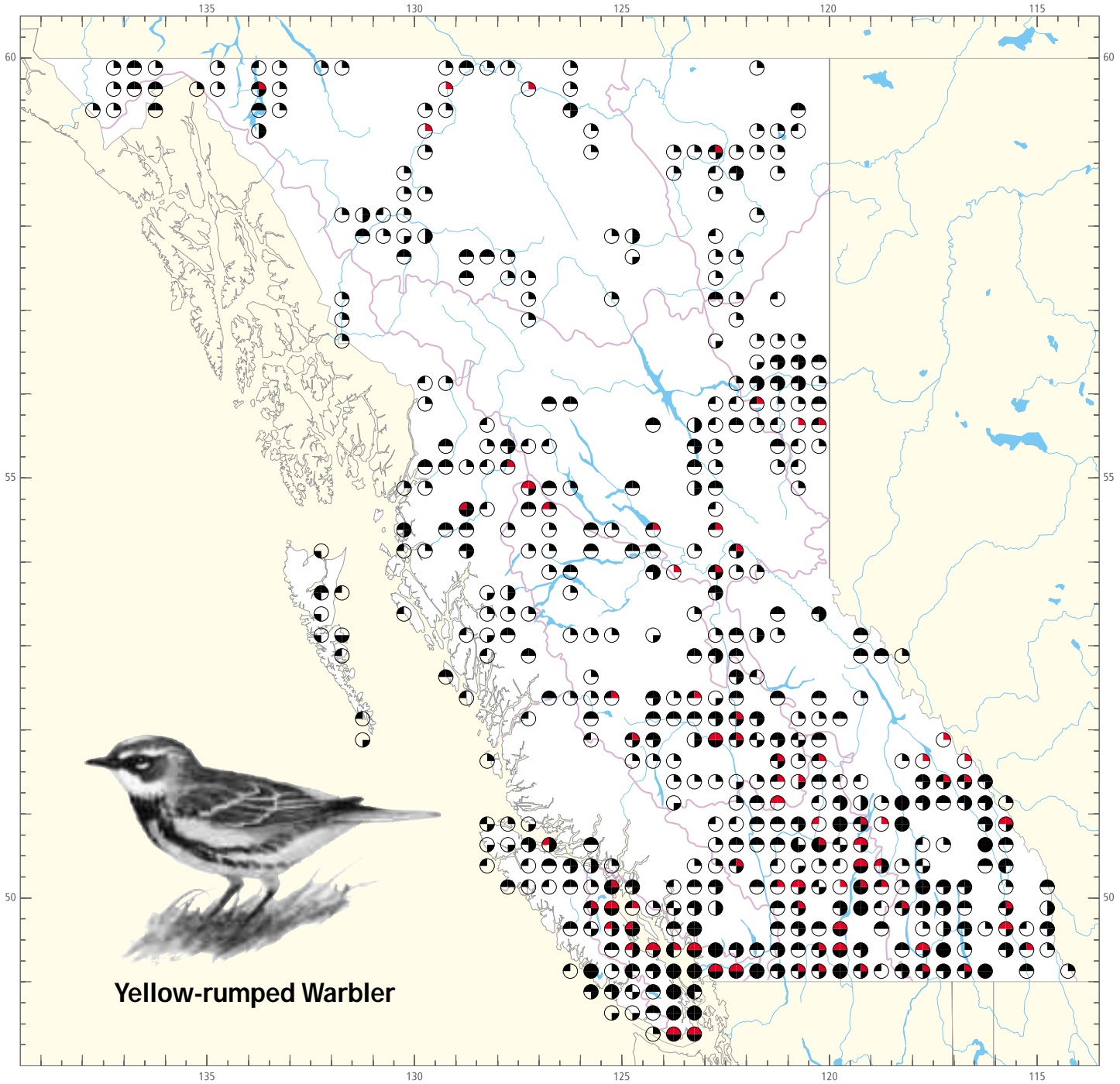
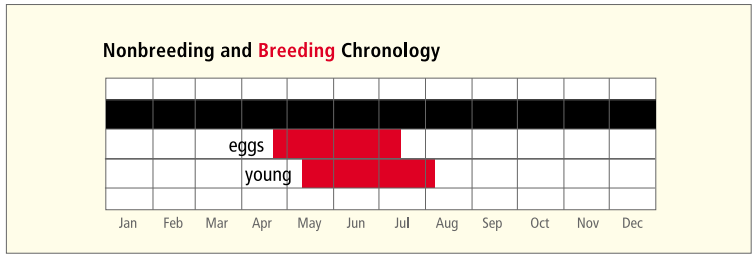
In the interior, the Yellow-rumped Warbler occurs from the international boundary north through the southern and central portions of the interior to the southern portions of the Sub-Boreal Interior and Boreal Plains. Further north, its reported distribution is more patchy, possibly a reflection of a lack of observers in areas of suitable habitat.

There are large areas of the province from which the Yellow-rumped Warbler has not been reported, including much of the mountainous areas of the southwest mainland coast, the McGregor River valley, a large area from the Driftwood River valley northwest to the Stikine River valley, the Rocky Mountain Trench from Mackenzie north to Lower Post, an area between the Stikine River valley and Atlin and Teslin lakes, and an area centred around the junction of the Liard and Fort Nelson rivers. Again, this is probably a result of inadequate field investigations.

Order Passeriformes Family Parulidae

Nonbreeding Breeding

☐Mar Apr May.....☐
☐Jun Jul Aug.....☐
☐Sep Oct Nov.....☐
☐Dec Jan Feb.....☐



	Data Base												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
Nonbreeding	143	111	355	1,880	2,129	1,991	911	791	1,285	594	134	309	10,633
Breeding	0	0	0	4	47	129	62	4	0	0	0	0	246

Yellow-rumped Warbler

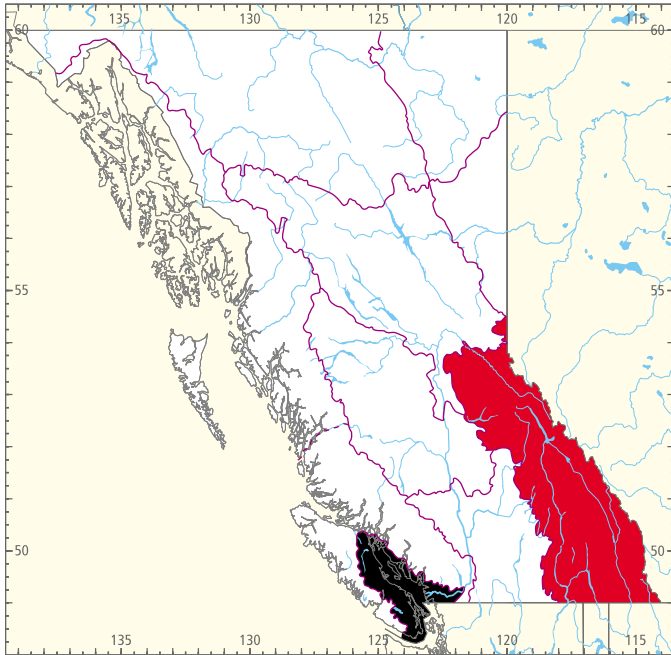


Figure 55. In British Columbia, the highest numbers for the Yellow-rumped Warbler in winter (black) occur in the Georgia Depression Ecoprovince; the highest numbers in summer (red) occur in the Southern Interior Mountains Ecoprovince.

The highest numbers in winter occur in the Nanaimo Lowland and Fraser Lowland of the Georgia Depression (Fig. 55).

During migration, the Yellow-rumped Warbler has been reported from near sea level to 1,830 m elevation on the coast; in the interior, it has been reported from 240 to 2,200 m. It frequents a wide variety of forested and unforest habitats, including subalpine meadows, but in British Columbia it seems to prefer mixed forests or stands that are relatively open in structure. Forest edges and riparian habitats are used extensively.

On the coast, the Yellow-rumped Warbler has been reported from old-growth and second-growth coniferous forests, deciduous forests, and mixed forests, and especially open forests. It also frequents woodland or shrubby riparian habitats such as those adjacent to intertidal areas, marshes, lakes, rivers, and sewage lagoons. The riparian habitats along rivers and lakes are used heavily by migrating flocks in spring. Other habitats have included backyard gardens, treed boulevards (Fig. 56), orchards, and powerline rights-of-way.

In the interior, this warbler has been reported from most forest types (Fig. 61). Other habitats have included grasslands, big sagebrush areas, sphagnum bogs, orchards, and backyards. During spring migration, it is not uncommon to see waves of Yellow-rumped Warblers streaming across open shrublands, hanging like grapes from big sagebrush and other shrubs, a habitat seldom used at any other time.

Little is known of the roosting habitat of this warbler in British Columbia. In the interior, J.M. Cooper found Yellow-rumped Warblers roosting in little pockets and perched on small ledges in a cutbank (Fig. 57). He observed 9 birds flying into the bank during a heavy rain just before sunset. They were still there after dark but had left by dawn.



Figure 56. During migration, the Yellow-rumped Warbler can be found in a wide variety of habitats, including woodlands bordering highways (Abbotsford, 21 April 1997; R. Wayne Campbell).



