

WILDLIFE DATA CENTRE

FEATURED SPECIES - COMMON NIGHTHAWK

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When the warm and sunny days of June appear, one of the latest migrants to reach British Columbia has just completed a journey of over 11,000 km from its winter home in Argentina. The Common Nighthawk's (*Chordeiles minor*) name is a misnomer – it really isn't a hawk and it usually doesn't hunt at night. Rather, it is most active at dusk and dawn when it “hawks” for insects in an erratic flight that is bat-like – hence one popular name “*Bullbat*”. And despite this name, the only time it is really common, except for some specific sites, is when it gathers in large flocks in late summer to feed on swarms of flying insects. From afar the Common Nighthawk's white wing patches look like holes against the sky making the bird easy to identify. When it comes to rest on branches, it settles down along its perch, rather than across it like most birds, using its cryptic plumage as camouflage (Figure 1).

Over the 118 years of record keeping in British Columbia, the Common Nighthawk has increased its length of stay each summer, arriving earlier and departing later. On average, the species spends about 93 days in the province and over 70% of the rest of its life elsewhere and getting to and from its summer home. While on its breeding grounds, and away from incubating duties, this insect-eating bird spends much of the day roosting on the ground or in trees, where its mottled and barred brown and grey plumage make it almost impossible to detect. The best time to look for them is on pleasant summer evenings while driving along backroads where roosting birds are flushed or



Figure 1. Most tree-roosting Common Nighthawks perch lengthwise on a branch, such as this ponderosa pine limb, trying to blend in with its surroundings. Juniper Beach Park, 28 June 2004 (R. Wayne Campbell).

near water, where their aerial displays, spectacular feeding flights, and nasal calls demand attention. In the southern interior, however, nighthawks roosting on roads can be confused with the Common Poorwill (*Phalaenoptilus nuttallii*).

Wildlife Data Centre Provincial Status Designation

The Common Nighthawk is *A Species of Conservation Concern* in British Columbia. The diversity of habitats it frequents for foraging and breeding rivals that of any bird in British Columbia. There is, however, concern about declines in numbers locally at traditional foraging and breeding locations, especially across southern parts of the province in urban environments. This may represent

a general population shift northward or may be attributed to threats the species encounters while on its winter grounds in South America. In cities in British Columbia, urbanization, the loss of suitable gravel roof-nesting habitat, decline in flying insect populations, and competition with other roof-nesting species, like the Glaucous-winged Gull (*Larus glaucescens*) and urban predators like Common Raven (*Corvus corax*) and Northwestern Crow (*Corvus caurinus*) on the south coast, may also be responsible for local urban declines.

At a Glance

Other names: Mosquito Hawk, Boomer, Bullbat, ThunderBird, and Burnt-land Bird.

Similar species: In British Columbia, the Common Poorwill.

Breeding male (Figure 2)

- white throat
- large white wing patch
- white terminal tail band
- narrow ventral barring

Breeding female (Figure 3)

- cream buff throat
- mottled wing patch
- no white on tail tip; in southern Saskatchewan older females have shown a small white throat patch and a thin terminal tail band
- wide ventral barring

In flight (Figure 4)

- long, pointed wings
- light wing patch
- square tail at tip
- flies like a big swift

Length

22 to 24 cm (8.7 to 9.4 in)

Wingspan

20 cm (7.9 in)

Weight

65 to 98 g (2.3 to 3.4 oz)



Figure 2. Adult male Common Nighthawk showing the pure white throat and white wing patch while at a roost site on a juniper limb. Juniper Beach Park, BC. 3 June 1999 (R. Wayne Campbell).



Figure 3. The cream buff throat is a good field mark of the female Common Nighthawk. Juveniles, however, also have buffy throats and sometimes females look like males. Confluence of Muskeg Creek at Tsitika River, BC. 2 July 2002 (Michael I. Preston).

Where and When

World Range

The Common Nighthawk breeds from southern Yukon, southern Mackenzie, northern Saskatchewan, Manitoba and Ontario, central Quebec, southern Labrador, New Brunswick, Prince Edward Island, and Nova Scotia south throughout North America to central and western California, south-central Nevada, southeastern Arizona, southern Texas and southern Florida. In Middle America, it breeds in the interior south through central Guatemala to western Honduras and Belize. It winters in South America.

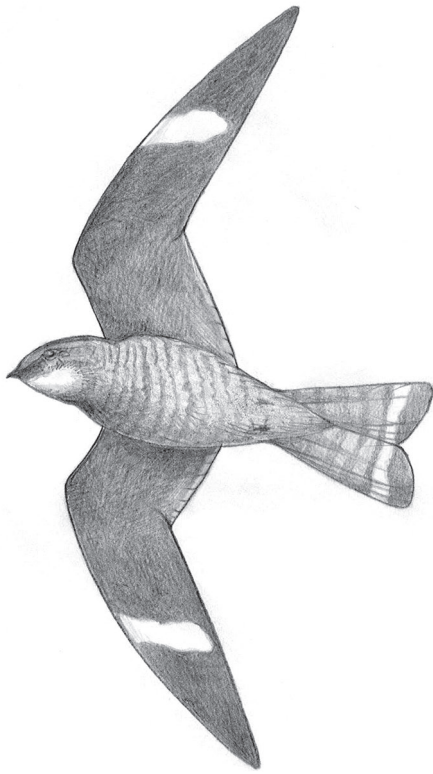


Figure 4. Common Nighthawk showing diagnostic features in flight of long pointed wings and white wing patches. Drawing by Mark Nyhof.

British Columbia

Current Status: Populations decreasing locally along southeastern Vancouver Island and parts of southern mainland British Columbia. Trends in central and northern parts of the province are poorly known but declines have occurred locally (see Table 4 on page 54).

Occurrence: The Common Nighthawk is distributed widely throughout most of British Columbia (Figure 5). The species becomes less common, and more local, northward through the interior. Numbers also decrease as elevation increases. On the south coast, it is an uncommon to common migrant, summer resident, and breeder, including Vancouver Island and the adjacent mainland. Along

the central and northern mainland coast, it is rare and most often recorded at the head of long inlets. Small, local populations are, however, present in towns like Prince Rupert and Kitimat. There are three records of vagrants for the Queen Charlotte Islands. In the interior, it is an uncommon to common migrant, summer resident, and breeder.

Breeding: On the coast, the Common Nighthawk breeds only throughout Vancouver Island, the Gulf Islands, the adjacent mainland coast north to Powell River, and throughout the lower Fraser River valley to Hope (Figure 6). It is distributed widely, in suitable habitats, throughout the interior, where the centre of breeding abundance occurs in the Okanagan valley (Figure 6).

Habitat

Migration, foraging, and roosting: The Common Nighthawk can be found in almost any open or semi-open habitat where flying insects are common. In British Columbia, such habitats include cultivated fields, rangeland, farmlands, marshes, sloughs, large ponds, marine and fresh water beaches, lakes, slow-moving rivers, mixed forests (especially ponderosa pine, *Pinus ponderosa* and Douglas-fir, *Pseudotsuga menziesii*), estuaries, confluence of rivers and large creeks, rock outcrops, urban and residential areas, school playing fields, canyons, sewage lagoons, airports, golf courses, landfills, gravel and dirt roads, reclaimed mine sites, clearcuts (Figure 7), logging slash-burns, sand dunes, lava cliffs, transmission corridors, subalpine, and alpine. These habitats may occur from sea level to at least 2,067 m (6,776 ft) elevation.

Typically the nighthawk roosts singly, or occasionally in groups of 50 or more individuals, usually in open areas. Almost any site can be used, including the ground, tree limbs (Figure 8), fence posts, beach logs, farm buildings including silos, trees, rocks and rock outcroppings, farm machinery, transmission towers, flat roofs of urban and residential buildings, brush piles, flat-topped poles, and even clothes lines. Known communal roost sites all include small, open stands of living and dead ponderosa pines near water, usually a river. The latter roosts are comprised almost exclusively of males.

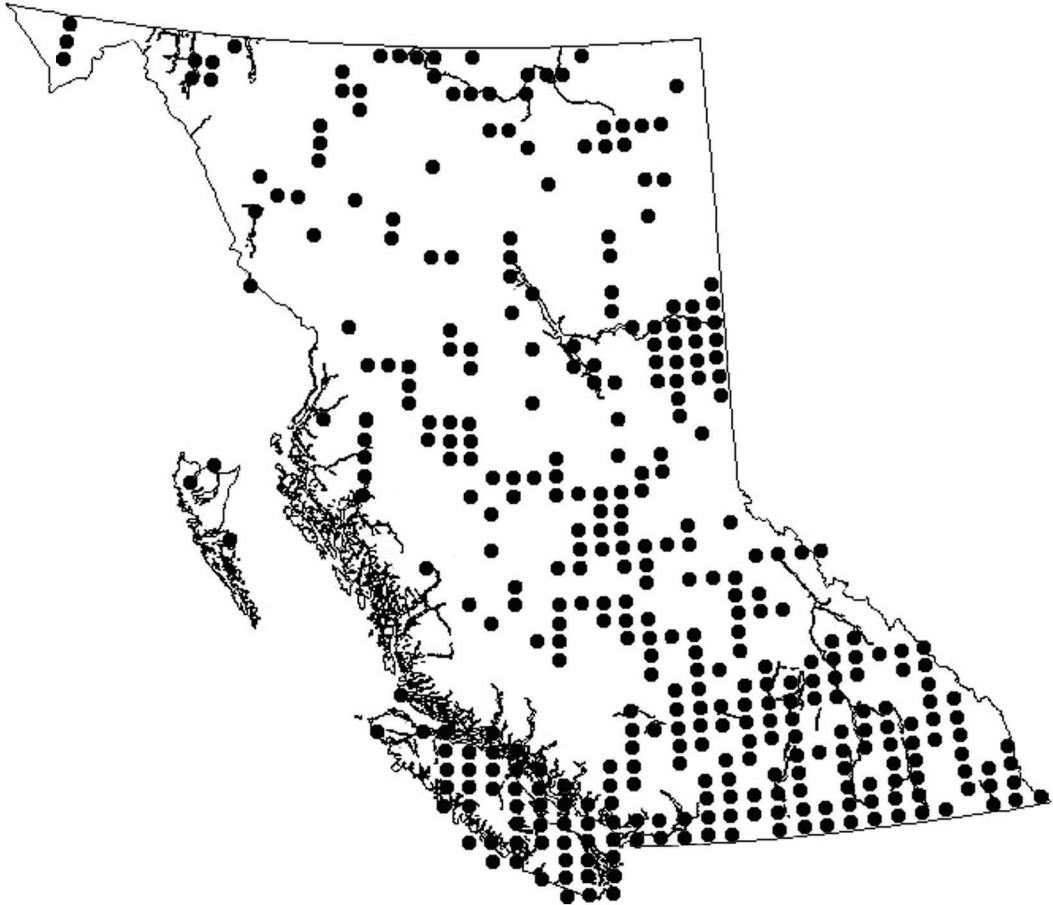


Figure 5. Locations (dots) of confirmed Common Nighthawk occurrences in British Columbia, 1889-2006.

Breeding: There is overlap between nesting and nonbreeding habitats as foraging areas are usually close to actual nest sites. Nest sites, however, require a substrate that will allow the female to remain well camouflaged as incubation and brooding takes place on the ground. The Common Nighthawk breeds in a very diverse array of habitats. On the coast these include marine spits (Figure 9), marine beaches, old burns, logging slashes (recent to at least 20 years old), transmission corridors, clearcuts, nurseries, seedling plantations, sand dunes, industrial lots, urban buildings, old gravel pits, backcountry gravel and dirt roads, log-sorting grounds, sewage ponds,

deactivated and active logging roads, river dykes, cultivated fields, rocky outcroppings, arbutus (*Arbutus menziesii*) and Garry oak (*Quercus garryana*) balds, *Sphagnum* bogs, and gravel bars.

In the southern interior, most nest records are from open, mixed and pure forested habitats and sagebrush grasslands on hillsides. Open ponderosa pine (*Pinus ponderosa*; Figure 10) and ponderosa pine-Douglas-fir (*Pseudotsuga menziesii*) forests with an understory of grasses, forbs and patches of bare soil are preferred habitats, especially in the Okanagan valley and East Kootenay regions. Other nesting habitats include open lodgepole pine (*Pinus*

contorta) forests, open trembling aspen (*Populus tremuloides*) forests, open shrublands, grassy hillsides with patches of bare soil and parts of dead trees (Figure 11), abandoned and active sawmill yards, grasslands, glacial outwashes, rock outcroppings and knolls, abandoned construction sites, reclaimed mine sites, gravel pits, military bases, old logging roads, sewage ponds, lakeshores, clearcuts (see Figure 7), beaches, meadows, pastures, rock islets, logging clearcuts, open woodlots, cleared campsites,



Figure 6. Breeding distribution (black area) of the Common Nighthawk in British Columbia.



Figure 7. The Common Nighthawk frequents a wide variety of natural and human-influenced habitats, including regenerating clearcuts, while visiting the province each year. Grizzly Lake, BC. 14 June 1997. (R. Wayne Campbell).

