WILDLIFE IN BRITISH COLUMBIA AT RISK

Purple Martin

This rare species is increasing in numbers due to nest-box programs

BRITISH COLUMBIA
Ministry of Environment, Lands and Parks

Why are Purple Martins at risk?

Never abundant in the province, British Columbia's Purple Martin now maintains a precarious toehold as a breeding species here. In the past, natural nesting sites were in snags near fresh or salt water, although the majority of nesting records have always been from artificial sites. Purple Martins adapted to changing circumstances by adopting specialised nesting niches in harbour pilings, as well as in crevices in buildings. However, even the pilings are disappearing, rotting away and falling into the water of the estuaries and bays where they are found. Purple Martins no longer nest in buildings, either, having probably been ousted by introduced European Starlings and House Sparrows, which compete for suitable cavities. Without human intervention, particularly the provision of artificial nest-boxes, this species would probably have been lost to British Columbia some time ago. Indeed, by 1994, all known nesting pairs in the province were using artificial nest-boxes, mainly erected on pilings.

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Purple Martins are at the northwestern limit of their range in British Columbia. Their low numbers, together with the fact that conditions here are marginal for the species (this is usually the case at the extremes of distribution), means that they are particularly susceptible to natural calamities. Just three days of cool (less than 6°C) maximum temperatures or heavy rain, for example, can mean the onset of nestling mortality from starvation. This happens because the low temperatures prevent insects from flying, with the result that parent birds cannot forage successfully.

A natural consequence of "living on the edge" is that the number of martins tends to fluctuate, sometimes dramatically, since an event that claims even a few victims has a significant effect on such a small population. Furthermore, population changes in Washington will likely have a significant effect in British Columbia: increases there are likely to cause a spill-over in our province. The increased pressure put on the species by loss of historic nest sites could conceivably combine with such fluctuations to extirpate the Purple Martin from British Columbia altogether.

Insecticides take their toll of Purple Martins, particularly in their wintering areas in South America. In a single incident in Brazil, reported in 1989, 50 000 Purple Martins were killed.

What is their status?

The British Columbia population of Purple Martins has probably never numbered more than a few hundred birds. Their original distribution included the lower Fraser River lowlands, downtown Vancouver and the east side of Vancouver Island from Campbell River to Victoria. The decline of the species in the 1940s seems to have coincided with the establishment of the European Starling and with the removal of old pilings from harbours. By 1949, the species was breeding only on Vancouver Island. Purple Martins returned to the Lower Mainland in 1994, in response to a nest-box programme at Maplewood Flats in North Vancouver. The total number of known active martin nests in British Columbia in 1995 was 55. All but two pairs nested on southern Vancouver Island. All were in artificial nest-boxes.

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The population is currently expanding from a low of just a few pairs in the early 1980s. A nest-box program started in the Cowichan Bay estuary at this time probably rescued this species from extirpation in British Columbia. There are now active Purple Martin sites on Vancouver Island at the Esquimalt Dockyards, Victoria Harbour, the Sooke Basin, the Cowichan estuary, Ladysmith Harbour, and the Nanaimo estuary; at Newcastle Island Provincial Marine Park; and on the Lower Mainland at Maplewood Flats and nearby Rocky Point. The present population is still less than 75 pairs. All but one pair are using artificial boxes (that pair used an old Northern Flicker hole in a piling).

In recognition of its perilous status, the Purple Martin was assigned to the British Columbia Red List. Red-listed wildlife species are candidates for designation as Endangered or Threatened under the British Columbia *Wildlife Act*. The Purple Martin is protected from killing or collecting by provisions in the *Wildlife Act* and by the federal *Migratory Bird Convention Act*.

What do they look like?

Purple Martins (*Progne subis*) are the largest swallows in North America, with a body length of about 17 to 20 centimetres – about half as large again as other swallows in the region.

Adult males are an iridescent purple-black. Females and immature birds are dark above and pale below. Patches of black appear on immature males by mid-summer. Young males returning from their first migration are coloured like females, but with irregular splotches of dark purple-black.

Adult males could be confused with black swifts, which have narrower wings. The bend of the swift's wing is very close to the body, giving its wings a sickle-shaped appearance, while the bend of the Purple Martin's wing is clearly visible. There is also a superficial resemblance to the European Starling. Female martins could be mistaken for other species of swallows, but are much larger. Martins are extremely vocal. Their distinctive calls make them easy to locatewhen in flight, even at a considerable distance.

Purple Martins are the largest swallows in North America.

What makes them unique?

The Purple Martin holds a special place in the history of wildlife con servation in North America. Long reputed to be an efficient predator of insect pests, this large, dark swallow has for centuries been encouraged by native people in the American Southwest, and later by wise farmers east of the Rockies, particularly in New England. Highly tolerant of human presence, the eastern race of the Purple Martin readily accepts colonial nesting boxes provided for it.