Figure 57. Yellow-rumped Warblers asleep and roosting on small ledges in a cutbank of a gravel pit (Cache Creek, 10 May 1996; John M. Cooper).

On the coast, the first spring arrivals in the Georgia Depression are masked by overwintering birds, but numbers start to build about the third week of March (Fig. 60). Numbers continue to build until the last week of April, when the peak of migration occurs, and then drop off abruptly in the second week of May. A similar trend occurs in the Southern Mainland Coast. On Western Vancouver Island, arrival is also masked by overwintering birds; there is a small but noticeable movement from the end of March through the first week of May. Birds begin to arrive on the northern portions of the coast about the second week of April and peak in the first week of May.

In the interior, spring migration begins as birds arrive in the southern and central regions as early as the last week of March (Figs. 58, 59, and 60), although the main movement does not begin until at least the first week of April. Numbers build through April and peak in the second week of May in the Southern Interior and Central Interior, and by the third week of May in the Southern Interior Mountains. In the Southern Interior, the numbers of this warbler in passage can be spectacular, with waves of between 500 and 1,500 birds

moving through in succession in early May. In the Southern Interior and Central Interior, numbers drop abruptly in the third week of May. In the Southern Interior Mountains, numbers drop by the end of May but remain relatively high

through the summer compared with the other ecoprovinces (Fig. 60). Birds arrive in the Sub-Boreal Interior in the second week of April, and numbers peak between the first and third weeks of May.

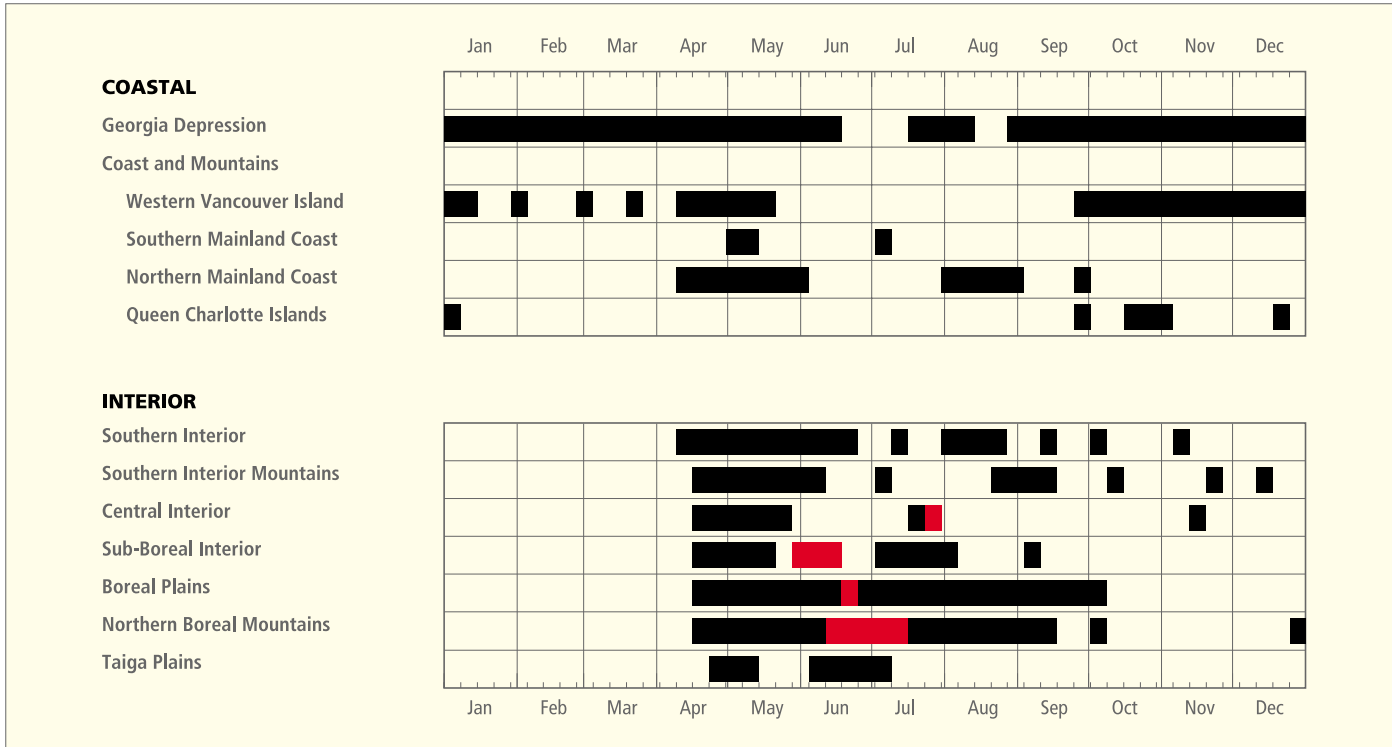


Figure 58. Annual occurrence (black) and breeding chronology (red) for the Yellow-rumped ("Myrtle") Warbler, *coronata* group, in ecoprovinces of British Columbia. Records are shown for the week in which they occurred.

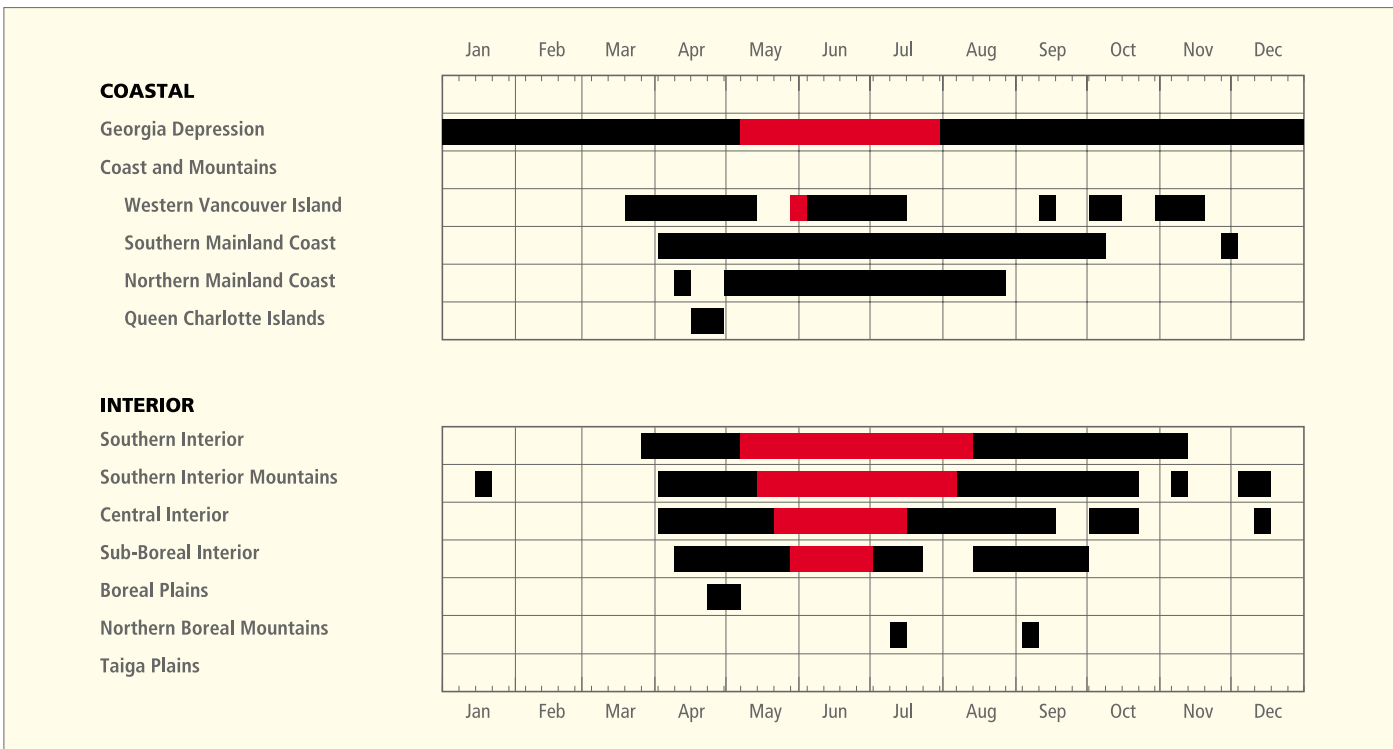


Figure 59. Annual occurrence (black) and breeding chronology (red) for the Yellow-rumped ("Audubon's") Warbler, *auduboni* group, in ecoprovinces of British Columbia. Records are shown for the week in which they occurred.

Yellow-rumped Warbler



Figure 60. Fluctuations in total number of birds (purple line) and total number of records (green line) for the Yellow-rumped Warbler in ecoprovinces of British Columbia. Christmas Bird Counts, Breeding Bird Surveys, and nest record data have been excluded.



Figure 61. During autumn migration, the Yellow-rumped Warbler uses a wide variety of habitats, including subalpine forests (Copper Mountain, southwest of Nelson, 24 September 1997; R. Wayne Campbell).