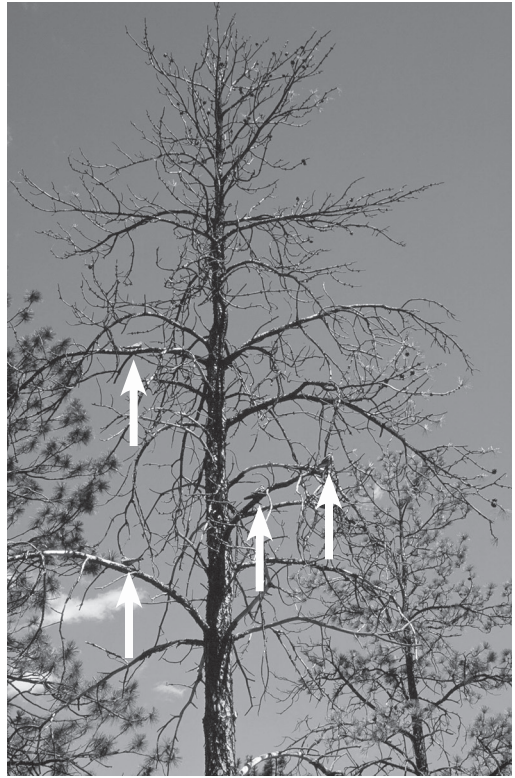


Figure 8. Four male Common Nighthawks (indicated by arrows) roosting on the limbs of a dead ponderosa pine. Juniper Beach Park, BC. 5 July 2002 (R. Wayne Campbell).

benchlands, gravel bars, cultivated fields, *Sphagnum* bogs, and road edges.

Annual Occurrence

Common Nighthawks are among the latest migrants to arrive in spring and among the earliest to depart in autumn. The summer period, mid-June through mid-August, is the main residence period (Figure 12). There are no records from November through March, and only one record from 25 April 1992 in Surrey. They have been recorded from 25 April (Surrey) to 18 October (Goldstream River estuary), a total of 177 days, although in most years the visit is just over three months. The 6 May dates are from southern Vancouver Island at Whiffin



Figure 9. Along southeastern and southern Vancouver Island, the Common Nighthawk regularly nests on sandy marine spits with scattered pieces of driftwood and patches of low forbs and grasses. Cordova Spit, BC. 31 July 2004 (R. Wayne Campbell).



Figure 10. Open ponderosa pine forests with a grass understory and patches of bare ground with a generous supply of needles are frequent nest sites for the Common Nighthawk. Johnstone Creek, BC. 15 April 1999 (R. Wayne Campbell).

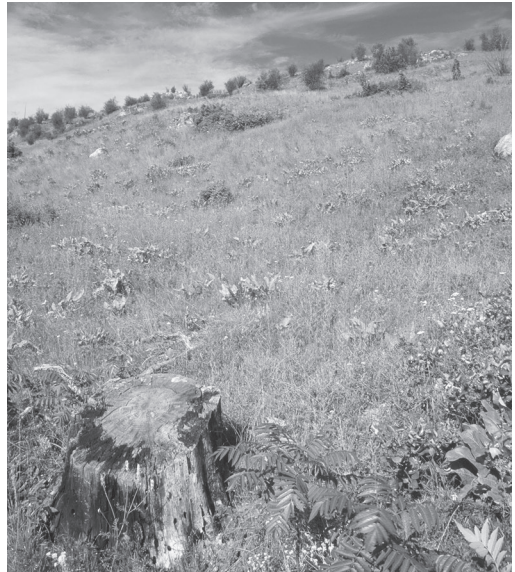


Figure 11. In the Okanagan valley Common Nighthawks have nested on this hillside near Sawmill Lake, BC, since at least 1956. 29 May 1998 (R. Wayne Campbell).

Spit, Sooke in 1978 and Courtland Flats, Saanich in 1989.

The full breeding period, from first egg to latest fledging, occurs from 25 May to 23 September (Figure 13).

Migration

The Common Nighthawk is considered a long-distance migrant arriving in British Columbia from wintering grounds assumed to be in South America. Throughout British Columbia, the species is both a migrant and summer resident arriving in spring and departing in autumn each year. Arrival and departure times vary from year to year, but the spring migration window is much shorter than in autumn.

The first nighthawks have appeared in southern British Columbia as early as late April and early May (Figure 13); however, the first small influx of migrants usually occurs in late May with most birds, on average, arriving during the first week of June (Table 1). The average arrival date for British Columbia for the entire 87-year period 1919 through

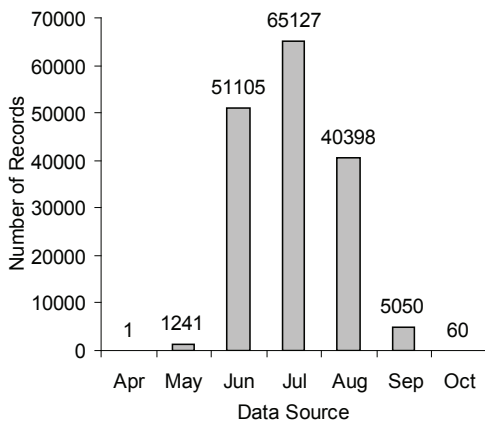


Figure 12. Total occurrence records, by month, for the Common Nighthawk in British Columbia, 1889-2006.

2005 is 6 June for the coast and 5 June for the interior.

The autumn departure, in some years, may start in early to mid-August but usually occurs during the latter half of August (Table 2). The earliest and latest dates, from localities with a long history of uninterrupted observations, are 8 August and 18 October. Throughout British Columbia most nighthawks leave the province in late August and early September (Table 2). The average departure date for British Columbia for the entire 87-year period is 5 September for the coast and 30 August for the interior.

Late Summer Aggregations

Large flocks of Common Nighthawks have been reported in British Columbia from mid-July through early September. These flocks are probably a mixture of migrants, nonbreeders, and local breeders taking advantage of a local food source. Infrequently, nighthawks associate with flocks of other insect-eating species, such as Violet-green Swallow (*Tachycineta thalassina*), Tree Swallow (*Tachycineta bicolor*), Bank Swallow (*Riparia riparia*), Barn Swallow (*Hirundo rustica*), Cliff Swallow (*Petrochelidon pyrrhonota*), Black Swift (*Cypseloides niger*), Vaux's Swift (*Chaetura vauxi*), White-throated Swift (*Aeronautes saxatalis*), Bonaparte's Gull (*Larus philadelphia*), Lewis's Woodpecker (*Melanerpes lewis*), and several species of bats. These foraging flights vary in height from near ground level, making the birds vulnerable to vehicular traffic, to neck-craning strata that require binoculars to observe the bird clearly.

On Vancouver Island flocks suddenly appear when termites are flying often over beach logs, highways, and mixed forests in late August and early September. In some cases flocks are transient and visit areas briefly or they may frequent an area for several weeks while food remains available. It is humbling how one day the nighthawk may be a rare find and the next day 500 individuals are swirling over a small area feverishly taking advantage of swarming insects.

The largest aggregations in the province have been reported consistently along eastern Vancouver Island and the Okanagan, Thompson and Nicola valleys (Figure 14). The largest flock recorded is of 500 birds, for which there are two records. The first

Figure 13. Annual occurrence and breeding chronology of the Common Nighthawk for the coast and interior of British Columbia. Thick bars: common; Thin bars: uncommon; Dots: rare.

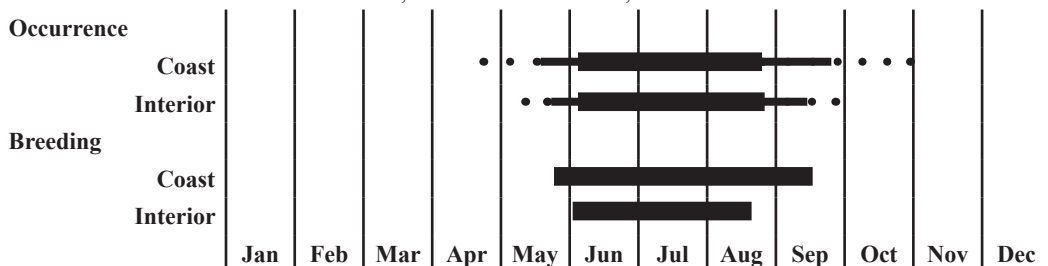


Table 1. Early, late, and average arrival dates for the Common Nighthawk in select regions of British Columbia, 1919-2005. Locations are listed from south to north for the coast and the interior. The average date was calculated by assigning numbers for a particular date from a Julian Day Table.

Location	Total Years	Spring Arrival		
		Early	Late	Average
Coast				
Victoria	53	6 May	17 Jun	5 Jun
Duncan	23	28 May	16 Jun	5 Jun
Crescent Beach	17	4 Jun	19 Jun	8 Jun
Reifel Island	19	26 May	15 Jun	6 Jun
Vancouver	39	25 Apr	19 Jun	4 Jun
Deer Lake	10	3 Jun	10 Jun	5 Jun
Burnaby Lake	14	29 May	13 Jun	5 Jun
Sechelt	17	26 May	10 Jun	1 Jun
Comox	34	26 May	10 Jun	5 Jun
Cortes Island	23	28 May	12 Jun	6 Jun
Campbell River	17	29 May	13 Jun	7 Jun
Sayward	14	28 May	14 Jun	6 Jun
Woss	13	2 Jun	13 Jun	10 Jun
Interior				
Richter Pass	15	29 May	12 Jun	4 Jun
Creston	30	25 May	20 Jun	2 Jun
Trail	44	13 May	26 Jun	8 Jun
Christina Lake	43	26 May	17 Jun	3 Jun
Keremeos	10	1 Jun	11 Jun	7 Jun
Cranbrook	16	4 Jun	13 Jun	9 Jun
Skookumchuck	16	1 Jun	11 Jun	7 Jun
Kelowna	6	30 May	10 Jun	6 Jun
Nakusp	24	24 May	18 Jun	4 Jun
Rush Lake	14	1 Jun	11 Jun	6 Jun
Douglas Lake	11	30 May	8 Jun	3 Jun
Vernon	35	25 May	11 Jun	3 Jun
Enderby	27	27 May	11 Jun	2 Jun
Kamloops	28	24 May	19 Jun	3 Jun
Clinton	19	1 Jun	13 Jun	6 Jun
Blaeberry	8	16 May	17 Jun	1 Jun
Lac La Hache	12	30 May	10 Jun	4 Jun

Spring Arrival				
Location	Total Years	Early	Late	Average
Riske Creek	23	24 May	12 Jun	4 Jun
Bechers Prairie	13	1 Jun	7 Jun	4 Jun
Quesnel	11	31 May	16 Jun	7 Jun
Prince George	17	21 May	13 Jun	8 Jun
Fraser Lake	10	31 May	15 Jun	11 Jun
Mackenzie	9	27 May	19 Jun	5 Jun
Dawson Creek	15	22 May	15 Jun	6 Jun
Fort St. John	12	25 May	8 Jun	3 Jun
Sikanni Chief	8	27 May	4 Jun	30 May
Dease Lake	9	8 Jun	14 Jun	10 Jun

Table 2. Early, late, and average departure dates for the Common Nighthawk in select regions of British Columbia, 1919-2005. Locations are listed from north to south for the coast and interior. The average date was calculated by assigning numbers for a particular date from a Julian Day Table.

Autumn Departure				
Location	Total Years	Early	Late	Average
Coast				
Sayward	14	21 Aug	28 Sep	5 Sep
Campbell River	17	30 Aug	13 Sep	6 Sep
Cortes Island	17	31 Aug	13 Sep	7 Sep
Comox	34	27 Aug	1 Oct	11 Sep
Sechelt	27	15 Aug	20 Sep	29 Aug
Vancouver	41	9 Aug	18 Oct	9 Sep
Deer Lake	10	21 Aug	9 Sep	28 Aug
Burnaby Lake	14	24 Aug	26 Sep	2 Sep
Reifel Island	10	2 Sep	17 Sep	9 Sep
Crescent Beach	17	8 Aug	17 Sep	26 Aug
Duncan	23	25 Aug	12 Sep	3 Sep
Victoria	53	21 Aug	18 Oct	14 Sep
Interior				
Dease Lake	9	19 Aug	26 Aug	22 Aug
Fort St. John	5	11 Aug	9 Sep	25 Aug
Mackenzie	11	11 Aug	17 Sep	31 Aug

Location	Total Years	Autumn Departure		
		Early	Late	Average
Fraser Lake	10	20 Aug	2 Sep	26 Aug
Prince George	17	20 Aug	12 Sep	28 Aug
Quesnel	11	16 Aug	3 Sep	25 Aug
Riske Creek	20	15 Aug	20 Sep	24 Aug
Lac La Hache	12	19 Aug	12 Sep	27 Aug
Blaeberry	8	19 Jul	26 Aug	20 Aug
Kamloops	28	17 Aug	25 Sep	2 Sep
Enderby	27	25 Aug	19 Sep	4 Sep
Douglas Lake	11	26 Aug	2 Sep	30 Aug
Rush Lake	14	19 Aug	1 Sep	25 Aug
Vernon	17	26 Aug	19 Sep	10 Sep
Nakusp	18	25 Aug	16 Sep	8 Sep
Kelowna	6	24 Aug	18 Sep	8 Sep
Skookumchuck	16	25 Aug	14 Sep	4 Sep
Cranbrook	16	26 Aug	16 Sep	9 Sep
Keremeos	10	23 Aug	5 Sep	31 Aug
Trail	20	15 Aug	17 Sep	27 Aug
Creston	30	11 Aug	21 Sep	31 Aug
Richter Pass	15	28 Aug	9 Sep	2 Sep

is from Okanagan Falls Park on 6 July 1990, and the second is from the Okanagan River near Road 22 on 16 June 1993.