During the backlash against the excessive use of insecticides precipitated by Rachel Carson's "Silent Spring" in the 1960s, the Purple Martin's prowess as a natural insect control agent impinged upon the national consciousness in the United States. "Two thousand mosquitoes a day!" (derived from a contemporary estimate) was the battle-cry of the new conservation movement, and soon communities across the continent were installing nest-boxes by the score. Although these claims are now met with considerable scepticism, the martin's insect-eating habits are not in doubt. The Purple Martin still benefits from the legacy of its sixties popularity, to the extent that there are at present an estimated one million martin nest-boxes in North America. The benefit now works both ways: the Purple Martin has become largely dependent on artificial nest-boxes, so our relationship with the bird is now a symbiotic one.

Here in British Columbia, we are not likely to reap the full reputed benefits of the Purple Martin's prodigious appetite, as the western race nests in lower-density colonies than its eastern relatives. Furthermore, British Columbia represents the present northwestern edge of the Purple Martin's range. We can, however, have a significant positive impact on the species in this province.

The Purple Martin is unique in one other unusual way: it is the only single

wildlife species to have a magazine (*Purple Martin Update*) devoted entirely to its welfare.

How do they reproduce?

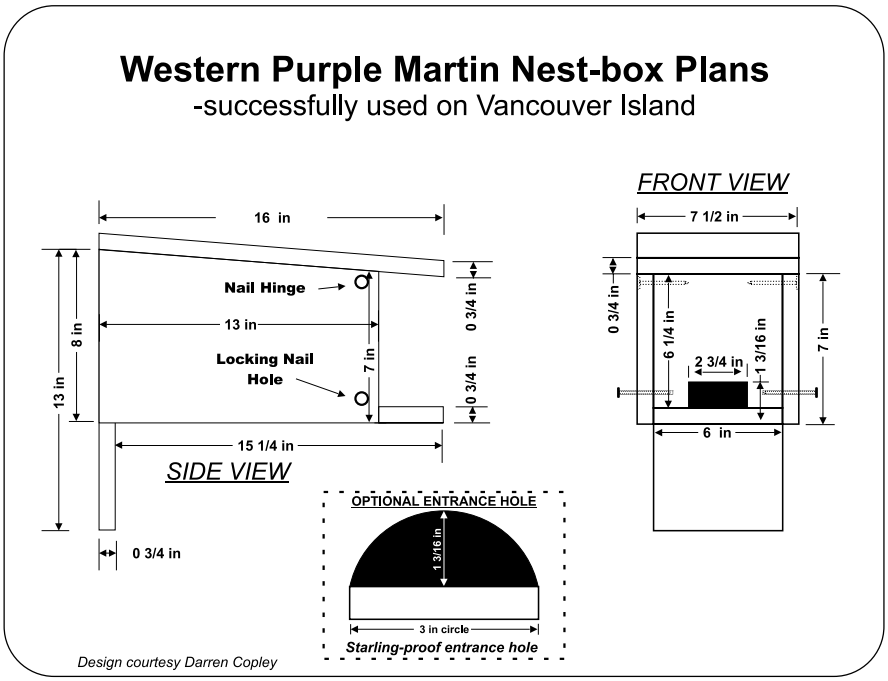
Purple Martins are usually colonial breeders. The eastern race often nests in apartment-type nest-boxes, while the western subspecies, although preferring to nest separately, often selects nest sites just a few metres distant from its neigbours.

Adult males arrive back from migration first, often returning to the previous year's nest sites. These males sing a special early morning "dawn song" while in flight high above their sites. This song attracts young males, which claim nearby nest sites. This behaviour is very beneficial to the older males; as the breeding season progresses, they are able to mate with the females that pair with the younger males, increasing the number of offspring they can produce. They don't have to help with rearing them, as the young males raise them as their own. There is also the benefit of ensuring that the colony is well-populated, so that the risk from predators is diminished. It has been found that the older males take the best and safest sites before the younger ones arrive back from migration.

Martins flock together before migrating to South America for the winter.

Colony size is very variable, from just one pair to many dozens of pairs. The largest colony currently active in British Columbia consists of under 30 active nests. The female alone incubates the eggs for 15 to 19 days, although an incubation period of 21 days has been reported in Victoria. Adult birds bring fresh leaves and cedar twigs into the nest cavity or box from time to time. The purpose of this is not known; perhaps they help to reduce nest parasites. The fact that willow and cottonwood leaves – known for their insecticidal properties – are often chosen helps to support this idea.