Birds may arrive in the Peace Lowland of the Boreal Plains and in the Northern Boreal Mountains as early as the third week of April, but large numbers normally do not appear until the first week of May. Most of these birds likely enter this area from east of the northern Rocky Mountains, and consist mainly of the *coronata* group (see REMARKS). In the Boreal Plains, numbers rise quickly and peak in the second and third weeks of May; most have passed through by the end of that month. A spring movement through the Northern Boreal Mountains and the Taiga Plains cannot be discerned with the limited data we have from these areas.

The autumn migration begins in August in the far north, but because of our limited data it is barely discernible in the 2 northernmost ecoprovinces. In the Atlin region, however, Swarth (1926) noted that the southern movement peaked in the last week of August and first week of September. He reported that flocks of warblers, mostly this species, flitted rapidly through the poplar woods, and there was a constant stream of “Myrtle” Warblers making long flights overhead. Most birds have left that area by mid-September, although stragglers may remain into the third week of that month. Some northern Yellow-rumped Warblers may take a coastal migra-

tion route to southern areas. In the Stikine River region, Swarth (1922) noted that this warbler appeared to migrate coastward, suggesting a late summer line of travel down the Stikine River to the coast. He found similar conditions in late summer at the mouth of the Taku River, about 240 km north of the Stikine. This coastwise movement at this latitude likely involves only the *coronata* group (see REMARKS).

Birds moving through the Boreal Plains are most abundant between the second week of August and the second week of September, with no particular peak discernible (C. Siddle pers. comm.). Most birds have gone by the end of the month, although stragglers may remain into the first week of October (Figs. 58, 59, and 60).

In the Sub-Boreal Interior, there are few reports on the autumn migration, which probably occurs from early August to the last week of September. In the Central Interior, birds appear to move through in waves from early August to the last week of September; small numbers may remain until mid-October. A similar pattern occurs in the Southern Interior Mountains. In the Southern Interior, autumn numbers begin to build by the second week of August and peak in the first or second weeks of September. The numbers gradually decline after that, and most birds have left the region by the third week of October.

On the Northern and Southern Mainland coasts, the autumn movement has been almost unreported, but probably occurs between the third week of August and the end of September. On Western Vancouver Island, numbers increase from the first week of September into early October, but migrants soon become difficult to distinguish from the overwintering birds. In the Georgia Depression, Yellow-rumped Warbler numbers begin to increase in the last week of August; they build to a peak in the last week of September and the first week of October. The autumn movement is still obvious into the third week of October, but most migrants have passed through by the end of that month.

The Yellow-rumped Warbler often occurs in mixed-species flocks during migration. In British Columbia, they have been reported with Hammond’s and Dusky flycatchers, American Robins, Ruby-crowned and Golden-crowned kinglets, Red-breasted Nuthatches, Orange-crowned, Nashville, Yellow, and Magnolia warblers, Common Yellowthroats, and Dark-eyed Juncos.

The adaptability of this species allows it to undergo a migration that extends well into the autumn, secure in its ability to find food under most of the conditions it would encounter during the season regardless of how far it has to go to reach the wintering grounds (J.P. Hubbard pers. comm.).

Small numbers regularly winter in the Nanaimo and Fraser lowlands of the Georgia Depression and locally on Western Vancouver Island.

The wintering population on Western Vancouver Island is of special interest. On Stubbs Island, just west of Tofino, a small population of 30 to 50 birds spends the winter in a California wax-myrtle (*Myrica californica*) “forest” (Fig. 62), feeding on the wax-myrtle berries. The Yellow-rumped Warbler population that winters there consists entirely of the *coronata*

Yellow-rumped Warbler

group (A. Dorst pers. comm.). This may be a recent event. Hatler et al. (1978) note the "Myrtle" Warbler only as a migrant in Pacific Rim National Park, and they reported just 1 sighting of the Yellow-rumped Warbler after the end of August.

In British Columbia, California wax-myrtle occurs only in an isolated pocket along the west coast of Vancouver Island between Ucluelet and Tofino. On Stubbs Island, it reaches 5 to 6 m in height and densely covers an estimated 1 ha of land (A. Dorst pers. comm.). This situation is somewhat reminiscent of the wintering habitat of this warbler in eastern North America, where thickets of bayberry (*Myrica pennsylvanica*) and wax-myrtle (*Myrica cerifera*) provide food and shelter for the "Myrtle" Warbler (which bears the latter plant's name), even in areas of heavy snowfall (Wilz and Giampa 1978; Godfrey 1986; Terres 1991). There concentrations can be awesome; hordes flush ahead of the advancing birder, filling the air with hard *chek* calls (Farrand 1983).

Like other winter frugivores, they often flock in that season – a social system linked to the exploitation of patchy, temporarily abundant resources (Morse 1989).

On the coast, the Yellow-rumped Warbler has been recorded regularly throughout the year; in the interior, it has been regularly recorded from 29 March to 15 October (Figs. 58 and 59).

BREEDING: The Yellow-rumped Warbler likely breeds throughout most of its summer range in British Columbia, except on the Queen Charlotte Islands.

Along the coast, it nests in much of the Georgia Depression north to Campbell River. On Western Vancouver Island, in the Coast and Mountains, there is only 1 breeding record: near the northern end of the island, at Sointula. A vast area of mainland coast north to Kitimat lacks any reports of breeding by this species.

In the interior, the Yellow-rumped Warbler has a widespread breeding distribution in suitable habitat south of latitude 53°N. Further north its breeding distribution extends to



Figure 62. On Western Vancouver Island, a small population of the Yellow-rumped ("Myrtle") Warbler, *coronata* group, winters locally near Tofino, feeding on berries of the California wax-myrtle (*Myrica californica*) (Stubbs Island, May 1999; Adrian Dorst).

the northern boundary of the province, although nesting records are few.

This warbler reaches its highest numbers in summer in the Southern Interior Mountains (Fig. 55). An analysis of Breeding Bird Surveys in British Columbia for the period 1968 through 1993 could not detect a net change in numbers on either coast or interior routes. An analysis of Breeding Bird Survey data for 1966 to 1996 yielded similar results for the *auduboni* group across both Canada and North America (Sauer et al. 1997). For the same period, Canadian and North American data for the *coronata* group showed average annual increases of 1.8% ($P < 0.01$) and 1.5% ($P < 0.05$), respectively, although recent trends (1980 to 1996) suggest relatively stable populations (Sauer et al. 1997). Continent-wide Breeding Bird Survey data indicate that British Columbia has some of the highest densities of the *auduboni* group in North America (Sauer et al. 1997).

The Yellow-rumped Warbler has been reported nesting on the coast from near sea level to 490 m elevation; in the interior, it has been reported from 240 m to subalpine habitats (Fig. 63) of at least 2,250 m elevation. Most nests (66%; $n = 197$) were in forested habitats, followed by human-influenced (25%) and riparian habitats.

Of the forested habitats, coniferous forests were selected most frequently (33%; $n = 152$; Fig. 63) and included nearly every coniferous forest type in the province. Mixed woods (16%) and deciduous woods (12%; Fig. 64) were selected less frequently. Riparian habitats comprised 8% of reported nesting habitats, while human-influenced nesting habitats (31%) included suburban, urban, and rural areas, cultivated farmlands, recreational areas, pasture, orchards, and logged areas.

The seral stages used for nesting included young and regenerating forests as well as second-growth, mature, and old-growth forests. Backyard gardens and residential areas were the human-influenced habitats most often reported as nesting sites.



Figure 63. The Yellow-rumped ("Myrtle") Warbler, *coronata* group, breeds in open coniferous forests in subalpine areas of the Northern Boreal Mountains Ecoprovince (Stone Mountain, 28 June 1996; R. Wayne Campbell).



Figure 64. In the southern portions of the interior of British Columbia, the Yellow-rumped ("Audubon's") Warbler, *auduboni* group, breeds in a wide variety of forest types, including deciduous woodlands often found along sloughs and rivers (Creston, 11 May 1997; R. Wayne Campbell).

Although coniferous forests are important habitats for this species throughout much of British Columbia, Bryant et al. (1993) note that this warbler was not found consistently on any transect in clearcut, 15- to 20-year-old, 30- to 35-year-old, 50- to 60-year-old, or old-growth stands of the Coastal Western Hemlock Biogeoclimatic Zone in the Franklin River, Kennedy Lake, and Sproat Lake areas of Western Vancouver Island. B.R. Gates (pers. comm.) reported similar results on Breeding Bird Surveys in the nearby Elsie Lake region on central Vancouver Island.

In the Okanagan valley, the Yellow-rumped Warbler was found in all woodland habitats but was most plentiful above 600 m (Cannings et al. 1987). Schwab (1979), who studied the effect of vegetation structure on breeding bird communities in the Interior Douglas-fir Biogeoclimatic Zone of the east Kootenay region, found the Yellow-rumped Warbler in sites ranging from young conifers under 10 m in height to climax Douglas-fir forests more than 120 years old. Most Yellow-rumped Warblers were found in the mature seral stages of lodgepole pine over 10 m tall (21 to 60 years old), ponderosa pine–Douglas-fir over 10 m (61 to 100 years old), and climax Douglas-fir. In Mount Revelstoke and Glacier national parks, the habitats with the highest densities of Yellow-rumped Warblers were the Engelmann spruce–black cottonwood open forest, the Engelmann spruce–subalpine fir open forest, and the subalpine fir–mountain hemlock open forest (Van Tighem and Gyug 1983).