On the coast, feeding flocks of more than 100 birds have been observed at Black Creek, Cassidy, Courtenay, Cowichan Bay, Duncan, Fanny Bay, Fulford Harbour, Gibsons, Ladysmith, Long Harbour, Malahat, Miracle Beach, Powell River, Puntledge River, Qualicum Beach, Sechelt, Siwash Point (Stanley Park), Somenos, and Waterloo Creek (Figure 14). In the interior flocks of more than 100 birds have been observed only in the southern half of the province at Alexis Creek, Cache Creek, Celista, Coldstream, Dale Lake, Kamloops, Kelowna, Kootenay River, Lynx Creek, Mission Creek, Nicola Lake, Okanagan Falls, Okanagan River, Oliver, Osoyoos, Pavillion Lake, Penticton, Savona, Stump Lake, Summerland, Tamarack Lake, Trail, and

Westbank (Figure 14). Aerial foraging habitats vary seasonally, and daily, and the size of flocks depends opportunistically on the number and concentration of the insects available. Habitats are diverse and include large fields, estuaries, confluence of rivers, mixed coniferous and deciduous forests, farmland, rivers, sagebrush grasslands, lakes, ridges of lava cliffs, rock bluffs, large dirt embankments, waterfalls, cities, towns, and logging clearings.

Length of Stay

The length of time nighthawks remain in British Columbia each year as summer visitors has ranged from 61 to 122 days (Table 3). On the coast, the average shortest and longest visit for 11 locations has been 72 days and 112 days respectively with an 86-year average of 93 days.

In the interior, the length of stay is generally

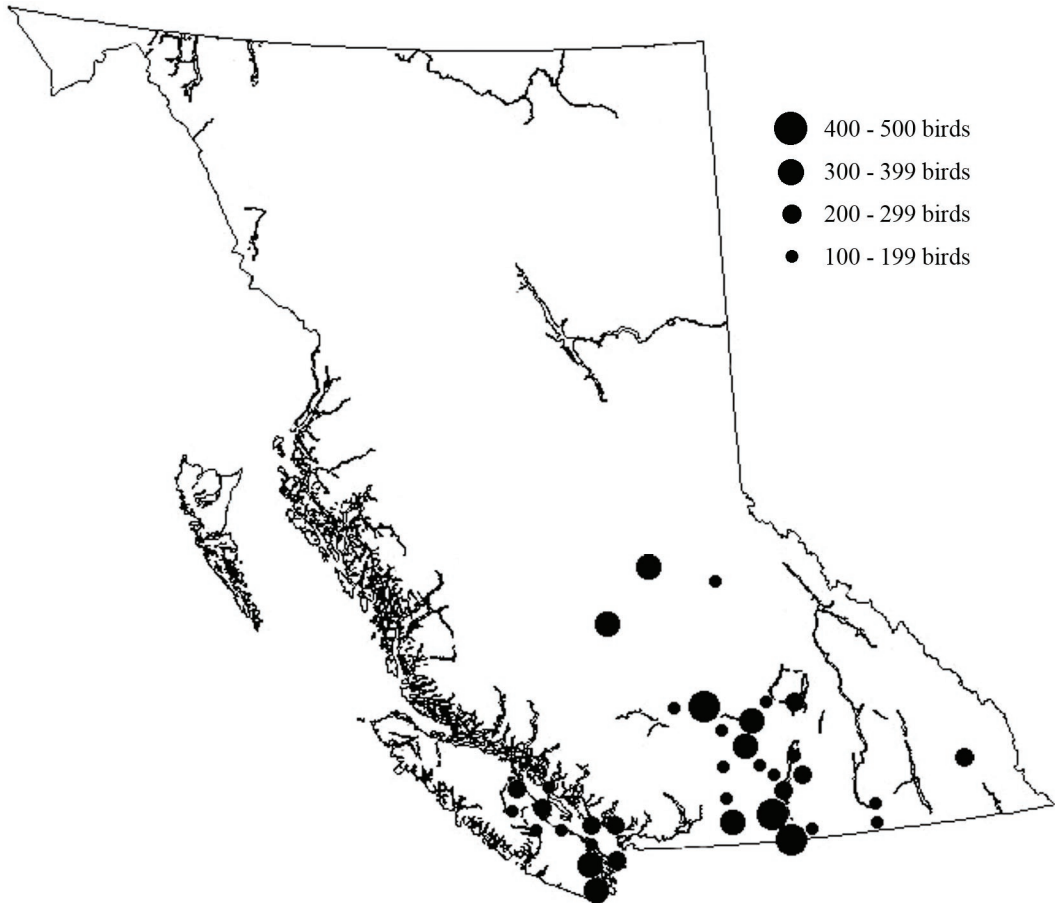


Figure 14. Location and size of late summer aggregations of the Common Nighthawk in British Columbia, 1889-2005.

shorter. The average shortest and longest summer residency for 21 locations has been 75 and 100 days respectively with an 87-year average of 86 days.

Family Life

Breeding

The Common Nighthawk is a solitary nester but during the nesting period males may roost together at favourite sites (see Figure 8). In late summer, the species is more social, with large flocks gathering locally to feed on hatches of flying insects. The

mating system is assumed to be monogamous. It is assumed that birds can breed the year after fledging. Little is known about nighthawk reproduction.

Males are territorial and seldom venture into adjoining territories. The size of individual territories varies with habitat. In urban areas, sizes have ranged from 4.14 to 22.8 ha and in a natural field habitat a pair of nighthawks occupied 28.34 ha of space. In British Columbia, the same female reused the same natural nest for two consecutive years in Okanagan Falls, and another female reused a nest site on the roof of an industrial building in Burnaby

Table 3. Shortest, longest, and average length of stay for the Common Nighthawk in select regions of British Columbia, 1919-2005. Locations are listed from south to north for the coast and interior.

Location	Length of Stay (days)			
	Total Years	Shortest	Longest	Average
Coast				
Victoria	43	87	117	101
Duncan	23	80	106	91
Crescent Beach	17	72	113	82
Vancouver	33	79	116	98
Deer Lake	10	75	98	89
Burnaby Lake	14	76	115	90
Sechelt	19	70	111	90
Comox	30	88	122	99
Cortes Island	17	90	106	97
Campbell River	12	78	114	92
Sayward	10	78	113	92
Interior				
Richter Pass	15	83	98	91
Creston	5	79	112	91
Trail	18	73	95	85
Keremeos	10	80	93	87
Cranbrook	16	89	104	86
Skookumchuck	16	80	100	90
Kelowna	6	73	99	83
Rush Lake	14	71	93	82
Douglas Lake	11	84	95	89
Nakusp	11	75	103	94
Enderby	27	84	114	94
Kamloops	28	70	114	92
Blaeberry	5	61	102	77
Lac La Hache	12	76	96	84
Riske Creek	20	65	110	83
Quesnel	11	67	96	79
Prince George	17	70	108	85
Fraser Lake	10	70	87	77
Mackenzie	9	81	103	90

Location	Total Years	Length of Stay (days)		
		Shortest	Longest	Average
Fort St. John	5	68	108	87
Dease Lake	9	69	78	74

for three consecutive years. In a four-year study near Courtenay, no nests were in identical sites between years, but a banded female at a nest one year nested at a site close to where one had been banded at her nest the previous year.

Annual Cycle

Females arrive first, up to a week before males, and forage on their breeding grounds. About one week later males arrive, and commence enticing a female into a nesting territory using courtship behaviours that occur both in the air and on the ground. The aerial displays are spectacular. The male regularly dives from 60 m or more towards the female sitting on the ground, and just before reaching her, pulls out of the dive sharply, creating a loud “booming” sound with his wings. One male was recorded to produce 39 “flights” in 34 minutes! This behaviour may be continued at intervals well into the breeding season. On the ground, courting displays include throat puffing, tail-wagging, body wobbling, and showing off the white wing patches.

The female selects the nest site (Figure 15). There



Figure 15. The female Common Nighthawk selects the nest site, incubates the eggs, and broods the chicks for up to 15 days after hatching. Lower Klaklakama Lake, BC. 29 July 1999 (John Deal).

is no evidence that the species is double-brooded or has replacement clutches in British Columbia. The same female at Burnaby Lake used nest sites for four consecutive years and another female on Kobau Mountain used the same nest for three consecutive years. Distances between nests was recorded at Tete Jaune (1 m apart in an old sawmill clearing), Nelson (30 m apart in a BC Hydro dump), Kimberley (50 m apart in an abandoned BC Hydro construction site), and Victoria (30 m apart on an open arbutus-Garry oak hillside).

The nesting season, from egg-laying to fledging for individual pairs, is short and usually completed within 40 days. Peak egg-laying occurs from late June through early July and fledging from late July through mid-August.

The full breeding period in British Columbia extends from 22 May to 21 September (Figure 16). These extreme dates are for the coast and account for 118 days of breeding activity (Figure 17). Among four coastal regions, the period ranged from 59 to 93 days with an average of 81.25 days (Figure 17). In the interior, the full breeding period extends from 7 June to 25 August, a total of 80 days with an average of 69 days. There is a difference of 24 days between the far northern window and the extreme southern interior areas of the province.

We recently learned that the nest with young found near Skaha Lake, on the unusually early date of 14 June (1969) reported in *Birds of the Okanagan Valley*, was actually that of a Common Poorwill (Douglas Leighton pers. comm.). The early nesting date for the Okanagan valley now changes from 25 May to 7 June.

Nests

No actual nest is constructed but in soft substrates a nest scrape is usually evident. Eggs are located in two distinct habitat types – on the ground in open country and on flat roofs (typically gravel) in cities

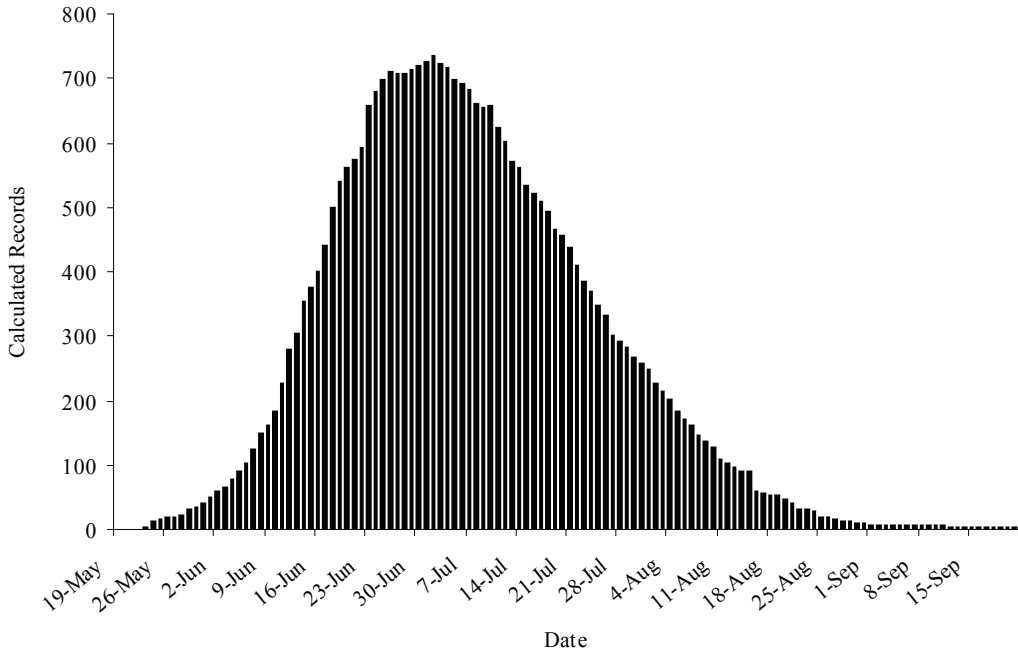


Figure 16. Nesting chronology for the Common Nighthawk in British Columbia showing the peak breeding period between 25 June and 4 July. Figure based on calculated dates from 779 nests.

and towns. Eggs are laid on gravel (Figure 18), bare soil, sand (Figure 19), bare rock, lichens, fallen logs, mosses (Figure 20), grasses, dried cow manure, live dandelion rosettes, crushed rock, sawdust, wood chips, deciduous leaves, conifer needles (Figure 21), debris of rotten stump, old bracken [or fern] fronds, pebbles, remnants of a charred log, small twigs, and gravel and tar roofs of buildings.

Frequently, ground nests are located near dead twigs, branches, fallen logs, rocks, stumps, small bushes, clumps of short grasses, dried cow manure, foot paths, and game trails. Most are in the open, but often partially shaded by various herbs, shrubs and trees. One on “Comox Burn” near Courtenay was under overhanging willow boughs.

Nests have been found at elevations ranging from 1 to 1,495 m (4,900 ft).

Eggs

Eggs are elliptical, smooth, glossy, creamy white to pale olive grey, heavily speckled with greys,

browns, and blacks (Figure 22). The average size is 30 mm (1.2 in.) x 22 mm (0.83 in.). Eggs are laid one to two days apart. Incubation ranges from 18 to 20 days and is carried out mostly by the female. The male does not have a brood patch and rarely sits on eggs. Eggs are left unattended during feeding forays.

The clutch size ranges from one to four eggs with two (94%; n=506) by far the most common. Apparent clutches of only one egg may be a result of egg loss (*e.g.*, predation), whereas clutches with more than two eggs may involve laying by two birds. If disturbed, or during very hot weather, females may move the eggs up to 90 cm from the original nest site.

