

Management

Historically, rock and willow ptarmigan are managed together, as their ranges often overlap and it is difficult for hunters to distinguish between the two. Ptarmigan abundance is generally higher in Labrador, where most harvest occurs in late winter. Harvest is concentrated in the southern portion of Labrador and is focused on birds, typically juveniles and females, in search of suitable winter habitat. The Labrador season extends late into winter to provide hunting opportunities that would otherwise not exist before freeze up.

On the Island of Newfoundland, game birds do not migrate far from their breeding grounds, where hunting is typically concentrated. Island seasons have been adjusted to minimize impact on potential breeding pairs.

Historical ptarmigan management practices on the Island of Newfoundland cover four main management zones: **Avalon-Swift Current, Burin Peninsula, Gaff Topsails** and **Remainder of the Island**. These zones were established to manage harvest via season length in areas of varying hunter density and access.

Daily bag and field possession limits for ptarmigan have also been used to manage harvests. Most of the Island has a daily bag limit of 12 and a field possession limit of 24 birds.



In the Avalon Peninsula, Burin Peninsula, and Gaff Topsails zones, the daily and possession limits are 6 and 12 birds respectively, where population

densities have been observed to be lower or hunting pressure is less evenly distributed over the regions. A daily bag limit of 25 birds and a field possession limit of 50 birds are in effect in Labrador.

Monitoring & Surveys

Ptarmigan populations are managed by gathering data on species health and distribution, and by monitoring harvest trends through license returns, field surveys and wing collections.

License Sales & Returns

Data estimating ptarmigan harvests exists from 1947 onward, but only in 1965 were provincial hunters asked to send in license returns.

These returns enable hunters to provide information such as the number of days spent hunting, the number of ptarmigan harvested, and whether ptarmigan populations appear, in each hunter's opinion, to be stable, increasing or decreasing from the previous year. Periodic questionnaires have also been used to assess hunter opinions on specific issues, but the Wildlife Division relies heavily on licence returns backed up by monitoring surveys to assess ptarmigan management strategies and existing policies.

Return information is essential to management efforts and can only be obtained through hunter cooperation. As a whole, returns have been shown to provide an accurate representation of population trends in abundance provincewide.

Field Surveys

It is difficult to estimate ptarmigan population densities across a landbase as large as Newfoundland and Labrador. Long-term monitoring for ptarmigan is completed by localized annual spring and fall field surveys conducted on the Avalon Peninsula, Gaff Topsails, and LaPoile Highlands. Both spring and fall surveys take place over measured blocks of ptarmigan habitat in each site. The blocks are walked by trained observers with an electronic caller in spring, or with hunting dogs that range across the area and flush birds in fall. Birds flushed in spring are assumed to be part of a breeding pair with coveys of primarily juvenile birds in the fall.

These surveys are vital to reinforcing what license returns indicate on an annual basis about trends in ptarmigan populations.



An additional component of ptarmigan monitoring involves the collection of ptarmigan wing-tips from hunters. Hunters are asked to volunteer the right wing of each harvested bird for analysis. Wings allow a determination of the ratio of adults to juveniles in the population, a measure of productivity.



Top: adult ptarmigan wing.
Below: juvenile ptarmigan wing.



Hunters can distinguish adults from juveniles in the field using the criterion that adults have the same amount or less dark pigment on the ninth primary compared to the eighth. Juveniles have more pigment on primary 9 than primary 8.

If you would like to participate in the wing collection program, please contact the Provincial Small Game Management Biologist for information on how to participate.

For more information:

Wildlife Division
PO Box 2007
117 Riverside Drive
Corner Brook, NL
A2H 7S1

Tel: (709) 637-2025
Fax: (709) 637-2032

Website:
www.gov.nl.ca

Ptarmigan

in Newfoundland & Labrador

Biology, Management & Harvest Strategies



Department of Environment & Conservation

Wildlife Division

Newfoundland
Labrador

Ptarmigan: NL's Prized Upland Game Bird

Willow ptarmigan (Lagopus lagopus alleni) and rock ptarmigan (Lagopus mutus welchi) are members of the grouse subfamily (Tetraonidae). They are adapted to breed on the extensive heathlands and subalpine tundra of Newfoundland and Labrador. On the island, these two species are unique in that they are at the most southerly limit of their breeding ranges in North America, and both are classified as separate subspecies on insular Newfoundland. Breeding densities of willow ptarmigan on the Island are extremely low compared to other areas where this species is studied.