Further north, in trembling aspen forests near Smithers, Pojar (1993) found the highest densities of singing male Yellow-rumped Warblers in the old trembling aspen and mixed conifer–aspen seral stages. The densities of singing males in all seral stages were as follows: sapling trembling aspen, 0 to 16 per 10 ha ($n = 20$); mature trembling aspen, 19 to 21 per 10 ha ($n = 42$); old trembling aspen, 21 to 26 per 10 ha ($n = 11$); and mixed conifer–aspen, 24 to 26 per 10 ha ($n = 20$). She also found this warbler in a pure pine stand. Cowan (1939) noted that this warbler is characteristic of the black spruce and white spruce forests of the Peace Lowland. Phinney (1998) found it



Figure 65. In British Columbia, the Yellow-rumped Warbler nest consists mainly of coarse plant stems and small twigs and is lined with feathers and plant down (Whitehorse, Yukon, 28 June 1999; R. Wayne Campbell). It is placed in both coniferous and deciduous trees.

in coniferous (especially pine) and mixed-wood forests in the Dawson Creek area, and Greenfield (1998) noted it as being common in spruce forests along the Sikanni Chief River.

It is also common in lodgepole pine and trembling aspen forests, white spruce and trembling aspen forests, and the balsam poplar, trembling aspen, and white spruce forests of the Boreal Plains (C. Siddle pers. comm.). In the Stikine and Iskut river valleys of northwestern British Columbia, the Yellow-rumped Warbler was the third most common species recorded on songbird transects in coniferous, deciduous, and mixed forests and open shrublands (Blood et al. 1981).

Morse (1989) notes that the Yellow-rumped Warbler has the largest breeding territories of any warbler.

On the coast, the Yellow-rumped Warbler has been recorded breeding from 22 April to 29 July; in the interior, it has been recorded breeding from 29 April (calculated) to 6 August. Figures 58 and 59 show the known range in breeding dates for both the *coronata* and *auduboni* groups, respectively.

Nests: Most nests were placed in trees (87%; $n = 115$; Fig. 65), including both coniferous (49%) and deciduous (15%)



Figure 66. In British Columbia, the Yellow-rumped Warbler is a common host for the Brown-headed Cowbird (Creston, 21 June 1997; R. Wayne Campbell).

Yellow-rumped Warbler

trees. From the 91 records where the type of tree was noted, the most commonly used trees were Douglas-fir (14%), pines (13%), unidentified firs (12%), willows (11%; Fig. 65), spruce (9%), birch (8%), and trembling aspen (8%); other nest trees included apple, red alder, black cottonwood, cedar, western larch, Rocky Mountain juniper, hemlock, dogwood, bitter cherry, and poplar. Shrubs were used to a lesser degree (13%) and included hazelnut and common snowberry. Nests were placed in the fork or crotch of a branch or were saddled on a branch, often close to the trunk. The heights above ground for 103 nests ranged from 0.3 to 21 m, with 51% between 2.1 and 7.6 m.

Nests consisted of a small, flat cup composed mainly of grasses, twigs, and rootlets. They were lined with feathers, hair, and plant down (Fig. 65).

Eggs: Dates for 98 clutches ranged from 22 April to 15 July, with 52% recorded between 27 May and 20 June. Sizes of 52 clutches ranged from 1 to 5 eggs (1E-6, 2E-3, 3E-10, 4E-24, 5E-9), with 65% having 3 or 4 eggs (Fig. 66). The incubation period is 12 to 13 days (Knight 1905; Harrison 1979).

Young: Dates for 117 broods ranged from 11 May to 6 August, with 51% recorded between 15 June and 7 July. Sizes of 53 broods ranged from 1 to 4 young (1Y-8, 2Y-15, 3Y-16, 4Y-14), with 58% having 2 or 3 young. The nestling period is 10 to 12 days (Harrison 1979).

Brown-headed Cowbird Parasitism: In British Columbia, 21% of 118 nests found with eggs or young were parasitized by the cowbird (Fig. 66). Nest parasitism on the coast was 10% ($n = 20$); in the interior, it was 22% ($n = 118$). An additional 43 instances of fledgling cowbirds being fed by Yellow-rumped Warbler foster parents were reported. A comparison of the subspecies shows that both *D. c. auduboni* (20% of 54 nests; 14 fledged cowbirds reported being fed) and *D. c. coronata* (0 of 4 nests; 7 fledged cowbirds being fed) were parasitized by the cowbird. Friedmann and Kiff (1985) note a similar rate of cowbird parasitism at the Sierra National Forest in California (> 22%).

Nest Success: Of 26 nests found with eggs and followed to a known fate, 6 produced at least 1 fledgling, for a success rate of 23%. None of 7 coastal nests was successful; in the interior, nest success was 32% ($n = 19$).

REMARKS: The *coronata* and *auduboni* groups were formerly regarded as distinct species: the Myrtle Warbler and Audubon's Warbler, respectively (Figs. 53 and 54; American Ornithologists' Union 1957); however, intergradation occurs from southeastern Alaska southeast across central British Columbia to southern Alberta (American Ornithologists' Union 1983).

There are 4 recognized subspecies in British Columbia, 2 in the *D. c. coronata* group and 2 in the *D. c. auduboni* group. Three geographic races have been reported breeding in British Columbia: "Myrtle" Warbler, *D. c. hooveri* (northern British Columbia); "Audubon's" Warbler, *D. c. auduboni* (central and southwestern British Columbia); and *D. c. memorabilis* (southeastern British Columbia) (American Ornithologists' Union 1957). Hubbard (1970) notes, however, that the race

memorabilis is not distinguishable because of broad intergradation in wing length and plumage characters with northwestern populations. He further states that *memorabilis* does not breed in British Columbia, if in Canada at all. Vagrants no doubt occur, however, in the form of migrants overshooting the breeding ranges in areas such as Idaho and Montana. In addition, *hooveri* appears limited in British Columbia to the northwest, with *coronata* occupying the northeast, as shown by measurements from central Alberta.

Because the *coronata* and *auduboni* groups are distinguishable in the field, we have summarized the available data for the 2 groups below. For the most part, the summaries are based on identifications made using visual characteristics alone. We encourage observers to continue separating both groups in their field notes.

The *coronata* group: The "Myrtle" Warbler's nonbreeding distribution in the province is similar to the species' distribution as a whole (Fig. 67). In the southern portions of the province, however, its numbers are small compared with those of the more abundant *auduboni* group (Table 1). North of latitude 55°N, *coronata* becomes the dominant group. In spring, this group has a widespread distribution throughout the province, but by summer its numbers are concentrated in the northernmost ecoprovinces. Autumn reports are widely scattered, with most coming from the Georgia Depression; most birds have left the northern regions by the end of summer. The Georgia Depression birds may be part of a population that Swarth (1922) noted moving down the river valleys to the coast. Some of these birds stay through the winter in the Georgia Depression and Western Vancouver Island (see NONBREEDING).

We have only 4 nesting reports for the *coronata* group, 2 of which occurred below latitude 55°N: Fort St. James (54°26') and Stum Lake (52°17') (Fig. 67). While the observers specifically noted the birds as belonging to the *coronata* group, we

Table 1. Ratios of the *auduboni* group to the *coronata* group of the Yellow-rumped Warbler in ecoprovinces of British Columbia. The ratios are based on records where the observer identified the species group.

Ecoprovince	<i>auduboni:coronata</i> ratio	Number of birds
Coastal		
Georgia Depression	3:1	1,790
Western Vancouver Island	1:1	90
Southern Mainland Coast	14:1	61
Northern Mainland Coast	2:1	60
Queen Charlotte Islands	1:4	10
Interior		
Southern Interior	10:1	457
Southern Interior Mountains	7:1	252
Central Interior	5:1	290
Sub-Boreal Interior	2:1	271
Boreal Plains	1:66	269
Northern Boreal Mountains	1:64	129
Taiga Plains	0:27	27

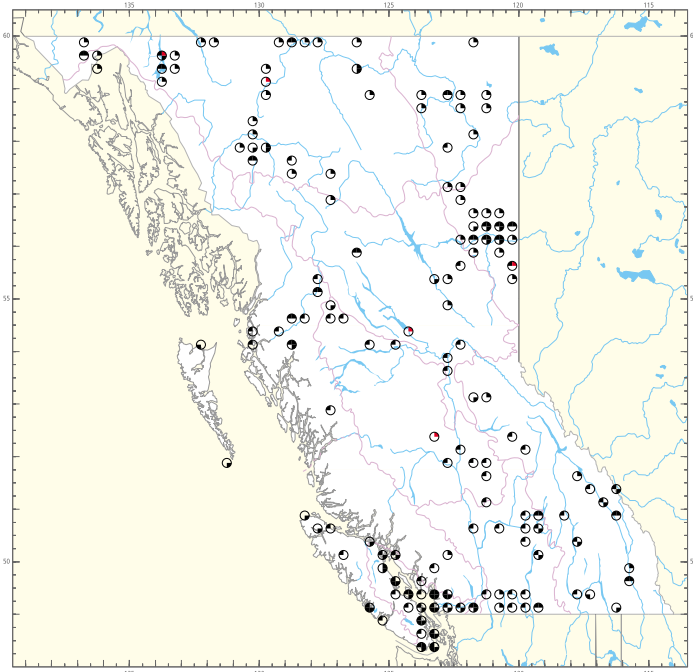


Figure 67. Nonbreeding (black) and breeding (red) distribution of the "Myrtle Warbler" in British Columbia.