Young

Chicks may peep for a few hours prior to hatching. The egg teeth are used to break the eggshells into two equal halves, after which the female may carry them away from the nest site. Some young may not

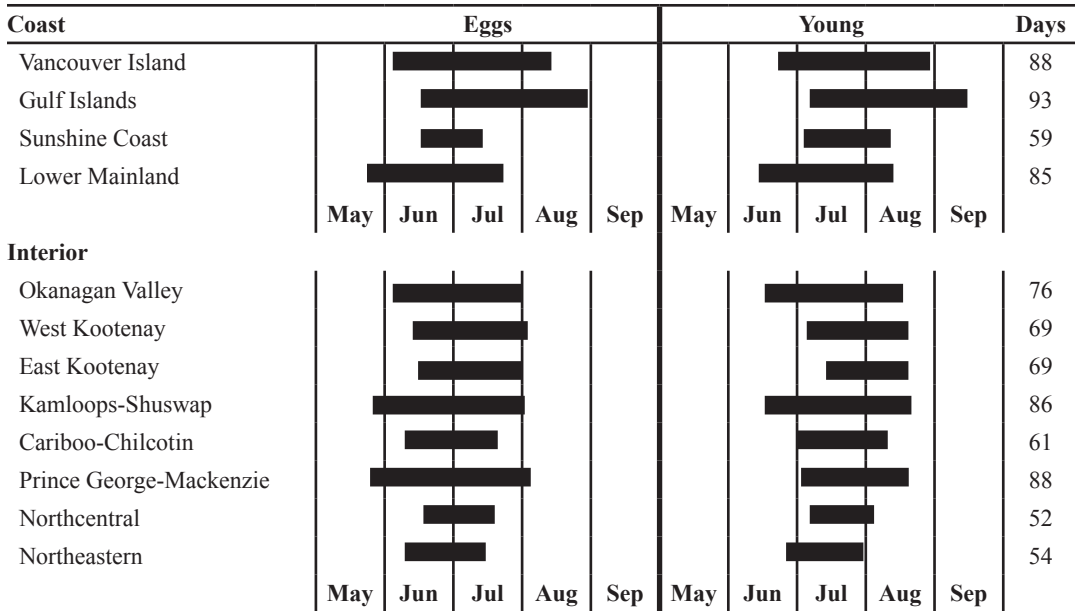


Figure 17. Breeding chronology of the Common Nighthawk for four coastal and eight interior regions of British Columbia, 1919-2005 (n=779). Total days include the full breeding period from first egg to latest fledging.

eat until they are two days old. If disturbed, or during very hot weather, the female may move tiny chicks up to 2 m from the original nest site, often to more shaded areas.

The semiprecocial nestlings hatch with a cover of sparse down and their eyes may be half or fully open (Figure 23). Within a day they are able to move about within the nest scrape. By day 7, the chicks start showing pinfeathers (Figure 24) and at 16 days old, they can hop up and down. At 18 days old, young may make their first short flights and by 25 to 30 days they can fly well.

Young are brooded by the female, during daylight hours, for about 15 days after hatching. When about a month old, young leave their parents. In British Columbia and Saskatchewan, it has been found that post fledglings often roost with males – presumably their male parent.

Lifespan

Given their low reproductive rate, the Common

Nighthawk is predicted to be a relatively long-lived species. Most individuals live at least four to five years. The oldest bird on record, from band-recovery information, is nine years two months.

Feeding and Diet

All evidence suggests that their only means of foraging is by catching individual flying insects while they themselves are in flight (“hawking”). The vast majority of foraging occurs in a period of 45-60 min around dusk and 30-60 min around dawn. Foraging at night can occur, usually associated with anthropogenic sources of illumination (e.g., stadium lights). Occasionally nighthawks forage in the daytime but this appears to be associated with energetic shortfalls and perhaps represents an “emergency response”. In terms of diet choice, nighthawks appear to eat different insects at different sites and at different times of the year.

In the Okanagan, flying ants and caddisflies appear to be the most important prey items. It is likely that



Figure 18. Eggs (lower left of photo) of the Common Nighthawk at a nest site on bare gravel. Mount Tolmie, BC. 8 July 1973 (R. Wayne Campbell).



Figure 19. Eggs (centre of photo) of the Common Nighthawk in a scrape in sand among lichens, yellow sand-verbena (*Abronia latifolia*), and entire-leaved gumweed (*Grindelia integrifolia*). Cordova Spit, BC. 6 July 1990 (Mark Nyhof).



Figure 20. A Common Nighthawk nest site on mosses in a logging burn with regenerating salal (*Gaultheria shallon*) shrubs. 1.5 km east of Woss, BC. Early July 1992 (Wayne Matkoski).



Figure 21. Common Nighthawk eggs laid on ponderosa pine needles near Chopaka, BC. 25 June 1993 (Mark Nyhof).

the species is flexible, being able to exploit locally abundant concentrations of a variety of insect types. The only constraint is likely the size of prey, such as very small insects that the nighthawk cannot see, or react to, quickly enough (*e.g.*, midges). There is no evidence they fly “open mouthed” through swarms of insects, in effect “trawling” for prey.

Mortality

Our databases do not adequately reflect all of the natural and human-influenced mortality factors for Common Nighthawks in British Columbia. The following information gathered from field observations, roadkills, injured birds brought into



Figure 22. Two eggs are the most common clutch size for the Common Nighthawk in British Columbia. Cassiar, BC. 25 July 1980 (R. Wayne Campbell).



Figure 24. Common Nighthawk nestlings, about 5-6 days old, showing pin feathers emerging along the wing. Roundup Lake, BC. 11 July 1998 (Karen L. Wiebe).



Figure 23. Two recently hatched chicks, with egg shell fragment, in a nest scrape in a regenerating clearcut near Jordan River, BC. July 2001 (P. Ray Williams).

wildlife rehabilitators for care, museum collections, and published literature is anecdotal but provides information on the kinds of mortality that nighthawks incur while visiting the province.

The causes for 477 incidents separated into 22 categories include: roadkill (38.6%; Figure 25), museum collecting (32%), private egg collecting (6.6%), found dead: cause unknown (4.2%), domestic cat (*Felis domesticus*) predation (3.2%), habitat destruction to nests (2.2%), unidentified predator of eggs and flightless young (2.2%), nest abandonment (1.7%), broken wing (1.7%), nest trampled by cattle

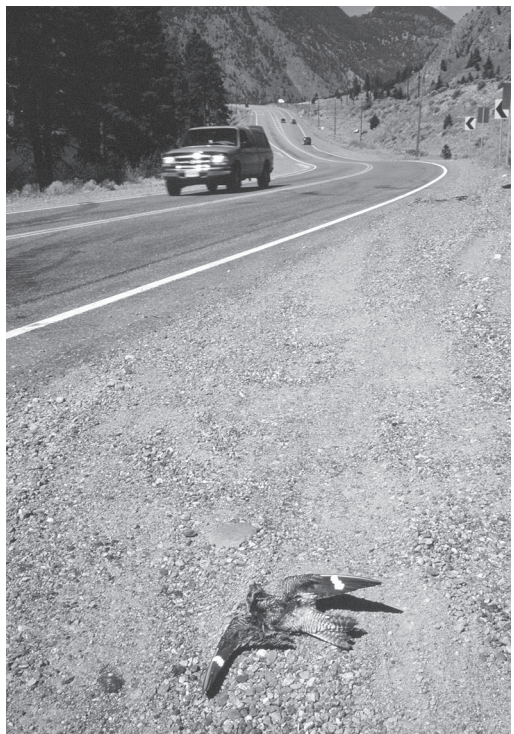


Figure 25. Collisions with vehicles constitute a significant source of mortality for Common Nighthawks across southern British Columbia. 10 km west of Keremeos, BC. 7 August 2000 (R. Wayne Campbell). BC Photo 3298.

(1.5%), inclement weather (rain and hail) (1.1%), nest trampled by humans (0.8%), high roof temperatures during nesting (0.6%), indiscriminate shooting (0.6%), all terrain vehicle damage to nests (0.4%), American Kestrel (*Falco sparverius*) predation (0.4%), domestic dog (*Canis familiaris*) predation (0.4%), snake predation (0.4%), starvation (0.4%), Common Raven (*Corvus corax*) predation (0.2%), coyote (*Canus latrans*) predation (0.2%), mountain bike damage to nest (0.2%), sunbathing (0.2%), and fly fishing (0.2%).

The deaths of several chicks in Martin McNicholl's study area in 1974 was believed to result from starvation during two periods of heavy rains that suppressed the flights of insects that the adults needed to feed their young.

Conservation and Management

The Common Nighthawk is classified as a Neotropical migrant, which is a species that spends its nonbreeding period south of Canada and United States of America. Threats on the wintering grounds, such as habitat loss and fragmentation, chemical contamination, and human disturbance, may affect populations indirectly in British Columbia, but conservation measures on the winter range are beyond our direct control.

In many coastal locations along the northeastern Pacific coast, the Common Nighthawk is now uncommon, locally distributed, and declining in lowland habitats, including cities. In Seattle, WA, this decline is attributed to the changes in gravel roofs to unusable smooth rubberized coated roof tops for nesting.

In British Columbia, Common Nighthawks are a generalist-species that use a variety of resources during spring and autumn migration and the breeding season. It is flexible and has been able to adjust well to changes in land practices. Agricultural clearing of forests, clearcuts, slash and burns created from logging activities, wetland preservation, and grazing on rangelands may have created additional breeding sites for the Common Nighthawk in the province.

Likely, the single most limiting factor to the nighthawk's future is an available and constant food supply in the form of flying insects. Fortunately, these are associated with a wide variety of terrestrial

and aquatic habitats.

Direct and indirect threats to the Common Nighthawk in British Columbia are poorly documented. These comprise both natural events and human-influenced activities, some of which may include:

Chemical Contamination

The indiscriminate use of pesticides and herbicides to control insects and plants on agricultural lands, forests, golf courses, residential yards, cities and towns, parks, transmission corridors, rights-of-ways, mine sites, and wetlands is often cited as one of the main reasons for population declines of the Common Nighthawk in North America. The general consensus is that chemical contamination may reduce the amount of available prey. The situation is compounded with the spread of the West Nile Virus and rapid development of spraying programs for local wetlands to eradicate mosquitoes that serve as vectors.

While there is a perceived threat to nighthawks from chemical contamination and loss of flying insects (their main food source), we could not find data that support a direct correlation. There have been no reports of direct, or indirect, mortality to Common Nighthawks by pesticide or herbicide use in British Columbia.

Habitat Change, Loss, and Fragmentation

The Common Nighthawk feeds and breeds in almost every open habitat in the province as long as there are abundant flying insects and bare surfaces for nesting. Humans have significantly altered many habitats in British Columbia from the original forested landscape. The products of these include residential and commercial developments, agricultural crops and fields, rangeland, parks, golf courses, gravel pits, transmission corridors (Figure 26), clearcuts, wetland draining, dredging, mines, roads, rights-of-ways, and landfills. In most situations land-clearing has probably benefited the species and allowed it to expand its range in the province.

Changes in traditional breeding habitats have directly affected some nesting Common Nighthawks locally and most of these occur in cities and towns. Roof-nesting birds have disappeared from Victoria, Burnaby Lake, Vancouver, Point Grey, New



Figure 26. Open ground with short vegetation and rock outcroppings in transmission corridors are favourite nesting sites for the Common Nighthawk on the Sunshine Coast. Sechelt, BC. 24 May 2001 (R. Wayne Campbell).

Westminster, and Surrey. The change in flat-roofed building construction from gravel to rubber and tar has resulted in egg loss through heat radiation and rolling. In one instance, however, an incubating female nighthawk was able to maintain a temperature of 46°C successfully despite a roof temperature that rose to 61°C. Encouraging building owners to place a fine gravel pad, usually 1 m² in size, in the corner of roofs may entice nighthawks back into our urban and residential habitats. At Crescent Beach, a nesting pair of nighthawks was displaced in the 1960s by field and beach conversion to homes.

Natural changes in habitats also affect nesting by Common Nighthawks. This situation is most evident in logged areas where pairs successfully nested in clearcuts, burns, or slashes and were forced to relocate elsewhere due to regeneration. Nighthawks are adapted to such changes, moving into newly

logged or cleared areas much as their pre-settlement ancestors would move into areas newly cleared by forest fires.

The loss of connectivity to patches of similar habitat (e.g., marshes) affect foraging areas for nighthawks and habitat preservation of large wetlands may be important locally.

The Common Nighthawk is a species that appears to have adapted well to some habitats created by humans. Even artificial lights along streets and around playing fields in cities and towns attract foraging nighthawks at dawn and dusk.

Communal Roosts

No study in British Columbia has identified or directly quantified the structure and microclimates of roost sites throughout the species' range in the province, especially where small aggregations gather each summer during the day. Some sites have been occupied since the mid-1970s, all by males, and may



Figure 27. Juniper Beach Park, BC, a small oasis of ponderosa pines, junipers, and gravel bars bordering the Thompson River in an arid sagebrush and grassland habitat, is the largest known roost site for Common Nighthawks in British Columbia. 10 June 1998 (R. Wayne Campbell).

reach 100 or more birds. There are only three such sites known to be used currently in the province, at Okanagan Falls, Juniper Beach Park and near Hedley, all in small patches of individually-spaced ponderosa pines bordering rivers. (Figure 27). All roost locations were still active through 2006 but numbers have declined.

The roost site at Juniper Beach has decreased steadily in size since becoming established as a provincial park in 1989. At least 100 nighthawks roosted in the trees, and on the ground, throughout the area in the late 1970s and early 1980s. Today, the park is a popular campsite and the roost site, although now centered in the park, has declined to about 20 birds. Dead pines within the campsites should be retained as future roost sites as well as other living trees including the junipers.

As well, physical descriptions of roost sites in the province, activity periods, and micro-climate information should be obtained and used to protect these sites and minimize disturbance. These should be incorporated into mitigation plans to preserve similar riparian habitats in southern British Columbia.

Road Mortality

Road-related mortality has been well documented for many wildlife species. Factors influencing mortality include season, weather events, type of road, location of road, proximity of vegetation to the road, road density and usage, and behaviour of the species.

Automobiles kill Common Nighthawks roosting on roads and road shoulders and when foraging low over highways while flying between feeding areas (see Figure 25). The rapid increase in car ownership, road density, and road traffic across many parts of southern British Columbia pose a real threat to populations locally. The highest casualties from vehicle collisions in British Columbia were reported from the Okanagan valley and East Kootenay.