In summer ptarmigan feed on green shoots, buds, flowers, berries and insects. Common plant associations include partridgeberry, crowberry, cranberry and blueberry. In winter they will switch to twigs, leaves and buds of willows, birch, alder and blueberry.

Description

Rock ptarmigan are generally smaller than willow ptarmigan, with a relatively smaller bill. In the field in summer, an adult willow ptarmigan can be distinguished from rock ptarmigan by its plumage, which is reddish-brown compared to the greyish cast of the "rocker." In winter, distinction is more difficult. Both species are white, but the male rock ptarmigan can usually be detected by a black loreal streak running from the bill to a point just behind the eye, which is absent in willow ptarmigan. A ptarmigan's wings are white all year. Its fan-shaped tail is black, usually folded, and inconspicuous during summer and early fall, except during flight.



Top photo: Willow ptarmigan (left), rock ptarmigan (right) in fall. Bottom photo: Rock ptarmigan pair (female left, male right) in spring.



Life History

Ptarmigan on the Island of Newfoundland are considered the most southerly population of these arctic birds in North America.

In Newfoundland and Labrador, ptarmigan begin breeding in late April or early May. Willow ptarmigan have a clutch size of 7-10 eggs, with numbers on the island averaging on the higher side of that range. Rock ptarmigan are known to lay between six to nine brown/yellowish-spotted eggs. Some females will re-nest after failed first attempts, but this appears far more common with willows. Females breed after their first year, and generally every year thereafter, living up to a maximum of eight or nine years.

Chicks of both species emerge after an incubation period of 20 to 22 days, and are almost immediately capable of travel with the mother in search of food. Fledging, or limited flight, occurs within 12 days as natal down is quickly replaced by contour and wing feathers. To the casual observer, chicks are indistinguishable in size and general appearance from adults in late September.

Home Range and Food Habits

Insular Newfoundland is approximately 56% boreal forest, 24% wetlands/open water and 20% barrens - the largest tract of barren on the North American continent, south of the Canadian tundra. In Newfoundland, willow ptarmigan are found primarily on these barrens in open habitats associated with blueberries and crowberries among low conifers, and marshes interspersed with heath vegetation on dry ground.

Rock ptarmigan are found primarily within high alpine, exposed rocky regions of the province and at altitudes often above the tree-line. Currently, rocker populations are believed to be stable in alpine regions of Labrador and along the south coast of Newfoundland from Cape Ray to Fortune Bay, in the Long Range Mountains of the west coast, and on the highest plateaus of the interior uplands. In many cases, both ptarmigan species ranges overlap, and are hunted as one species. Little is known about rock ptarmigan movements, but willows are known to move many kilometers towards winter cover or to meet breeding requirements, especially in Labrador. The willow ptarmigan's ability to travel long distances is thought to be one of the key factors in maintaining stable populations in areas where hunting pressure is heavy.

Little is known about the productivity of rock ptarmigan in Newfoundland & Labrador because of the extreme difficulty in locating a rocker's nest.

Population Dynamics

Throughout North America, willow ptarmigan and rock ptarmigan tend to cycle in abundance, with numbers peaking and declining over 7-10 year periods. Ptarmigan population cycles in this province and in other parts of North America generally coincide with snowshoe hare cycles. While hatching success is typically high, up to one third of chicks can be killed in the first three weeks of hatching by predators including fox, lynx, coyotes, goshawks, northern harriers, great horned owls, crows and gulls. Adult mortality caused by predators and natural causes is also high in winter.



Photos: male willow ptarmigan, rock and willow pair, winter rock pair, rock ptarmigan nest and eggs, Mike McGrath; blueberries, John Maunder.