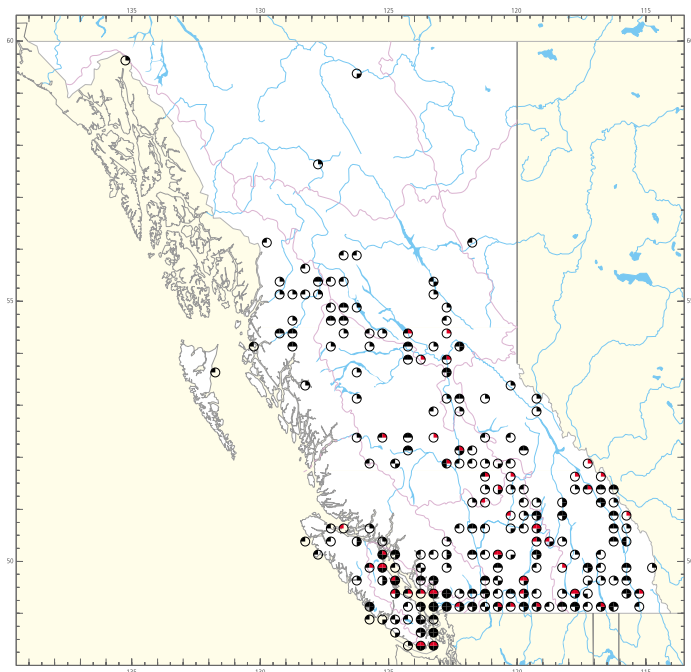


Figure 68. Nonbreeding (black) and breeding (red) distribution of the "Audubon's Warbler" in British Columbia.

could not tell from their reports whether both birds in the pair were seen and identified; thus, the pair in each case may have consisted of members of both groups.

The *auduboni* group: Members of this group have a widespread distribution in British Columbia north to about latitude 56°N (Fig. 68). We have only 7 reports of this group's occurrence further north. South of latitude 56°N, *auduboni* is the dominant form in all seasons (Table 1). At or near the northern limit of this group's range, Stanwell-Fletcher and Stanwell-Fletcher (1943) noted that it was probably the most common warbler at Tetana Lake in the Driftwood River valley; both groups occurred there.

The breeding distribution of the *auduboni* group ranges across southern British Columbia, including Vancouver Island, north to Fort St. James (54°26') and Summit Lake (54°17'), north of Prince George (Fig. 68).

Our data support those of Hubbard (1969), who studied the interbreeding of the *coronata* and *auduboni* groups in southeastern Alaska, British Columbia, and Alberta. He based his analysis primarily on 6 breeding plumage characteristics of males: wing pattern, tail pattern, throat colour, auricular colour, and the presence or absence of a supraloral spot and postocular line. His results clearly demonstrated intergradation between the then-species *D. coronata* and *D. auduboni*. Figure 69 shows the results Hubbard (1969) obtained. Birds displaying characteristics of the *auduboni* group occurred west of the Rocky Mountains and south of about latitude 56°N; birds with characteristics predominantly of the *coronata* group occurred east of the Rocky Mountains, with the exception of those that occurred in the northwestern portion of the province. Intergradation in most characteristics is restricted to a zone of a few hundred kilometres or less in width. Hubbard (1969) noted that the 2 groups inter-

breed and backcross freely where their ranges meet; away from those areas, however, massive introgression appears to be prevented by the limited area of contact between the 2 groups.

Besides an introgression zone, Hubbard (1969) and Barrowclough (1980) found a number of hybrid zones where

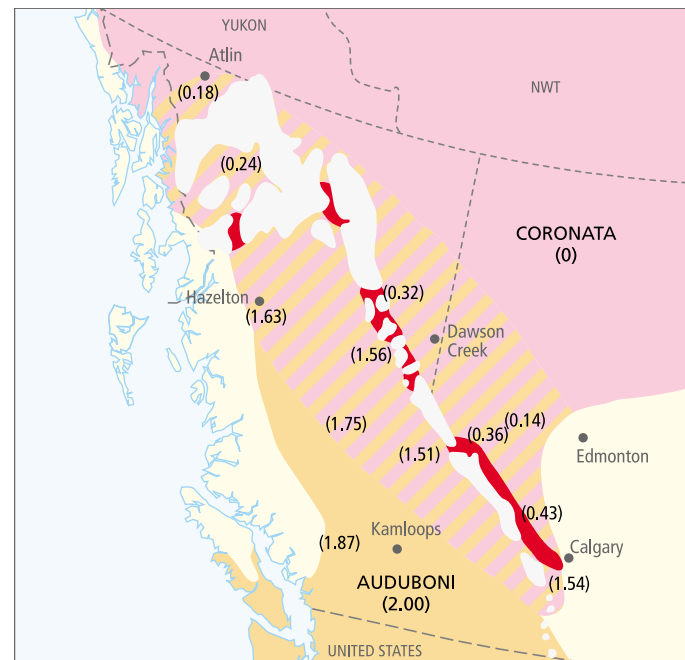


Figure 69. The area of interbreeding between the *coronata* group and the *auduboni* group of the Yellow-rumped Warbler in British Columbia. The introgression zone is cross-hatched and the hybrid zone is red. The white area is primarily unforested habitat. The numbers are selected sample means for plumage characteristics, with pure *coronata* having a value of 0 and pure *auduboni* having a value of 2 (modified from Hubbard 1969).

Yellow-rumped Warbler



Figure 70. During the height of autumn migration in southern British Columbia, when dense fog and cloud obscure corridors, Yellow-rumped Warblers are often killed by automobiles as they move along and across major highways (Bridesville, 22 September 1996; R. Wayne Campbell).

the characteristics of the birds were intermediate between the 2 groups. They noted that hybridization probably occurred in the upper reaches of the Iskut and Nass, and perhaps the Skeena and Stikine, river valleys. Hubbard (1969) suggested that other probable areas included the Kechika, Findlay [sic; = Finlay], and Peace rivers (Fig. 69), although based on our

available information, the latter area, east of the Rocky Mountains, is likely not a hybridization zone.

Hubbard (1969) proposed that an ancestral population of the Yellow-rumped Warbler inhabited North America during the late Pleistocene, and that the advancing glaciation split it along the Rocky Mountain axis. Part of the population (*D. c. coronata*) adapted to the boreal forest and the other (*D. c. auduboni*) adapted to the montane forests. When the glaciers receded, the 2 separate populations once again came into contact where they could freely interbreed.

During spring and autumn, when dense fog and low clouds often settle in valleys (Fig. 70), migrating Yellow-rumped Warblers are vulnerable to being killed by vehicular traffic along major highways. On 22 September 1996, 11 dead birds were counted along a 100 m stretch of Highway 3 near Bridesville.

An adult male “Audubon’s” Warbler banded in Vancouver on 18 April 1954 was recovered on 25 April 1958 in Toronto, some 3,500 km east (Hughes 1959).

For a summary of the systematics and natural history of the Yellow-rumped Warbler in North America, see Hunt and Flaspohler (1998). Morse (1989) provides an ecological and behavioural review of North American warblers, including the Yellow-rumped Warbler.

NOTEWORTHY RECORDS

Spring: Coastal – *D. c. auduboni*: Skirt Mountain 28 May 1973-10; Sooke Harbour 21 May 1945-4 nestlings about 3 days old; Victoria 8 May 1918-4 eggs; Elk Lake 17 Apr 1984-30; Beaver Lake (Saanich) 29 Apr 1972-200 (Tatum 1973); Tofino 24 Mar 1968-1 (Hatler et al. 1978); Westham Island 17 Mar 1970-10 (Campbell et al. 1972a); Reifel Island 4 May 1982-120; Surrey 25 Mar 1979-57, sizeable flock moving through area; Langley 9 Apr 1967-15, in woods at Murray Creek mouth; Langley 22 Apr 1969-25 at airport; Glen Valley 28 Apr 1974-50; Skagit River valley 20 Apr 1971-20; Sechelt 2 May 1981-100; Vancouver 19 Apr 1980-200 at Stanley Park, 25 Apr 1981-75, 15 Apr 1996-214 at John Hendry Park; North Vancouver 13 Apr 1980-50 at Cates Park; Silver Lake (Skagit River valley) 28 Apr 1973-10, 11 May 1974-15; Courtenay 4 Apr 1988-18; Alice Lake 14 May 1961-12; Solander Island 5 May 1975-1; Sunshine Coast 6 Apr 1984-1; Grant Bay 1 May 1969-1 (Richardson 1971); Port Hardy 21 Apr 1939-10; Sointula 28 May 1976-adults feeding nestlings; Tlell 24 Apr 1972-1, singing; Kitimat 29 May 1975-5; Lakelse Lake 13 Apr 1980-2, “Myrtle” subspecies also present; Cedarvale 7 May 1980-4; Meziadin Lake 30 May 1978-2. *D. c. coronata*: Oak Bay 26 Mar 1977-4; Blenkinsop Lake 10 Apr 1990-6; Saanich 16 Apr 1981-16 at Quick’s Pond; Beaver Lake (Saanich) 4 Apr 1979-3; Stubbs Island