Defining hotspots for vehicular mortality in the province may help with mitigation efforts, so reporting dead nighthawks to a central database is helpful. In addition, quantifying individual dead animals that are spotted along known kilometres of linear transects of roads is useful for estimating the impact of road traffic on species.

Shooting

Shooting nighthawks has occurred in British Columbia. During the 1960s these aerial foragers were used as targets during autumn migration at Nicomen Slough, near Deroche in the lower Fraser River valley, where they gathered for several weeks in late July and August to hawk insects. Kids shooting at the birds thought they were hawks. They apparently killed about “half a dozen” each year. Since then there have been no reports of indiscriminate shooting anywhere in the province.

Aircraft Strikes

Bird strikes to commercial, civil, and military aircraft are serious safety and economic problems in North America, causing loss of human life and millions of dollars in damage. In the United States, 52,493 wildlife strikes were reported to the Federal Aviation Administration for a 14-year period between 1990 and 2003. Of these, birds caused 97.4%.

Small numbers of Common Nighthawks are killed by aircraft each year throughout North America but may be a serious problem at some airports. For example, at the McConnell Air Force Base in Kansas, Common Nighthawks account for 38% of all aircraft strikes. This figure jumped to 82% during August and September, when large numbers of nighthawks foraged and roosted on and around airfields during migration. They fed mainly on corn earworm moths (*Noctuidae* spp.) and beetles (*Scarabaeidae* spp.). Mitigation efforts included trapping and translocating nighthawks from the airfield. Of 214 birds translocated between 44 and 88 km from the airfield only one returned.

Common Nighthawks have been reported from many airports in British Columbia, where they forage around artificial lights in the evening and roost on runways, roads, and fields. Potential concerns have been reported at Comox, Nanaimo (Cassidy), Vancouver, Abbotsford, and Kamloops. It has been suggested that changing the wavelength emitted by airport lights may discourage moths and other flying insects that provide a source of food for nighthawks.

Agriculture

Clearing of forests for agricultural purposes has undoubtedly provided nest-sites for nighthawks in some areas. However, the degree of suitability of specific cleared land depends on the intensity of

cultivation and/or grazing on it, as nests and young would be susceptible to being trampled by livestock or damaged by farm machinery. A more significant negative hazard is posed by the use of synthetic chemicals for fertilizer and especially biocides for weed and insect control. Although little studied in nighthawks, such chemicals have been found to kill some other insect-eating bird species directly and to lower reproductive success less directly through effects on fertility, viability of eggs and deformities in young.

While agricultural practices have removed some natural habitat for roosting and nesting, given the apparent flexibility of this species and its ability to use human objects to roost/nest on, it is likely a less significant issue than for most species. Intensive agriculture, and pesticide use normally associated with it, probably depresses local insect numbers and residual poisons may impact nighthawks. Research on this would be worthwhile.

Outdoor Recreation and Foraging and Nesting Nighthawks

Recreational activities can harm wildlife indirectly and directly but their effects are not understood and poorly documented. Some of these activities include shooting, fishing, nature viewing, hiking, birdwatching, horseback riding, rock climbing, sunbathing, exercising pets, vehicles, building driftlog sculptures and forts on beaches, photography, and residential shore developments.

Sand spits on southern Vancouver Island are popular recreation sites for people throughout the year but are most heavily used during the summer months. In recent years some sites (*e.g.*, Island View Beach) have been abandoned by nesting nighthawks due to human disturbance, often vehicle traffic (Figure 28). These rare and restricted habitats support unique associations of plants and provide refuge for migrating and resident animals in an otherwise urban environment. With nighthawk numbers dwindling, and nesting sites becoming more restricted, it may be helpful to regulate the use of cars and trucks, as well as all-terrain vehicles, from all sand spits during the summer months.

In British Columbia, we are aware of six outdoor activities that have affected nighthawks directly. A nest with eggs was destroyed by sunbathers on Sidney



Figure 28. Human activities, such as driving indiscriminately over nesting grounds, have threatened some of the few remaining Common Nighthawk nesting sites on sand spits on southern Vancouver Island. Cordova Spit, BC. 5 August 2006 (Mark Nyhof).

Island, a dog out for its daily walk caught and killed a near fledging nighthawk on Goose Spit (Comox), an all-terrain vehicle ran over a known nest with small chicks near Chopaka, a nest containing eggs was trampled by hikers in Manning Park, an adult Common Nighthawk was caught by a fly fisherman at Roche Lake south of Kamloops, and an egg was destroyed by a mountain bike in a study site near Victoria.

The rapidly expanding human population in British Columbia and the rapid proliferation of outdoor activities, especially the more intrusive forms (such as all-terrain vehicles) will undoubtedly increase the intensity of this kind of threat.

We encourage people to report details of “accidents” and other human-related activities that affect the Common Nighthawk so that we can learn to coexist through informed management.

Climate Change

The threat with the greatest potential to affect the Common Nighthawk is climate change. The forthcoming effects are on a scale much larger than just British Columbia. Global changes have already been documented in ecological systems in populations and life-history attributes, shifts in geographic range, species composition of communities, and structure

and functioning of ecosystems.

The major threat to the Common Nighthawk concerns changes in phenology and distribution of its food base. Many flying insect populations are predicted to shift their ranges to higher latitudes and altitudes in response to climate warming. In British Columbia, the most currently at risk are insect communities in lowland habitats. Predicting how the Common Nighthawk will respond to climate change is a challenge but a topic that should be included in all future conservation efforts in the province. The importance of maintaining a comprehensive central database on all aspects of the ecology and life history of the Common Nighthawk is a critical first step.

Population Trends

Populations

We must be cautious when assessing population trends for the Common Nighthawk in British Columbia because long-term traditional surveys such as Breeding Bird Surveys and Christmas Bird Counts do not sample numbers or habitats of Common Nighthawks adequately. The species winters mostly south of the continent where Christmas Birds Counts have not been conducted extensively enough to be useful. Standard Breeding Bird Surveys do not adequately sample the species' habitats, crepuscular habits of the species, foraging habitats, nor responses to insect outbreaks. The ephemeral nature of the nesting habitat also makes any sort of census results difficult to interpret without many years of data over large areas. Breeding Bird Surveys, however, suggest that there has been a general decrease in summer numbers in North America from stable numbers between 1966 and 1979 to significant decreases from 1980 to 1991. A similar trend has occurred in western North America for the same general time period. Indications of declines were already expressed for North America as a whole by its being included in four of the last five years of the 1970s in the "Blue List" early warning compilation of *American Birds* and by its inclusion on an early 1980s list of Alberta Species at Risk proposed by the Edmonton Bird Study Group.

Sightings of Common Nighthawks are becoming increasingly infrequent in larger cities and where urban development is increasing rapidly in the

province (Figure 29). Such places as Abbotsford, Burnaby, Campbell River, Langford, Nanaimo, Surrey, Vancouver, and Victoria have all shown decreases in reporting. This may be due to loss of a prey base, loss of suitable nesting and foraging habitats, predation, or more likely, a combination of these factors. It may also reflect threats, especially pesticide contamination, to nighthawks on their wintering grounds.



Figure 29. The number of Common Nighthawks breeding in urbanized areas of British Columbia has decreased significantly over the past two decades. Cordova Spit, BC. 4 July 2001 (Mark Nyhof).

Increasing urbanization and recreational activities, such as walking, jogging, dog-walking, and wildlife viewing at traditional nesting sites in the Fraser River delta (e.g., Crescent Beach and Iona Island) have displaced nesting nighthawks.

Although there are no direct sampling and monitoring programs to evaluate trends in the province, it is a general consensus among many biologists, collectors, and naturalists that the Common Nighthawk has shown a steady decline across much of southern British Columbia (Table 4). For example, in Nakusp, in the West Kootenay, Gary Davidson compiled and analyzed information for 24 years between 1976 and 2005. His data showed that the average number of sightings he recorded each year decreased from 6.3 between 1976 and 1985, to 4.0 between 1988 and 1994, to 2.3 between 1997 and 2005 and the average maximum number of birds observed decreased from 8.4, to 4.1, and finally to 3.1 for the same period.

Table 4. Population trends for the Common Nighthawk in select areas of British Columbia, 1919-2005. Locations are listed south to north for coast and interior regions.

Location	Period	Years	Population Trend			
			Increase	Decrease	Stable	Unknown
Coast						
Metchosin	1986-2005	20		X		
Victoria	1940-1965	26			X	
	1966-2005	40		X		
Langford	1988-2005	18		X		
Duncan	1965-1979	15			X	
	1980-1987	8		X		
Crescent Beach	1940-1950	11				X
	1951-2005	55		X		
Abbotsford	1963-2005	43		X		
Vancouver	1958-1979	22			X	
	1980-2005	26		X		
Burnaby	1968-1986	19			X	
Deer Lake	1968-1982	15		X		
Burnaby Lake	1959-1972	14			X	
Sechelt	1972-2005	34			X	
Alta Lake (Whistler)	1926-1946	21			X	
Comox	1920-1949	30			X	
Cortes Island	1972-1989	18			X	
	1990-2006	17		X		
Powell River	1970-1985	16			X	
	1986-2005	20		X		
Campbell River	1975-1992	18		X		
Sayward	1992-2005	14			X	
Woss	1993-2005	13			X	
Interior						
Richter Pass	1954-1968	15			X	
Creston	1975-2005	31			X	
Christina Lake	1955-2005	51			X	
Trail	1933-1985	53			X	
Keremeos	1919-1928	10			X	
Cranbrook	1937-1948	12			X	

Location	Period	Years	Population Trend			
			Increase	Decrease	Stable	Unknown
Skookumchuck	1967-1982	16				X
Kelowna	2000-2005	6				X
Rush Lake	1975-1988	14			X	
Douglas Lake	1983-1993	11			X	
Nakusp	1975-2005	31		X		
Vernon	1975-1988	14			X	
	1989-2005	17		X		
Kamloops	1975-1990	16			X	
	1991-2005	15		X		
Clinton	1980-1989	10			X	
	1990-1998	9		X		
Blaeberry	1993-2005	11				X
Lac La Hache	1964-1975	12			X	
Eagle Lake	1991-2005	15			X	
Riske Creek	1983-1992	10			X	
	1993-2005	13		X		
Bechers Prairie	1994-2005	12			X	
Quesnel	1954-1964	11			X	
	1986-2005	20			X	
Fraser Lake	1965-1974	10			X	
Mackenzie	1973-2005	33			X	
Dawson Creek	1991-2005	15		X		
Fort St. John	1975-1989	15				X
Sikanni Chief	1992-1999	8			X	
Dease Lake	1977-1985	9			X	

Others have also noted declines. The first published reference to a noticeable drop in numbers in British Columbia was reported by A. R. Davidson, who stated in his 1966 report *Annotated List of Birds of Southern Vancouver Island* "Formerly common but observers report diminishing numbers." David Stirling (pers. comm.) commented that each summer, during the 1960s and early 1970s, nighthawks could be heard most days in the evening and morning calling over the city of Victoria. By 1972, Jeremy B. Tatum

reported in his *Annual Bird Report for Southern Vancouver Island* that the Common Nighthawk was "very scarce in the Victoria area". As a follow up, P. Ray Williams, who has been birdwatching on southern Vancouver Island since the late 1970s, wrote "I remember in the 1970s large numbers of "Mosquito Hawks" cavorting in the Langford sky on hot summer evenings. They were everywhere. Now [2005] I can go a whole year without seeing one in British Columbia."

Wayne Weber, in his 1980 seasonal report to *American Birds*, commented “*Common Nighthawks definitely seem to be decreasing as a breeding bird in the Vancouver area – an impression shared by most local observers ... Nighthawks cannot be found at many spots where they used to breed 10 years ago*”. In 1983 Doug Kragh, in his seasonal report to birders, wrote “*The numbers of reports received for this species continue to decline in the Vancouver area...*”. Near Riske Creek, Linda Durrell, who lives and works on a farm, noticed that the number of Common Nighthawk sightings decreased from an average of 32 per year between 1982 and 1992 to an average of nine per year between 1992 and 2000.

Table 4 shows a similar trend for many of the 44 locations with at least six continuous years of data recording. On the coast 11 of 18 locations (61%) reported significant decreases in numbers and occurrence of nighthawks. Throughout the interior only six of 26 locations (23%) reported a noticeable change in status. Throughout the province most declines are associated with fast developing urban habitats.

Migration Dates

Changes in arrival and departure dates recorded annually over a long period of time are another important source in understanding and evaluating trends in populations. Since spring migration is less protracted than the autumn movement, and considering the bias of observers in recording “first” dates rather than “last” dates, the number of locations with complete seasonal information varies considerably. We present data on average arrival dates by decade for 13 coastal and 26 interior locations (Table 5) and departure dates for 11 coastal and 21 interior locations (Table 6).

From the 1940s through the early 2000s the average arrival date along the south coast changed from 10 June to 2 June, a difference of eight days earlier. For some locations (*e.g.*, Campbell River, Comox, and Cortes Island) the average arrival date per decade was remarkably constant and varied only within a few days. For the same period, average arrival dates in the interior changed from 7 June (1940s) to 5 June (early 2000s) a difference of only two days earlier. Creston, Christina Lake, and Cranbrook showed little variation in arrival dates

over many decades. The long-term trend, however, suggests that nighthawks are generally arriving earlier in British Columbia over the past 86 years (Table 5).