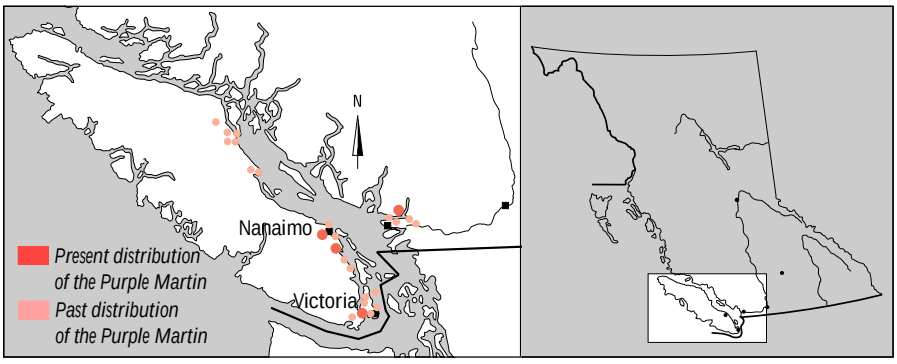
In British Columbia, birds can remain in the nest into August or even September. In September martins flock together before migrating to South America for the winter. While the largest fall flocks recorded in British Columbia consist of only about 100 birds, further south in the Seattle area, where the species is more common, flocks of 14 000 have been recorded.



What do they eat?

A bulletin from the US National Museum probably best describes the diet of the Purple Martin in this elegantly redundant fashion: "The whole diet of the Purple Martin can be fully covered by one word – insects! When that is said, all is said, for that is what the bird subsists upon and nothing else."

There have been no studies of the diet of Purple Martin in British Columbia, but all observations tend to confirm the above statement. Nesting martins appear to make extensive use of dragonflies in feeding young in southern British Columbia. Martins will forage many kilometres from the nest, often flying high and calling loudly as they feed. Foraging takes place from 30 to 200 metres above the ground.



Where do they live?

The Purple Martin breeds across North America from southwestern British Columbia, across Alberta and central Saskatchewan east to New Brunswick, and south to Florida, southern Texas and the highlands of Mexico. The western race breeds down the entire western seaboard and into Mexico, while the eastern raceoccupies the eastern half of the continent as far west as Alberta. The species is absent from most of the dry western portions of the continent away from the coast. It is highly migratory and winters in South America, east of the Andes from Columbia to northern Bolivia and southeastern Brazil. Wintering birds can concentrate in large numbers, one wintering roost site consisting of 5000 birds in Brazil. The exact winter range of the western subspecies is not known, although one banding record came from far southern Brazil, at the southern edge of the wintering range of the eastern race.

The eastern race has been reported a few times in extreme northeastern British Columbia. There are no records of breeding in the region, despite range maps in most field guides indicating that the species breeds in British Columbia's Peace River area. However, nesting occurs nearby in Alberta, and naturalists are encouraged to watch for this species.

Throughout much of its range, the Purple Martin will take up residence wherever suitable habitat is present and nest-boxes are provided, as long as the nest-boxes are not too close to trees. In British Columbia, it almost always selects sites near or over open water.

PURPLE MARTIN NEST-BOXES ON PILINGS IN COWICHAN BAY.
R. Wayne Campbell photo

What can we do?

The Purple Martin responds well to nest-box programs. In Washington and Oregon, volunteers have rescued the population from perilously low numbers by using nest-boxes and nesting gourds. In British Columbia, placing nest-boxes near to known colonies should continue to increase numbers locally. The addition of new boxes in areas of historical distribution may lead to recolonisation, as has been the case in North Vancouver. Individuals and groups interested in helping Purple Martins in British Columbia are encouraged to build and erect nest-boxes along the waterfront on southern and eastern Vancouver Island and in the lower Mainland. Boxes should be constructed of cedar, and maintained regularly. A cedar nest-box should have a life of about ten years. Locations should be chosen that allow easy access for maintenance. Pilings along docks and piers would be ideal locations. Recent successful nest-box programs suggest that up to five nest-boxes per piling with a minimum of 25 boxes per site have the best chance of success for establishment of a new colony. Permission from and co-operation with marina owners and operators, local boaters and yacht clubs should be sought.

In urban areas it may be necessary to keep nest-box openings blocked until Purple Martins return to avoid the problem of House Sparrows and European Starlings using the boxes and out-competing the martins. In some areas martin house owners have had to control House Sparrow and starling numbers in order to maintain the martins.

To date, the commercially available "apartment-style" nest-boxes used in eastern North America have not been used by Purple Martins in British Columbia. Gourd-style martin houses have not been tested here.

The British Columbia Conservation Data Centre needs all information on Purple Martin sightings, accompanied by as much information as possible.

Please contact:
BC Conservation Data Centre,
BC Environment
Ministry of Environment,
Lands and Parks
Parliament Buildings
Victoria, British Columbia V8V 1X4.

People that put up nest-boxes are encouraged to monitor the boxes for Purple Martins and other species. Don't forget to send a copy of your information to the British Columbia Conservation Data Centre!

PURPLE MARTINS OFTEN PERCH ON NEST-BOX VERANDAS.
David F. Fraser photo

ADULT PURPLE MARTIN ON NEST-BOX.
David F. Fraser photo

FEMALE PURPLE MARTINS ARE DARK ABOVE AND PALE BELOW.
David F. Fraser photo

FOR MORE INFORMATION ON THE PURPLE MARTIN, CONTACT:

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