25 Mar 1984-12, all in winter plumage, 15 Apr 1979-4; Tofino 18 to 20 May 1974-1; Beach Grove 22 Apr 1979-15; Sea Island 29 Apr 1972-200 (Campbell et al. 1974); Reifel Island 1 May 1972-30 (Campbell et al. 1974), 4 May 1982-100; Port Alberni 23 Apr 1988-10; Burnaby Lake 20 Apr 1980-20; Vancouver 13 Apr 1985-65 at Jericho Park, 15 Apr 1974-19 at Lost Lagoon, 20 Apr 1987-100 at Jericho Park, 16 May 1975-40 at Stanley Park; West Vancouver 23 Apr 1972-42 (Campbell et al. 1974); Sechelt 2 May 1981-25; Hope 4 May 1975-1; Alice Lake 3 May 1969-1; Woss Camp 10 May 1980-2; Port Hardy 19 Apr 1936-4; Kimsquit River 22 Apr 1982-1; Kitimat Mission 11 May 1975-8. *Undetermined subspecies*: Mount Douglas 14 May 1993-nestlings; Cowichan Bay 18 Mar 1972-10; Boundary Bay 2 May 1982-120; Reifel Island 14 Apr 1985-15; Langley 5 Apr 1966-30; New Westminster 22 Apr 1939-5 eggs; Surrey 4 Apr 1966-15; Vancouver 14 Apr 1985-25 at Jericho Park, 22 Apr 1988-200 at Stanley Park, 1 May 1969-101 (Weber 1972); West Vancouver 2 May 1982-150; Pitt Meadows 9 Apr 1974-20, 4 May 1929-100; Seabird Island 20 Apr 1984-34; Harrison Hot Springs 22 Mar 1980-1, 4 May 1986-79; Englishman River 22 Mar 1979-1 at estuary (Dawe et al. 1994); Qualicum Beach 12 Apr 1976-14; Squamish 14 Apr 1963-12; McLean Point (Kyuquot) 23 Apr 1972-20; Sedman Creek 23 May 1991-1 at

estuary (Dawe 1991); Kitlope Lake 3 to 10 May 1991-62, 21 at estuary, 21 at lower Kitlope, 10 at Lake, 10 at Gardner; Mayer Lake 18 May 1991-1 (Dawe 1991); Kitimat 25 Apr 1980-15; Tergroup 11 Apr 1966-1, first arrival (Crowell and Nehls 1966b); Hazelton 16 May 1992-10. Interior – *D. c. auduboni*: Osoyoos Lake 2 May 1974-12; Whipsaw Creek Ecological Reserve (w Princeton) 30 Apr 1974-12; Princeton 6 May 1979-15, 11 May 1975-500, migration through poplar groves; 5 km w Bromley 24 Apr 1971-20; Bromley 30 Apr 1974-30; White Lake 26 May 1975-10; Castlegar 15 May 1976-2 eggs; Robson 21 Apr 1969-6; Kinnaird Park 5 Apr 1971-2; Okanagan Landing 31 Mar 1942-1, first of year, 8 Apr 1927-10, first of year; Dorothy Lake 2 May 1981-4; McQueen Lake 8 May 1973-2 eggs, 11 May 1973-3 nestlings; Adam’s River 30 Mar 1997-1; Celistra 21 Apr 1948-10, arrival, travelling with “Myrtle” subspecies; Loon Lake (Clinton) 26 May 1963-3 eggs; Leancoil 15 May 1972-8; North Barriere Lake 7 Apr 1974-10; Tatton Lake 5 May 1942-30 (Munro 1945a); lower Blaeberry River valley 14 Apr 1996-1 male; Lac la Hache 4 Apr 1944-1 (Munro 1945a); Williams Lake 8 Apr 1985-1, arrival; Westwick Lakes 6 May 1955-20; Pelican Lake 25 May 1948-15; Chezacut 2 May 1943-50, 8 May 1943-100, 14 May 1943-10; Prince George 11 Apr 1985-10, second wave came through on 3 May, very few

this year, 7 May 1975-20; nr Tabor Creek 4 May 1985-18; Willow River 12 Apr 1985-1, common summer resident; Quick 19 Apr 1981-8 to 10 birds; Mackenzie 17 Apr 1996-1; Chichouenyli Creek 4 May 1997-47; Mugaha Creek 26 Apr 1997-3, 27 Apr 1996-34, 5 May 1996-26; Hudson's Hope 27 Apr 1980-1, 30 Apr 1987-1. *D. c. coronata*: Anarchist Mountain 31 May 1951-1; Princeton 7 May 1979-14; Castlegar 24 Apr 1969-1; Tunkwa Lake 12 May 1968-10; Enderby 14 Apr 1952-1 (UBC 8001); Scotch Creek 16 May 1970-4; Celista 21 Apr 1948-7; Revelstoke 20 Apr 1982-1, arrival; lower Blaeberry River valley 10 May 1996-1 male and 1 female; Kootenay National Park 19 May 1983-30; Riske Creek 18 to 30 Apr 1984-7; Lac la Hache 8 May 1943-12 (Munro 1945a); Williams Lake 12 May 1984-10; Wells Gray Park 14 May 1962-10 (Edwards and Ritcey 1967); Prince George 5 May 1985-2; Francois Lake 26 Apr 1977-1; Ellis Island 23 May 1978-7; Willow River 22 Apr 1980-1, 18 to 20 May 1968-1; Quick 30 Apr 1978-2; Tupper Creek 26 May 1938-1, carrying nest material (Cowan 1939); Tetana Lake 27 Apr 1938-1 (Stanwell-Fletcher and Stanwell-Fletcher 1943); Hudson's Hope 24 Apr 1983-1; Bear Flat to Hudson's Hope 26 Apr 1986-20, all males; Moberly River 10 May 1986-150; e Farrell Creek 11 May 1985-100, large flocks; nr Attachie 21 Apr 1984-1, 20 May 1984-70; Taylor 15 May 1983-8; Bear Flat 4 May 1985-18; Charlie Lake 17 May 1986-20; Beaton Park 3 May 1986-8, 16 May 1986-43, mostly males, 22 May 1986-79; Cecil Lake 24 Apr 1983-2, first spring arrivals; North Pine 6 May 1985-23; Cold Fish Lake 27 May 1976-3; Prophet River Park 13 May 1982-1; Fort Nelson 28 Apr 1974-first noted (Erskine and Davidson 1976); Liard Hot Springs 30 Apr 1975-40 (Reid 1975); Chilkat Pass 14 to 16 May 1977-35 birds a day; Atlin 21 Apr 1934-1 (CAS 42135), 18 May 1977-8. *Undetermined subspecies*: Manning Park 15 Apr 1977-100; nr Oliver 4 Apr 1986-17, 5 Apr 1986-97, 6 Apr 1988-34, at banding station; nr Rosebud Lake 26 Apr 1981-20; Princeton 19 May 1963-112, in flock moving through area; Similkameen River 20 May 1963-450, 1 flock; Osprey Lake (Princeton) 7 May 1979-1,500, both *auduboni* and *coronata* groups, migrating through in large flocks, 7 May 1979-1,200, another huge flock flying through area; Wolfe Lake 3 May 1975-40; Green Lake (Okanagan Falls) 11 Apr 1985-20; Summerland 25 Apr 1947-100; Merritt 11 Apr 1976-340; Kelowna 12 Apr 1974-200; Nakusp 15 Apr 1981-10; s Kamloops 5 May 1984-1,000+, grounded by storm along Highway 5A; Bridge River valley 20 May 1986-500, in tributary watersheds, heavy migratory movement; Celista 23 Apr 1948-62; Revelstoke 27 Mar

1986-1; Kootenay National Park 26 May 1981-2 nestlings, 16 May 1983-25; Glacier National Park 3 May 1982-30, 7 May 1982-25, 14 May 1982-50, 19 May 1982-30; Yoho National Park 4 May 1977-40, grounded in storm; Ottertail River valley 4 May 1977-30, in flock with 8 Orange-crowned Warblers; Yoho National Park 29 May 1979-24; Wapta Lake 28 May 1977-25; Soda Lake 27 Apr 1981-30; 100 Mile House 24 Apr 1962-35; Horse Lake 6 Apr 1976-12; West Lake (Riske Creek) 10 May 1978-42, migrating; nr Riske Creek 10 May 1987-eggs, 1.6 km e Wineglass Ranch; Lac la Hache 30 Apr 1942-250, male:female ratio 10:1 (Munro 1945a); Williams Lake 30 Mar 1979-1, 11 to 19 Apr 1959-40, males suddenly arrived, 20 to 26 Apr 1964-100, flocks feeding in shrub border of lake; Quesnel 6 May 1979-13; Telkwa 7 May 1976-200, 23 May 1994-4 eggs, female near nest; Tumbler Ridge 11 May 1995-20, 25-27 May 1997-20 to 30 at sewage lagoons; Hyland Post 27 May 1976-11; nr Fort Nelson 21 May 1979-12, pond at Mile 17.4 on Clarke Lake Road; Atlin 16 May 1981-19 (Campbell 1981).