The greatest difference in average arrival dates on the coast occurred in Victoria (10 days earlier over 66 years), Vancouver (15 days earlier over 66 years), and Sechelt (6 days earlier over 36 years) and in the interior at Prince George (10 days earlier over 28 years), Trail (7 days earlier over 52 years) and Kamloops (6 days earlier over 28 years). The period 2000-2005 can be misleading, however, as arrival dates may be affected by the growing scarcity of the species in some localities.

The average departure date along the south coast for 66 years changed from 2 September (1940s) to 6 September (early 2000s), a difference of four days later. For some locations (*e.g.*, Comox, Cortes Island, and Crescent Beach) the average arrival date per decade varied only within a few days.

In the interior, for the period with three or more localities listed (*e.g.*, 1950s to early 2000s), the average departure date for the province over 56 years changed by only one day from 31 August (1950s) to 1 September (early 2000s). Five locations (*e.g.*, Creston, Dease Lake, Douglas Lake, Fraser Lake, and Richter Pass) showed no change or changed only a day or two over decades of records. Kamloops (10 days later over 28 years), Cranbrook (12 days later over 12 years), and Prince George (16 days later over 17 years) showed the greatest increases in later departure dates.

Length of Stay

The average length of time Common Nighthawks visit British Columbia ranged from 79 days (Vancouver in the 1940s) to 116 days (Vancouver and Victoria both in the 1970s). For most locations in the province there has been a gradual increase in the amount of time spent in the province with each successive decade. On the coast this changed from 86 days in the 1940s, to a high of 97 days in the 1970s and dropped slightly to 95 days in the early 2000s. Over the 86-year period, birds slowly increased their summer residency by up to 12 additional days (Table 7).

In the interior, the length of stay ranged from 66 days (Blaeberry in the early 2000s) to 102 days

Table 5. Spring arrival dates of the Common Nighthawk, by decade, for select areas in British Columbia, 1920-2005. Locations are listed south to north for coast and interior regions. Date is the average for the decade. The average date was calculated by assigning numbers for a particular date from a Julian Day Table.

Average Spring Arrival Date									
Location	1920- 1929	1930- 1939	1940- 1949	1950- 1959	1960- 1969	1970- 1979	1980- 1989	1990- 1999	2000- 2005
Coast									
Victoria	-	-	9 Jun	9 Jun	8 Jun	1 Jun	1 Jun	4 Jun	31 May
Duncan	-	-	-	-	6 Jun	5 Jun	4 Jun	-	-
Crescent Beach	-	-	12 Jun	8 Jun	-	-	-	-	-
Reifel Island	-	-	-	-	-	-	9 Jun	5 Jun	3 Jun
Vancouver	-	-	12 Jun	8 Jun	28 May	31 May	1 Jun	1 Jun	29 May
Burnaby Lake	-	-	-	8 Jun	6 Jun	3 Jun	-	-	-
Deer Lake	-	-	-	-	6 Jun	6 Jun	3 Jun	-	-
Sechelt	-	-	-	-	-	4 Jun	2 Jun	1 Jun	30 May
Comox	6 Jun	3 Jun	6 Jun	3 Jun	3 Jun	1 Jun	-	-	-
Cortes Island	-	-	-	-	-	7 Jun	7 Jun	6 Jun	6 Jun
Campbell River	-	-	-	-	-	9 Jun	7 Jun	7 Jun	-
Sayward	-	-	-	-	-	-	-	8 Jun	5 Jun
Woss	-	-	-	-	-	-	-	8 Jun	12 Jun
Interior									
Richter Pass	-	-	-	7 Jun	3 Jun	-	-	-	-
Creston	-	-	-	-	-	5 Jun	6 Jun	7 Jun	9 Jun
Christina Lake	-	-	-	6 Jun	1 Jun	2 Jun	4 Jun	4 Jun	7 Jun
Trail	-	12 Jun	10 Jun	8 Jun	9 Jun	10 Jun	2 Jun	4 Jun	6 Jun
Keremeos	7 Jun	-	-	-	-	-	-	-	-
Cranbrook	7 Jun	8 Jun	9 Jun	-	-	-	-	-	-
Skookumchuck	-	-	-	-	8 Jun	7 Jun	5 Jun	-	-
Kelowna	-	-	-	-	-	-	-	-	13 Jun
Rush Lake	-	-	-	-	-	7 Jun	5 Jun	-	-
Douglas Lake	-	-	-	-	-	-	4 Jun	1 Jun	-
Nakusp	-	-	-	-	2 Jun	31 May	1 Jun	4 Jun	12 Jun
Enderby	2 Jun	30 May	2 Jun	7 Jun	-	-	-	-	-
Kamloops	-	-	-	-	-	6 Jun	2 Jun	2 Jun	2 Jun
Clinton	-	-	-	-	-	-	6 Jun	5 Jun	-
Blaeberry	-	-	-	-	-	-	-	30 May	2 Jun
Lac La Hache	-	-	-	-	5 Jun	4 Jun	-	-	-

Average Spring Arrival Date									
Location	1920- 1929	1930- 1939	1940- 1949	1950- 1959	1960- 1969	1970- 1979	1980- 1989	1990- 1999	2000- 2005
Riske Creek	-	-	-	-	-	-	1 Jun	3 Jun	7 Jun
Bechers Prairie	-	-	-	-	-	-	-	4 Jun	4 Jun
Quesnel	-	-	-	10 Jun	5 Jun	-	-	-	-
Prince George	-	-	-	-	-	9 Jun	7 Jun	3 Jun	31 May
Fraser Lake	-	-	-	-	12 Jun	11 Jun	-	-	-
Mackenzie	-	-	-	-	-	-	-	8 Jun	5 Jun
Dawson Creek	-	-	-	-	-	-	-	9 Jun	2 Jun
Fort St. John	-	-	-	-	-	3 Jun	2 Jun	-	-
Sikanni Chief	-	-	-	-	-	-	-	30 May	-
Dease Lake	-	-	-	-	-	11 Jun	10 Jun	-	-

Table 6. Autumn departure dates of the Common Nighthawk, by decade, for select areas in British Columbia, 1920-2005. Locations are listed north to south for coast and interior regions. Date is the average for the decade. The average date was calculated by assigning numbers for a particular date from a Julian Day Table.

Average Autumn Departure Date									
Location	1920- 1929	1930- 1939	1940- 1949	1950- 1959	1960- 1969	1970- 1979	1980- 1989	1990- 1999	2000- 2005
Coast									
Sayward	-	-	-	-	-	-	-	2 Sep	9 Sep
Campbell River	-	-	-	-	-	3 Sep	12 Sep	1 Sep	9 Sep
Cortes Island	-	-	-	-	-	5 Sep	7 Sep	6 Sep	-
Comox	11 Sep	15 Sep	9 Sep	10 Sep	11 Sep	-	-	-	-
Sechelt	-	-	-	-	-	25 Aug	27 Aug	1 Sep	30 Aug
Burnaby Lake	-	-	-	31 Aug	30 Aug	13 Sep	-	-	-
Vancouver	-	-	29 Aug	28 Aug	4 Sep	18 Sep	13 Sep	21 Sep	-
Reifel Island	-	-	-	-	-	-	17 Sep	11 Sep	7 Sep
Crescent Beach	-	-	29 Aug	28 Aug	-	-	-	-	-
Duncan	-	-	-	-	31 Aug	4 Sep	4 Sep	-	-
Victoria	-	-	2 Sep	15 Sep	13 Sep	13 Sep	21 Sep	19 Sep	6 Sep
Interior									
Dease Lake	-	-	-	-	-	22 Aug	22 Aug	-	-
Fort St. John	-	-	-	-	-	-	25 Aug	-	-
Mackenzie	-	-	-	-	-	-	-	5 Sep	31 Aug

Average Autumn Departure Date									
Location	1920-1929	1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2005
Prince George	-	-	-	-	-	25 Aug	24 Aug	31 Aug	9 Sep
Fraser Lake	-	-	-	-	26 Aug	26 Aug	-	-	-
Quesnel	-	-	-	24 Aug	26 Aug	-	-	-	-
Riske Creek	-	-	-	-	-	-	23 Aug	28 Aug	22 Aug
Lac La Hache	-	-	-	-	25 Aug	30 Aug	-	-	-
Blaeberry	-	-	-	-	-	-	-	22 Aug	14 Aug
Kamloops	-	-	-	-	-	26 Aug	31 Aug	6 Sep	4 Sep
Enderby	1 Sep	4 Sep	1 Sep	6 Sep	-	-	-	-	-
Nakusp	-	-	-	-	-	4 Sep	8 Sep	3 Sep	11 Sep
Douglas Lake	-	-	-	-	-	-	30 Aug	30 Aug	-
Rush Lake	-	-	-	-	-	23 Aug	27 Aug	-	-
Kelowna	-	-	-	-	-	-	-	-	8 Sep
Skookumchuck	-	-	-	-	29 Aug	4 Sep	9 Sep	-	-
Cranbrook	30 Aug	12 Sep	10 Sep	-	-	-	-	-	-
Keremeos	31 Aug	-	-	-	-	-	-	-	-
Trail	-	-	-	-	26 Aug	30 Aug	26 Aug	-	-
Creston	-	-	-	-	-	-	-	30 Aug	31 Aug
Richter Pass	-	-	-	2 Sep	2 Sep	-	-	-	-

(Prince George in the early 2000s), which were less than reported for the coast. Between the 1950s and early 2000s average length of stay fluctuated between 81 and 89 days but showed a general increase in the amount of time spent in the province. Also, most locations showed general increasing trends.

Research in British Columbia

When Martin McNicholl (Figure 30) started his Ph.D. study on the behaviour and social organization of male Sooty Grouse (*Dendragapus fuliginosus*) as a component of the long-term grouse studies of Fred C. Zwickel on the “Comox Burn” study area northwest of Courtenay in 1971, Martin soon realized that the team of dogs (*Canis familiaris*) used to help census and monitor the grouse also frequently pointed nighthawks on nests.

As most studies of nesting nighthawks published previously involved only one or two nest(s), often on roofs of buildings, he saw an opportunity to collect data on larger numbers of nests in a natural setting. Zwickel, his grouse-censusing team and their canine companions, all enthusiastically co-operated in flagging and recording nest-sites so that Martin could visit them. Each nest-site was visited as often as practical for a secondary study and details recorded on clutch size, egg dimensions, nest-site, contents, hatching and/or probable fledging success, parental behaviour, physical and behavioural growth of young, and other natural history factors. Although details at a few sites were sketchy, especially if not visited personally by Martin, considerable data were collected, with 28 nestings documented in 1971, 29 in 1972, 37 in 1973 and 30 in 1974. Banding of 16 nesting females and numerous chicks aided

Table 7. Average length of stay for the Common Nighthawk, by decade, for select areas in British Columbia, 1920-2005. Locations are listed south to north for coast and interior regions.

Location	Average Length of Stay (days)								
	1920-1929	1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2005
Coast									
Victoria	-	-	87	99	97	116	110	94	-
Duncan	-	-	-	-	87	92	93	-	-
Crescent Beach	-	-	82	82	-	-	-	-	-
Vancouver	-	-	79	82	101	116	106	105	-
Deer Lake	-	-	-	-	80	86	89	-	-
Burnaby Lake	-	-	-	85	86	103	-	-	-
Sechelt	-	-	-	-	-	83	86	93	92
Comox	98	104	94	96	99	-	-	-	-
Cortes Island	-	-	-	-	-	93	93	94	-
Campbell River	-	-	-	-	-	85	98	86	96
Sayward	-	-	-	-	-	-	-	86	96
Interior									
Richter Pass	-	-	-	88	92	-	-	-	-
Creston	-	-	-	-	-	-	-	-	91
Trail	-	-	-	-	73	86	86	-	-
Skookumchuck	-	-	-	-	83	90	97	-	-
Keremeos	87	-	-	-	-	-	-	-	-
Cranbrook	93	94	94	-	-	-	-	-	-
Kelowna	-	-	-	-	-	-	-	-	83
Nakusp	-	-	-	-	-	96	98	86	100
Rush Lake	-	-	-	-	-	77	84	-	-
Douglas Lake	-	-	-	-	-	-	88	90	-
Enderby	92	98	93	93	-	-	-	-	-
Kamloops	-	-	-	-	-	82	92	97	95
Blaeberry	-	-	-	-	-	-	-	84	66
Lac La Hache	-	-	-	-	-	81	88	-	-
Riske Creek	-	-	-	-	-	-	83	87	78
Quesnel	-	-	-	76	81	-	-	-	-
Prince George	-	-	-	-	-	78	79	91	102
Fraser Lake	-	-	-	-	76	79	-	-	-
Mackenzie	-	-	-	-	-	-	-	90	92

Location	Average Length of Stay (days)								
	1920-1929	1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2005
Fort St. John	-	-	-	-	-	-	87	-	-
Dease Lake	-	-	-	-	-	73	74	-	-



Figure 30. Martin McNicholl initiated research on the breeding biology of the Common Nighthawk in British Columbia. From 1971 to 1974, he and his colleagues monitored 124 nests found on the “Comox Burn”, northwest of Courtenay, BC. That total accounts for 16% of all nests reported for the province. Burnaby Lake Regional Park, BC. 25 August 2006 (Kevin A. Young).

in documenting nesting success, and development and movements of young. Blood collected from 28 of these nighthawks by or for Norman A. Williams in 1973 and 1974 was examined for blood parasites, resulting in the naming of a new species, *Haemoproteus caprimulgi*, from two of these birds.