Summer: Coastal – *D. c. auduboni*: Jordan River 6 Jul 1976-2; Victoria 29 Jul 1939-nestlings; Reifel Island 4 Aug 1972-20; Aldergrove 23 Aug 1967-14; Maplewood 10 Jul 1981-10, post-breeding wanderers?; Alouette Lake 28 Jul 1963-1; Hope 28 Jul 1990-3 fledglings; Skagit River valley 13 Jul 1982-1; Campbell River 6 Jun 1980-33; Alta Lake 4 Aug to 2 Sep 1941-10 daily; Port Neville 5 Jun 1975-1; Sointula 26 Jul 1976-1 fledgling being fed by adults; Kitimat 24 Aug 1975-2; Lakelse Lake 30 Jun 1974-3, 17 Aug 1977-15, at Park; Nass River (w New Aiyansh) 22 Aug 1977-1. *D. c. coronata*: Alta Lake 6 Jul 1946-1, very common in migration; Terrace 2 Aug 1987-1; New Hazelton 28 Aug 1917-1 (NMC 10967). *Undetermined subspecies*: Parksville 23 Jun 1961-eggs, 4 Jul 1961-nestlings, 6 Jul 1961-nestlings; Mitlenatch Island 12 Jul 1964-2 nestlings; Mayer Lake 8 Aug 1985-1; Lakelse Lake 10 Jul 1974-13; Terrace 15 Jul 1989-5 fledglings. Interior – *D. c. auduboni*: Manning Park 12 Jun 1975-106, 6 Aug 1962-3 nestlings being fed by adults; Lightning Lake 26 Aug 1973-40; Manning Park 15 Jul 1968-eggs; Creston 30 Jul 1980-2 nestlings, within 2 or 3 days of fledging; Bull River 13 Jun 1960-4 young, fledged when nest checked; Brookmere 19 Jun 1974-22; Wasa Park 24 and 25 Aug 1971-25 (Dawe 1971); Sorrento 12 Aug 1972-20; Beaverfoot River 31 Aug 1975-100 moving s; Glacier National Park 18 to 21 Jun 1982-17; Lake O'Hara 23 Aug 1975-50; 100 Mile House 10 Jun 1976-3 nestlings; w Riske Creek 15 Jul 1971-3 young; Dog Creek (Alkali Lake [Cariboo]) 13 Jun 1959-

5 eggs, incubation started; Anahim Lake 25 Jun 1961-8; Glathelli Lake 10 Aug 1975-6; Prince George 27 Aug 1984-25 with robins and juncos; Cluculz Lake 13 Jun 1970-2 eggs; Pinkut Creek to Burns Lake 11 Jun 1975-19; Summit Lake (Prince George) 3 Jun 1947-nestlings, 30 Jun 1944-nestlings; Adoogacho Creek 15 Jul 1975-1; Chilkat Pass 26 Aug 1974-1. *D. c. coronata*: Windy Joe Mountain 10 Jul 1966-1, at beaver pond; Osoyoos Lake 23 Jun 1957-2; Edgewood 18 Jun 1922-nest collected; Wasa Park 25 Aug 1971-2, only 2 seen in park (Dawe 1971); Nakusp 2 May 1993-1; Celista 3 Aug 1960-2; Scotch Creek 14 Aug 1963-6; Kootenay National Park 4 Jun 1983-1; Succour Summit 1 Jun 1996-1 male; Stum Lake 19 Jul 1971-1 nestling, 27 Jul 1973-4 nestlings (Ryder 1973); Bowron Lake Park 3 Jul 1971-1 (Runyan 1971); Prince George 31 Jul 1982-1, 5 Aug 1982-1; Pine Pass 6 Jun 1976-1, at rest area; 19 km n Tupper Creek 23 Jun 1939-adults feeding young recently out of nest (Cowan 1939); Beryl Prairie 8 Jul 1979-1; Taylor 5 Jun 1982-pair nearly completed nest, 18 Jul 1982-1 fledgling being fed; Beaton Park 12 Jul 1983-11, 2 pairs feeding cowbirds, 12 Aug 1986-42, 14 Aug 1986-25, 27 Aug 1982-40; Charlie Lake 24 Aug 1979-18; North Pine 22 Aug 1984-15; Stoddart Creek (Fort St. John) 30 Aug 1985-30; St. John Creek 31 Aug 1985-29; Spatsizi River 15 Jul 1977-1; Buckinghorse Park 18 Jul 1987-male with fledgling; Tatlatui Lake 14, 15, and 21 Jun 1986-1; Eddontenajon Lake 8 Jun 1976-2; Parker Lake 8 Jul 1978-1; Fort Nelson 12 Jun 1982-10, most common warbler in area at this time; 39 km s and 4 km w Joe Irwin Lake 13 Jun 1988-2, several others singing but not seen; n Boya Lake Park 12 Jul 1978-female with 2 recently fledged young; Lower Liard Crossing 22 Aug 1943-10 (Rand 1944); Atlin 15 Jun 1926-5 eggs, 2 Jul 1980-3, 23 Aug 1934-1 (CAS 42142); Surprise Lake 7 Jun 1975-4. *Undetermined subspecies*: Manning Park 6 Aug 1962-adults feeding 3 nestlings; Ashnola River near Keremeos 28 Jul 1968-4 nestlings; Trail 3 Aug 1982-1 nestling; East Trail 20 Aug 1978-25; Waneta Junction 23 Aug 1980-30; Apex Mountain (Penticton) 12 Aug 1978-50 to 75 birds; Barrett Creek 16 Jun 1984-14; Chute Lake 20 Jul 1975-2 fledglings; Kelowna 18 Aug 1973-50; Wilmer 18 Aug 1977-20; Mount Tom (Gang Ranch) 23 Jul 1993-15, all young of the year; Crowfoot Mountain 24 Aug 1996-100, everywhere through subalpine meadows; Emerald Lake 5 Jun 1976-30 (Wade 1977); Williams Lake 16 Aug 1959-100, stayed to 30 Aug; Nimpo Lake 13 Jul 1971-2 nestlings; Tweedsmuir Park 14 Aug 1982-30, in the Rainbow Range; Prince George 11 Jun 1969-16, 30 Jun 1991-both adults feeding young,

Yellow-rumped Warbler

10 Jul 1981-3 fledglings; Fort St. James 1 Jun 1889-4 eggs, 14 Jun 1889-1 egg (MacFarlane and Mair 1908); Summit Lake (Prince George) 25 Jul 1944-adults feeding nestlings; sw Dawson Creek 8 Jun 1993-2 eggs plus 1 Brown-headed Cowbird egg, 17 Jun 1994-2 newly hatched nestlings, 24 Jun 1994-5 eggs, female flushed (Phinney 1998); Beatton Park 23 Jun 1985-6; Charlie Lake 20 Aug 1976-15, migrants, 29 Aug 1978-30; Mason Lake 28 Aug 1982-10; Kinaskan Lake 27 Aug 1979-10; Gladys Lake 22 Jul 1976-10; Fern Lake 13 Aug 1983-10, 18 Aug 1983-20, several groups 4-6 each (Cooper and Cooper 1983); 8 km n Mile 304 Alaska Highway 13 Aug 1985-10; 1.5 km e Fort Nelson 28 Jul 1986-2 recently fledged young; Haines Highway 4 Jun 1983-38, an adult female carrying food, probably for young; Towagh Creek 7 Jun 1983-38; Helmut (Kwokullie Lake) 8 Jun 1982-female building nest; Atlin region 28 Jun 1924-newly hatched nestlings (Swarth 1926); s Lower Post 23 Jun 1983-4 nestlings, when checked all left nest, 24 Jun 1983-5 eggs.

Breeding Bird Surveys: Coastal – Recorded from 23 of 27 routes and on 65% of all surveys. Maxima: Campbell River 30 Jun 1984-40; Alberni 21 Jun 1974-36; Kispiox 20 Jun 1993-35. Interior – Recorded from 71 of 73 routes and on 94% of all surveys. Maxima: Christian Valley 26 Jun 1993-73; Adams Lake 28 Jun 1989-59; Ferndale 30 Jun 1990-57.