In the 1980s and 1990s, Mark Brigham, and

his students and colleagues addressed a number of questions about the behaviour and ecology of Common Nighthawks in British Columbia (see Figure 38, page 68). Most of this work was focused on a population residing in the South Okanagan valley. They are currently extending some of these studies to populations in southern Saskatchewan. Mark and his colleagues have also studied foraging ecology, flight speed, diet, roost site selection, and torpor use by this species in BC. In summary, nighthawks appear to be rather flexible in their prey selection, capitalizing on locally abundant flying insects including flying ants, caddisflies, beetles, and moths. Torpor (a short term physiological mechanism where metabolism and consequently body temperature declines, leading to significant energy savings) is occasionally employed by nighthawks, but not nearly as commonly as for other caprimulgids. Gravel roofs have declined in their importance as nest sites and it is possible that this species artificially increased in numbers due to this urban habitat. Long term monitoring is needed to address whether the population continues to decline (which would not be predicted on the basis of habitat loss alone) or not. Mark and his colleagues are continuing to try to learn the rationale for nighthawks roosting on roads at night, a behaviour that contributes substantially to mortality and thus conservation concern.

Another opportunistic study was conducted by Jim R. Salt, who recorded nest-site details of several nests found while he was conducting ecological and photographic studies in three areas of arbutus-Garry oak ridges near Victoria, BC, between 1987 and 1996 before encroaching housing developments reduced suitable nesting habitat.

Janet Ng, a Master of Science student at the University of Regina, is focusing her research on habitat selection and thermoregulation of Common Nighthawks at two spatial scales in southern Saskatchewan: 1) local scale habitat use using

transmitted birds (Figure 31) and 2) landscape scale habitat use using survey data and digital habitat data. At the local scale, transmitted birds show flexible habitat use, roosting on rocks in native grassland to roosting on boat trailers in suburban neighbourhoods. Furthermore, despite the variety and abundance of potential roosts, Janet's data also show that individual nighthawks show a high fidelity to certain roosts. At a landscape scale, nighthawks are more likely to be found in native grassland than cultivated crop fields. Following Dr. Brigham's work in the Okanagan valley and Quinn Fletcher's work in the Cypress Hills, SK, Janet is investigating torpor use of nighthawks in southern Saskatchewan. The preliminary analyses show that nighthawks in southern Saskatchewan



Figure 31. Common Nighthawk wearing a radio transmitter affixed as a small backpack. Mainprize Regional Park, SK. June 2006 (Janet Ng). Janet's research uses transmitted birds to closely monitor habitat use by nighthawks. The transmitters are also temperature sensitive that allows researchers to monitor each nighthawk's skin temperature in order to evaluate torpor use.

will enter shallow bouts of torpor, often before foraging at dawn. Transmitted males also increase the frequency of torpor use towards the end of the breeding season, potentially saving body reserves for the upcoming migration. Little is known about nighthawk migration and winter ecology, but it is assumed that most nighthawks winter in Central and South America where pesticide contamination may be a concern. Future research should be directed to the ecotoxicology of nighthawks on their wintering range.

Databases

This account is based on 162,982 single occurrence records and 779 individual breeding records that include nests reported with eggs and/or flightless young. The Common Nighthawk account published in *The Birds of British Columbia* in 1990, still the standard reference for British Columbia, was written using 4,929 occurrence and 133 breeding records. The updated databases (2006) shows a substantial increase in individual records and breeding information that allowed for a more thorough summary of the status and natural history of the nighthawk in the province (Table 8).

Working databases for individual species may take many decades to develop. They require years of research, a solid foundation of physical and financial resources, user friendly electronic databases that can quickly analyze a wide variety of complex biological data, and a long term commitment from individuals, or organizations, that focus solely on gathering, entering, and analyzing data. Source material for the present Common Nighthawk account has taken nearly 40 years to amass and organize and nearly half a year to extract and enter. Needless-to-say, this centralized dataset was not readily available in summary form to the authors of *The Birds of British Columbia*.

It should be noted that the total number of nest cards in the British Columbia Nest Record Scheme up to 1990 available to write the species account was actually 133, although another 373 nests were extracted from published and unpublished literature and historical field notebooks for the account but cards were never completed. Most of the additional information was used for the distribution maps. Since

Table 8. Differences in total text (excluding Tables, Captions, and Literature Cited), distribution information, and size of databases used in the Common Nighthawk account published in *The Birds of British Columbia* (BBC) in 1990 with the current account from databases housed in the Wildlife Data Centre (WDC) in 2006.

	Information	Distribution ¹		Database	
	Total Words	Occurrence	Breeding	Occurrence Records	Nest Cards
BBC	1,260	348	86	4,929	133 ²
WDC	10,573	373	133	162,982	779
Increase (%)	739	7.3	54.7	3,207	486

¹ Based on the total number of 1:50,000 National Topographic System grids occupied.

² Total cards available in the British Columbia Nest Record Scheme.

that time these sources and many others, have now been re-searched and new cards have been added to the nest record scheme.

Recently, Martin McNicholl (see Figure 30, page 61) and Fred Zwickel (see photo on page 123 of *Wildlife Afield* Vol.2 No.2) transferred historical information from their field notebooks for 138 nighthawk nests they found, and monitored, incidental to their research on Blue Grouse on the “Comox Burn”, Vancouver Island, in the 1960s and 1970s. That unpublished research was a major contribution to the breeding biology of the species on the coast.

About 95% of the content of the updated dataset were extracted from a thorough search over the past five months of the Wildlife Data Centre library. These included historical diaries, field notebooks, miscellaneous lists of field observations, breeding records, museum catalogues, scientific publications, theses, consultant reports, sightings from bird watchers, correspondence, roadside raptor and road-kill surveys, banding records, telephone recordings, e-mails, and unpublished literature. The significance of having wildlife information centralized and not scattered across provincial and national databases, and readily available for analysis, is revealed in the depth and diversity of information contained in this account. We believe the potential to contribute in the future to our understanding of changes in the status of the Common Nighthawk in the province is significant.

The comprehensive databases may also provide clues and answers to other questions and concerns and help plan research projects outside the scope

of this species account. For example, the dataset for Vancouver and Victoria is sufficiently large that declines in urban coastal environments may be correlated with other parameters such as weather, urbanization, changes in building practices, chemical spraying programs, changes in insect life histories, and fluctuating prey populations. As well, declines in late summer foraging aggregations and general population shifts could be addressed and arrival and departure dates may be correlated with climate change.

Seven significant additions to the present species account include tables for early arrival and late departure dates, historical change in arrival dates over the past 86 years, historical changes in average length of stay, population trends, peak breeding period, and provincial monthly distribution maps. The latter will appear in 2007 as “flash maps” on our website at www.wildlifebc.org.

Did You Know?

Lunar Trickery

The Common Nighthawk is a crepuscular forager and spends most of the daylight hours roosting although at times they do seem to forage in the daylight hours. But its behaviour can change during lunar activity. Stanley Jewett et al., in *Birds of Washington State*, reports “At Sprague, [WA], June 8, 1918, during a partial eclipse of the sun, nighthawks left their roosting places and took to the air as is their custom at twilight, but disappeared when the sun brightened up again.”

What's in a Name?

The scientific name for the Common Nighthawk, *Chordeiles minor*, comes from the Greek word *khoreo* for “evening traveler” or “dancing in the evening” and the Latin word *minor* for “smaller”. The reference to size seems inappropriate since its relative, the Lesser Nighthawk (*Chordeiles acutipennis*), is actually smaller.

Night Owls

The large eyes (Figure 32) of the Common Nighthawk weighs more than its brain and because of an abundance of light sensitive receptors, it can see well in poor light. During the day, nighthawks roost with eyes closed, or nearly so, presumably for protection against direct light.

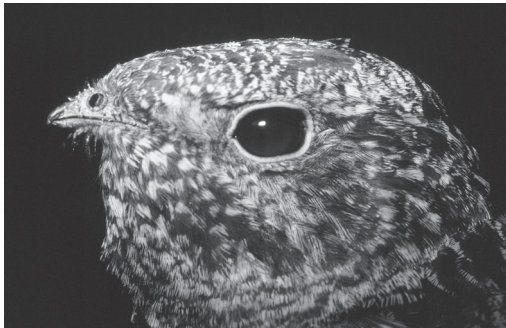


Figure 32. Common Nighthawk captured in a mist net at night and banded. Sea Island, BC. 14 September 1970 (R. Wayne Campbell).

True Buggers

The Common Nighthawk captures flying insects, from ants to moths, in its large gaping mouth that actually extends to behind its ears. Researchers found that the stomach of one bird contained 2,175 ants plus another 500 mosquitoes! Over 60 different kinds of insects have been identified as part of the bird's diet in North America.

They Deserve Better

Nighthawks and nightjars (for their “night-jarring” sounds) belong to the Family Caprimulgidae which is a literal translation of the Latin for “goatsuckers”, a term commonly applied to these birds in North

America. No one knows for certain where this term originated, but it is thought that Europeans actually believed that this group of birds suckled goats at night. In all likelihood what they saw were European Nightjars hawking insects stirred up by livestock.

Not a Songster

There is one thing the Common Nighthawk cannot do, and that is burst into song. Its vocal repertoire is restricted to a simple nasal *peent* or *beernt*. But as Robert S. Lemmon writes in *Our Amazing Birds ...* “it is extraordinarily proud of that call, judging by its frequent repetition as the bird hawks erratically about the sky in its incessant search for food”.

People Caring

At Woss, near the northern end of Vancouver Island, a female nighthawk decided the best place to lay her eggs was in the middle of an active gravel logging road. Wayne Matkoski found her incubating on 29 June 1993 and immediately notified the logging company. The road was blocked off until the young were gone!

Hawking the Web

The Common Nighthawk (Figure 33 and 39) has not received as much attention and support from governments, industry, conservation groups,



Figure 33. In British Columbia, the Common Nighthawk is of conservation concern as numbers appear to be decreasing locally, especially in urban environments, for both migrating and breeding birds. Riondel, BC. 24 August 2005 (Jakob Dulisse).

and researchers as other species of birds in North America. The rising general concern about declines in numbers is creating a ripple of interest that will soon manifest itself into incorporating the Common Nighthawk into conservation and management plans throughout the continent.

Additional information on the web that may be useful to British Columbians concerned about the Common Nighthawk can be found at:

Biodiversity Centre for Wildlife Studies
(www.wildlifebc.org)

Dr. R. Mark Brigham, University of Regina
(www.uregina.ca/biology/faculty/brigham/Brigham.html)

Committee on the Status of Endangered Wildlife in Canada (COSEWIC)
(www.cosewic.gc.ca/eng/sct5/index_e.cfm)

Project Nighthawk
(<http://members.localnet.com/~risingerSuAsCo>)

Nashua Rivers Nighthawk Survey
(<http://borobirding.net/nighthawks>)

Patuxent Wildlife Research Centre
(<http://bna.birds.cornell.edu/Bna/account/CommonNighthawk>) - Paid account required

Catherine J. Flick
(<http://w3.gorge.net/stewart/nighthawks.htm>)

Acknowledgements - Your Data at Work

The Common Nighthawk is a familiar species that is easy to identify by sight and sound. Although it is most active in the twilight hours, naturalists and biologists regularly record its presence, especially in the spring. We are grateful to the following individuals, and those deceased (*), who trusted us with their databases, compiled personal records for spring arrival and autumn departure dates for their area, or had their notes organized so data could be added to our electronic databases quickly: Errol Anderson, William J. Anderson, Jim Andrews, Cathy

Antoniuzzi, Vicky Atkins, Janice E. Arndt, Avery Bartels, *Derek Beacham, Alice Beals, Dorothy Beetstra, Barbara Begg, James F. Bendell, Jennifer Bergen, Ed Beynon, Maj Birch, Janet Bishop, Myrna Blake, Peter F. Blokker, Rinchen Boardman, J. Boone, Jack Bowling, *Dr. Kenneth C. Boyce, Jan Bradshaw, R. Mark Brigham, British Columbia Fish and Wildlife Branch (Cranbrook and Kamloops), J. Boardwell, David Bostock, Doug Brown, Quentin Brown, Leslie Buchanan, Corey G. Bunnell, Fred L. Bunnell, Clyde H. Burton, *Elmer Callin, Eileen C. Campbell, Jim Campbell, Lucile Campbell, Mildred W. Campbell, *Robert L. Campbell, R. Wayne Campbell, Peter Candido, Hazel Cannings, Cindy Cartwright, Chris Charlesworth, Aldo Cogrossi, *John Comer, Cyril Colonel, Douglas Cooper, *John K. Cooper, Ray Coupe, Ed and Monica Dahl, Milo D'Angeles, *A. R. Davidson (Figure 34), Eleanor Davidson, Gary S. Davidson, Clint Davy,



Figure 34. A.R. Davidson (“Davy”) co-ordinated birding activities in the Greater Victoria area from the 1950s through the 1970s and provided much of the information on the status of the Common Nighthawk during that period. Victoria, BC. 17 October 1980 (Oak Bay Star).

John Deal, *Gwen deCamp, Dennis A. Demarchi, Dorothy Diduck, Adrian Dorst, Douglas D. Dow, Rudolf H. Drent, Ducks Unlimited Canada, Jakob Dulisse, Linda Durrell, Rainer Ebel, Anne Edward, Barry Edwards, Peter W. Elliott, *Maurice Ellison, Anthony J. Erskine, Myles Falconer, Anthea Farr, Tyler Flockhart, Scott Forbes, Trevor Forder, John W. Foster, D. Lorne Frost, J. Ginns, *J. E. Victor and Margaret E. Goodwill, Robert S. Ferguson, Trevor Forder, Simon Franklin, Joe Gardner, *C. B. Garrett, Jim H. Ginns, Tom Godin, Bill Heybroek, Hilary Gordon, Orville Gordon, Ted Goshulak, Pierre Goulet, *James Grant, Al and Jude Grass, Gary Grayson, *Charles deBlois Green, Tony Greenfield, Christian W. Gronau, Jim Groome, *Charles J. Guiguet, Frank E. Guillon, John Gwilliam, Chris Hamilton, Larry Halverson, A. M. Hames, Kevin Hannah, M. Hanry, Willie Haras, Chris Hatley, Ruth E. Hellevang, Joyce Henderson, Jerry Herzig (Figure 35), Werner H. and Hildegard E. Hesse, Edward Hillary, Mark Hobson, *Martin W. Holdum, Dennis Horwood, Richard R. Howie, *William M. Hughes, *Doug and Marian Innes, John Ireland, Christine Jamieson, Jukka Jantunen, Barry Janyk, Pat Janzen, Fran Johnson, Marlene Johnston, Pierre Johnstone, Edgar T. Jones, *J. E. H. Kelso, Bruce Kennedy, Ian Kennedy, Ken Kennedy, David King, Frances King, Joan King, Sandra Kinsey, Helen Knight, Cathy Koot, W. Douglas Kragh, Nancy Krueger, Vi and John Lambie, Arthur N. Lance, Laird Law, Barbara Leckie, Douglas A. Leighton, Gary Lelliott, *Enid K. Lemon, Pat Levitt, David Low, Betty Lunam, *Robert E. Luscher, *Walter S. Maguire, Diana Maloff, Wayne Matkoski, Ron Mayo, Ralph McDonald, Maryann McDonough, A. S. McGill, Glen and Isabel McInnes, Ed McMackin, Carol McIntyre, Martin K. McNicholl, *Arthur L. Meugens, Ken P. Morrison, *Allister Muir, *James A. Munro, Eve J. Neale, Ivar Nygaard-Petersen, Mark Nyhof, Peter Olesky, John Parish, D. Parsons, *W. Adrian B. Paul, *Theed Pearse, Vi Peters, Mark Phinney, Tim Pirk, Rosamond Pojar, Ilya Povalyaev, David Powell, *Douglas Powell, Gerald A. Powers, G. Allen and Helen Poynter, Michael I. and Joanna Preston, Paul Prior, Tammy Proctor, Larry Prosser, Sandy Proulx, *Kenneth Racey, Marilyn Rack, Jennifer Reid, Don and Tanya Reese, Dirk Rinehart-Pidcock, Ralph W. Ritcey, Anna L. Roberts, Gina

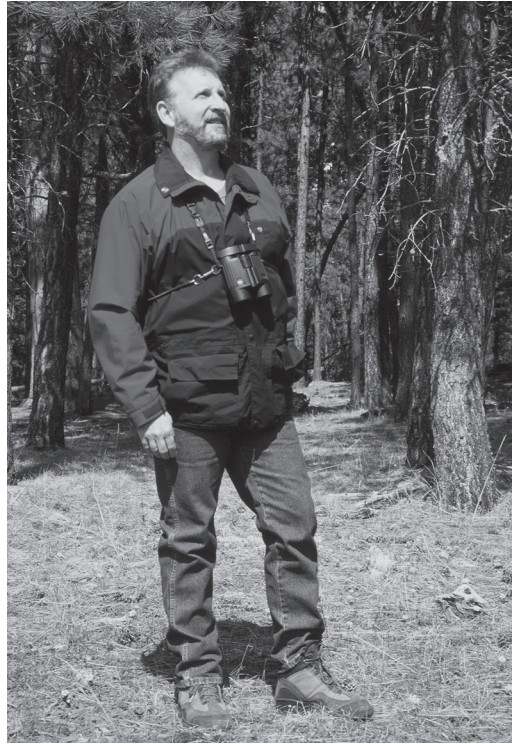


Figure 35. Jerry Herzig contributed greatly to our knowledge of the occurrence and breeding status of the Common Nighthawk in the Princeton area of the province. August Lake, BC. 13 April 1999 (R. Wayne Campbell).

Roberts, Leila G. Roberts, *Syd Roberts, Neil Robins, Robin D. Robinson, Steve H. Robinson, Wilma F. Robinson, Michael S. Rodway, Manfred Roschitz, Amélie Rosseau, Craig S. Runyan, Don Ryder, Glenn R. Ryder, *John G. Sarles, Ron Satterfield, Carrie Saxifrage, John Saxon, Lorraine Scott, Don and Barbara Sedgwick, David C. Schutz, Walter Sharpe, Chris Siddle, *Frank M. Shillaker, Ed Silkens, Rose-Marie Silkens, George P. Sirk, Lorne Smith, Elsie L. and Glen Stanley, *J. Stainer, Iris Steigemann, David Stirling (Figure 36), *Jim Street, Gail Sullivan, Pat Swift, *T. L. Thacker, John Tschopp, Howard A. Telosky (see Figure 37), Jim Tuck, Linda M. Van Damme, Ben van Drimmelen, Ron Walker, Peter Ward, G. Ross Waters, Brad Watts, Rita Wege, T.



Figure 36. David Stirling birding in the Pantanal, Brazil. During his 48 years of birding in British Columbia, Dave has been an important source of information on the occurrence and changing status of the Common Nighthawk, especially along southeastern Vancouver Island.

Weiler, *Mildred V. White, Al and Irene Whitney, Karen L. Wiebe, P. Ray Williams, A. Wilson, Douglas Wilson, Jim Wisnia, Jul Wojnowski, John G. Woods, David Woolgar, Barbara Wright, Glen Wright, *J. Wynne, F. Don Young, Barry Zettergreen, Ellen Zimmerman, Ed Zolinski, and Fred C. Zwickel.

Population trend information for 44 localities in Table 4 were obtained from field notes and diaries in the personal library of Wayne Campbell and/or communication with Peter F. Blokker (*Vernon*), British Columbia Fish and Wildlife Branch (*Skookumchuck*), Clyde H. Burton (*Powell River*), R. Wayne Campbell (*Burnaby, Burnaby Lake, Dawson Creek, Deer Lake, Douglas Lake, Richter Pass, Rush Lake, Vancouver, and Victoria*), *John Comer (*Duncan and Cowichan Bay*), *A.R. Davidson (*Victoria*; see Figure 34), Gary S. Davidson (*Nakusp*), Milo D'Angeles (*Burnaby Lake*), John Deal (*Woss*), Ducks Unlimited Canada (*Bechers Prairie*), Linda Durrell (*Riske Creek*), Peter W. Elliott (*Cortes Island*), *Maurice Ellison (*Trail*), Trevor Forder (*Kelowna*), Joe Gardner (*Douglas Lake*), *J.E. Victor Goodwill (*Victoria*), *James Grant (*Vernon*), Jude and Al Grass (*Burnaby and*

Vancouver), *Charles deBlois Green (*Keremeos*), Tony Greenfield (*Sechelt and Sikanni Chief River*), Chris Hamilton (*Quesnel and Fraser Lake*), Werner H. and Hildegard E. Hesse (*Burnaby, Deer Lake, and Metchosin*), *Martin W. Holdom (*Crescent Beach*), Richard R. Howie (*Kamloops*), John Ireland (*Reifel Island*), Pat Janzen (*Clinton*), *Walter B. Johnstone (*Cranbrook*), Ken Kennedy (*Burnaby, Clinton, Deer Lake, and Richter Pass*), Sandra Kinsey (*Prince George*), W. Douglas Kragh (*Vancouver*), John and Vi Lambie (*Mackenzie*), Laird Law (*Prince George*), Wayne Matkoski (*Woss*), Douglas A. Leighton (*Lower Blaeberry valley*), David Low (*Kamloops*), Ralph McDonald (*Douglas Lake*), Carol McIntyre (*Kamloops*), Martin K. McNicholl (*Comox/Courtenay*), *Allister Muir (*Burnaby and Deer Lake*), Eve J. Neale (*Eagle Lake*), Peter Olesky (*Dease Lake*), D. Parsons (*Richter Pass*), *Theed Pearse (*Comox*), Mark Phinney (*Dawson Creek*), Gerald A.

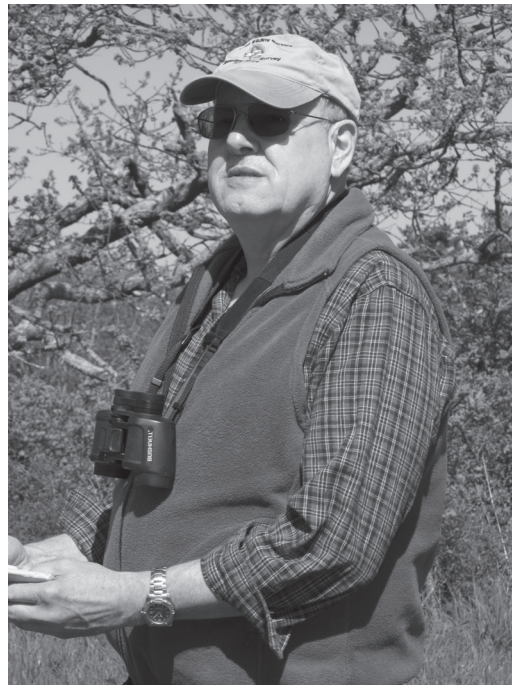


Figure 37. Trend information for the Common Nighthawk in the Campbell River area was well documented in the field notes of Howard A. Telosky. Victoria, BC. 24 April 2006 (Michael I. Preston).

Powers (*Abbotsford*), *Kenneth Racey (*Alta Lake*), Marilyn Rack (*Prince George*), Don and Tanya Reese (*Rush Lake*), Jennifer Reid (*Kamloops*), Manfred Roschitz (*Quesnel*), Glenn R. Ryder (*Kelowna and Surrey*), Ron Satterfield (*Victoria*), Walter Sharpe (*Lac La Hache*), Chris Siddle (*Fort St. John and Vernon*), Ed Silkens (*Campbell River*), Rose-Marie Silkens (*Sayward*), George P. Sirk (*Cortes Island*), *J. Stainer (*Richter Pass*), David Stirling (*Victoria*; see Figure 36), Howard A. Telosky (*Campbell River*; Figure 37), Linda M. Van Damme (*Creston valley*), Ron Walker (*Christina Lake*), Wayne C. Weber (*Vancouver*), Karen L. Wiebe (*Bechers Prairie*), P. Ray Williams (*Langford and Victoria*), and *J. Wynne (*Enderby*).

About 8,100 additional records were received from active birders and naturalists who submitted their incidental sightings to the Wildlife Data Centre.

Martin McNicholl's research on the "Comox Burn" was supported by many observers who found nests, led McNicholl to them, or helped him record data and/or collected data during periods when he was absent. These included Helen M. Amerongen, James F. Bendell, Pamella Gibb, Georgia Goth, Ken P. Hansen, Patricia G. Haugh, Margaret Hennessey, Jon Kristensen, Kathy Martin, Robert J. McFetridge, Bill McKay, Gary F. Searing, Judith Smith, Kirby Smith, Pat Valestin, John D. Vanada, Marie Vanada, Lynda Watson, Norman A. Williams, Reto Zach, Donn Zueff, Sigrid L. Zueff, Fred C. Zwickel, and Jeff G. Zwickel as well as several canine companions.

Michael I. Preston prepared the figures and tables, Mark Nyhof provided the drawing of the nighthawk in flight (see Figure 4) and David F. Fraser reviewed the account for content and accuracy.

Thanks to everyone!

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Figure 38. Capturing Common Nighthawks in mist nets set across rivers has been part of the research carried out along the Okanagan River, near Okanagan Falls Park, BC, by Dr. Mark Brigham (in the river) from the University of Regina, SK. Summer 1986 (Anne Brigham).

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About the Authors

Martin's early memories of nighthawks are of watching one on a downtown Winnipeg roof while in his dentist's chair; an incubating female attempting to lure him and his relatives from her nest or young while the McNicholls were picking blueberries at their Ingolf, Ontario cottage; and large numbers foraging over Highway 1 for several years in late summer after a major forest fire near Richer, Manitoba.

His contributions to co-operative bird studies

began with reports of migration arrival dates for the late Harold Mossop's bird column, *Chickadee Notes* in the *Winnipeg Free Press* and reports on nests for the Prairie Nest Records Scheme. His M.Sc. studies were on breeding biology and ecology of Forster's Terns in Manitoba's Delta Marsh in the late 1960s, and his Ph.D. study was on the "Comox Burn" area mentioned in this report. He has conducted studies of birds in all three prairie provinces, British Columbia, Ontario, Prince Edward Island, Yukon Territory, Cuba, and Washington. Martin has served on boards of several conservation, naturalist, and ornithological organizations, including the Edmonton Natural History Club (President), Langley Field Naturalists, Ontario Bird Banding Association, Western Bird Banding Association, and as Chair of the Canadian Section of the International Council for Bird Preservation (precursor to Birdlife International). He was editor of *British Columbia Birds* for nine years and compiled abstracts of Recent Literature for *North American Bird Bander* for 25 years, combined with editing their book reviews for 20 of those years. He has published numerous articles, books, book chapters, notes, and papers and hopes to live long enough to complete the 250-300 that remain in preparation.

Mark is a professor of Biology at the University of Regina where he has been employed since 1990. His research is focused on the behaviour, ecology and thermal physiology of bats and nocturnal birds. He first began studying caprimulgids with his Ph.D. work on nighthawks in the Okanagan valley in the mid-1980s. He has subsequently worked on Common Poorwills, Whip-poor-wills, Tawny Frogmouths, Australian Owlet-nightjars, and African Freckled nightjars. He is married with two children and, aside from work and family life, has been known to enjoy the occasional round of golf and a glass or two of good shiraz.

Janet is a graduate student at the University of Regina where she is studying Common Nighthawks in southern Saskatchewan. Her research is focused on habitat selection and torpor use. Other research interests include human-wildlife conflicts and landscape ecology. She is also an avid birder and amateur photographer.