Autumn: Interior – *D. c. auduboni*: Liard Hot Springs Park 6 Sep 1974-7 in a flock of 45 mixed warblers; Willow River 21 Sep 1964-20; Williams Lake 13 Sep 1982-12, 3 and 4 Oct 1982-12, 18 Oct 1980-1; Canim Lake 5 Sep 1960-18; Bridge Lake 7 Sep 1960-45; Revelstoke 24 Sep 1981-20, 7 Oct 1984-2; Shuswap Lake 6 Sep 1959-50; Okanagan Landing 5 Sep 1929-100, 24 Oct 1944-1, last of year, 8 Nov 1927-1; Monk Park 2 Sep 1995-150+, 7 Sep 1971-45; Kinnaird Park 7 Oct 1969-2, 17 Oct 1969-2, 5 Nov 1969-2; Glade 15 Sep 1968; Vaseux Lake area 1 Sep 1973-14; Osoyoos 10 Oct 1975-4; Richter Pass 21 Sep 1968-19 along Kilpoola Lake Rd; Oliver 10 Sep 1960-80; Manning Park 26 Sep 1970-2. *D. c. coronata*: Atlin 14 Sep 1972-50, 5 Oct 1931-1 last seen (Swarth 1936); Warm Bay Hot Springs 16 Sep 1972-3; Charlie Lake Park 3 Oct 1982-4, last record for autumn; Fort St. John 5 Oct 1986-1, last record for autumn; St. John Creek 12 Sep 1986-45; Stoddart Creek (Fort St. John) 6 Sep 1986-69, highest count for single locality this autumn; Bear Flat 8 Sep 1986-42; Fort St. John 6 Sep 1986-33, 23 Sep 1984-2, 5 Oct 1986-1; Smithers 12 Nov 1985-1; Barkerville 16 Sep 1962-2; Field 9 Oct 1976-2, first 2 weeks of

Sep heaviest movement, waves through the area 19 to 24 Sep; Nicholson 15 Sep 1975-1; Enderby 5 Nov 1941-1 (UBC 8003); Nakusp 22 Nov 1986-1; Vernon 3 Oct 1965-3. *Undetermined subspecies*: Atlin 19 Sep 1924-1, last seen (Swarth 1926); Fort Nelson 16 Sep 1986-90 (McEwen and Johnston 1987a); Andy Bailey Lake 22 Sep 1986-3; Williams Lake 14 Oct 1986-40, flocks moving through, 19 Nov 1973-1; Riske Creek 5 Sep 1978-30; Lac la Hache 8 Sep 1942-50 (Munro 1945a); Farwell Canyon 25 Sep 1981-30; Fletcher Lake 22 Sep 1982-50, conspicuous movement; Horse Lake (100 Mile House) 21 Oct 1984-2; lower Blaeberry River valley 18 Sep 1995-111, highest daily autumn migration count, 16 Sep 1997-84+, second highest daily autumn migration count; Golden 25 Oct 1975-1, late sighting; Vernon 28 Nov 1991-1 (Siddle 1992a); Okanagan Lake 3 Oct 1973-55, mainly young of the year; Penticton 21 Sep 1977-50; Vaseux Lake 1 Oct 1975-40; West Bench 7 Oct 1975-6; Columbia Gardens (Trail) 11 Sep 1984-40; Pend-d'Oreille River valley 30 Sep 1982-50; Erie Lake 23 Sep 1978-30; East Trail 12 Sep 1984-50; Oliver 7 Sep 1964-133, on Camp McKinney Rd; Glacier Lake (Cathedral Park) 1 Sep 1980-250; Bridesville 22 Sep 1996-11 dead on highway. Coastal – *D. c. auduboni*: Port Neville 10 Sep 1975-8; Egmont 5 Sep 1977-2; Strawberry Island 26 Nov 1972-1; Ross Lake 30 Sep 1971-15; Aldergrove 6 Sep 1967-26; Burnaby Flats 16 Nov 1974-67; Ladner 27 Sep 1981-40, at Harbour Park; Yellowpoint 30 Sep 1987-27, in flock; Cowichan Bay estuary 7 Oct 1987-60; Pachena Point 13 and 15 Nov 1974-1 (Hatler et al. 1978); Island View Beach 15 Sep 1980-53; Saanich 13 Sep 1985-55, just s McIntyre Reservoir; Port Renfrew 5 Oct 1974-35; Victoria 9 Sep 1985-15; Beacon Hill Park 21 Sep 1984-60, 25 Sep 1973-200, 29 Sep 1973-80, 3 Oct 1966-150, 7 Oct 1973-100, 10 Oct 1975-300, 21 Oct 1980-45. *D. c. coronata*: Kitimat 26 Sep 1974-1, at Alcan Smelter site; Cape St. James 26 Sep 1977-3, 16 Oct 1978-3, 29 Oct 1978-1; Quatsino 7 Oct 1935-1; Burnaby Flats 16 Nov 1974-3; Reifel Island 30 Sep 1974-10; Tofino 14 Nov 1982-1; Stubbs Island 1 Nov 1982-10; Long Beach 29 Sep 1984-10, first seen this month, 29 Oct 1982-1; Central Saanich 13 Sep 1985-44, s McIntyre Reservoir, 20 Oct 1986-15; Victoria 3-4 Nov 1983-3; Beacon Hill Park 3 Oct 1966-20 (Crowell and Nehls 1967a). *Undetermined subspecies*: Kitimat River 17 Sep 1974-25, below bridge; Swanson Bay 5 Oct 1935-1 (MCZ 284249); Sandspit 5 Nov 1986-2; Baronet Passage 5 Sep 1986-15; Campbell River 1 Oct 1983-4 (Dawe et al. 1995a); Alta Lake 1 Sep 1941-10; Garibaldi Lake 17 Sep 1982-20, most immature; Baynes Sound nr Courtenay 19 Sep 1981-28 (Dawe et al.

1998); Rolly Lake 30 Nov 1974-6; Debouville Slough 19 Sep 1982-120; North Vancouver 26 Sep 1974-150, at Cates Park; West Vancouver 9 Sep 1977-50, at Whitecliff Park; Burnaby Lake 18 Sep 1983-80; Reifel Island 7 Sep 1983-19, 19 Sep 1971-100, maximum fall numbers, 23 Sep 1983-100, 5 Oct 1983-65; Stubbs Island 14 Oct 1983-30; Beacon Hill Park 6 Oct 1981-100, 14 Oct 1975-150, mostly immatures, 30 Oct 1974-150, mostly immatures; Swan Lake (Saanich) 22 Sep 1985-70; Rocky Point 2 Sep 1995-34, 29 Sep 1995-380, 1 Oct 1995-162; Witty's Lagoon 20 Sep 1958-100, migratory flock.

Winter: Interior – *D. c. auduboni*: Riske Creek 14 Dec 1983-1, at feeder since 19 Oct, last day seen at Wineglass Ranch; Windermere 11 Dec 1982-1, into feeder every day to 7 Jan; Kelowna 31 Dec 1992-1 (Siddle 1992b); Nelson 15 Dec 1993-4 with 1 "Myrtle" subspecies in apple tree, 15 Jan 1994-1; Creston 8 Dec 1993-1. *D. c. coronata*: Nelson 15 Dec 1993-1 with 4 "Audubon's" subspecies in apple tree. *Undetermined subspecies*: Revelstoke 4 Feb 1993-1 (Siddle 1993b); Tranquille 1 Jan to 13 Feb 1994-1 surviving without bird feeders; Vernon 6 Feb 1994-1 (Siddle 1994b); Nakusp 10 Jan 1993-1 (Siddle 1993b), 7 Feb 1994-1 (Siddle 1994b); Creston Dec 1989-5 (Siddle 1990a). Coastal – *D. c. auduboni*: Pitt Meadows North 13 Jan 1973-10; Iona Island 11 Jan 1981-12; Westham Island 23 Dec 1972-15; Swan Lake (Saanich) 8 Dec 1986-10. *D. c. coronata*: Masset 3 Jan 1942-1 (Munro and Cowan 1947); Pitt Lake 13 Feb 1984-4; Ambleside Park (West Vancouver) 5 Jan 1975-1, 26 Dec 1974-1 adult male; Stubbs Island 27 Feb 1983-20, 26 Dec 1982-20; Cowichan Bay 23 Dec 1978-2; Saanich 5 Dec 1981-4. *Undetermined subspecies*: Queen Charlotte City 20 Feb 1993-1 (Siddle 1993b); Agassiz 31 Dec 1974-6; Stubbs Island 14 Jan 1983-15, 4 Feb 1983-21, 3 Dec 1987-30 among California waxmyrtle; Reifel Island 1 Jan 1970-4; Duncan 1 Jan 1980-26, near sewage lagoons; Swan Lake (Saanich) 16 Jan 1983-35, 23 Jan 1983-150, 22 Feb 1983-25, 6 Dec 1986-15, 16 Dec 1980-25.

Christmas Bird Counts: Interior – Recorded from 8 of 27 localities and on 5% of all counts. Maxima: Vernon 17 Dec 1989-2; Nakusp 2 Jan 1994-1; Lake Windermere 27 Dec 1981-1; Oliver-Osoyoos 28 Dec 1981-1; Penticton 27 Dec 1983-1; Revelstoke 18 Dec 1993-1; Shuswap Lake Park 21 Dec 1991-1; Vaseux Lake 2 Jan 1994-1. Coastal – Recorded from 18 of 33 localities and on 27% of all counts. Maxima: Vancouver 17 Dec 1978-90, all-time Canadian high count (Anderson 1979); Ladner 27 Dec 1992-39; Duncan 15 Dec 1990-34.