

# Bicknell's Thrush

## *Catharus bicknelli*

The Bicknell's thrush is a migratory songbird that summers in the northeastern U.S. and southeast Canada and winters in the Greater Antilles. This smallest member of the robin family is an extreme habitat specialist, nesting primarily in stunted montane spruce-fir forests, found at or near the highest elevations of mountains, coastal areas in Atlantic Canada, and in some lower elevation working forests. Conservation organizations, government agencies, the forest-products industry, and academia throughout the species' range are working to conserve this species.

### Characteristics

The Bicknell's thrush is about six inches in length and weighs about an ounce. It is characterized by its light olive-brown upper parts, white (and sometimes slightly yellow-tinted) belly and spotted breast, with some chestnut coloration on its tail and wings. Outside of breeding, males and females are only distinguishable by the male's larger size.

The Bicknell's thrush was once believed to be a subspecies of the gray-cheeked thrush (*Catharus minimus*), which it closely resembles. However, due to differences between the thrushes in behavior, song, habitat, distribution, morphology and genetics, ornithologists determined in 1995 that Bicknell's thrush is its own species.

### Life Cycle

The Bicknell's thrush currently breeds in subalpine forests, which are composed of stunted fir and spruce thickets, in Maine, New Hampshire, New York, Vermont, and southeastern Canada. By early November, most Bicknell's thrushes have migrated and established winter territories in the broadleaf forests of Cuba, Puerto Rico, Jamaica, and Hispaniola (which

includes Haiti and the Dominican Republic). Here they can be found throughout middle and high-elevation thickly structured habitat sites.

By the end of May, both males and females have returned to their breeding grounds in the northeast. Males typically return several days earlier than females, and breeding begins upon the females' arrival.

The Bicknell's thrush begins breeding at about one year of age and is known to have a highly unusual mating system. The mating system, termed "female-defense polyandry," is commonly exhibited by the Bicknell's thrush and Smith's longspur (*Calcarius pictus*). Females mate with more than one male per breeding season, ensuring multiple males for feeding and protection of the young. More than one male cares for the mixed paternity nestlings.

This bird has highly specific nesting habits, preferring montane fir and spruce forests, usually in recently disturbed areas characterized by a dense understory, a low canopy, and an abundance of snags, shrubs, moss, stumps and deadfall for desirable shelter and nesting areas. Nests are constructed with twigs and are usually dense and cup shaped, with a lining of moss. Clutch sizes consist of around three to four bluish green eggs with light brown speckling.

### Food

On its high elevation summer range, the Bicknell's thrush is primarily a ground forager, eating mostly insects, including butterflies, ants, bees, cicadas, spiders and larval moths. They may also feed on fruit, such as bunchberries, blueberries and wild grapes. Small fruits of similar size compose a great proportion of this thrush's winter and migration diet.



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Nesting females often eat snails, which are believed to provide much-needed calcium for strong egg production.

#### Status

The Bicknell's thrush has been identified as a high conservation priority within the international bird conservation community. The best available global population estimate of Bicknell's thrush is approximately 97,358 to 139,477 individuals. Although the methods vary, the best available data made up of breeding population estimates from point counts, habitat modeling, other abundance data, and one dispersal study suggest the species' abundance has been undergoing a long-term declining trend.

However, a 2017 review of the best available scientific data suggests that the songbird is likely to continue to occupy most of its historical range and will have access to enough habitat for populations to persist through the foreseeable future. Therefore, the Service has determined that the Bicknell's thrush does not meet the statutory definition of a threatened or an endangered species and does not warrant protection under the Endangered Species Act. Regardless of federal status, the agency is dedicated to ongoing conservation efforts for the Bicknell's thrush and the species is still protected under the Migratory Bird Treaty Act.

#### Threats

The effects of climate change may be a threat to the Bicknell's thrush, as

temperature and precipitation patterns may result in shifting tree species over time. This may cause ripple effects to the species' range and enhance habitat characteristics that are more favorable for the species' nest predators (primarily red squirrels) and other bird competitors (Swainson's thrush, *Catharus ustulatus*).

However, given the complexity of microhabitat parameters that influence overall forest condition and the uncertainty associated with longer term climate change models, it's unclear how much suitable habitat may remain throughout the species' breeding and wintering range over time and how the Bicknell's thrush would respond to any future changes.

Ongoing threats to the species include habitat loss from incompatible forestry practices; energy and recreational developments in some areas of the breeding grounds; and habitat loss from subsistence farming and illegal logging on the wintering ground.

Biologists have not determined how the Bicknell's thrush may respond to potential changes in temperature and precipitation patterns. As a result of climate change, the spruce-fir habitat that currently exists as "islands" of suitable habitat that support breeding Bicknell's thrush may be substantially reduced, with the potential to be nearly eliminated, from the species' current range in the northeastern U.S. Their habitat might also decline in Canada by the end of this century, depending

on the amount of greenhouse gases emitted to the atmosphere, habitat type (i.e., low vs. high elevation), and forest harvest management strategies. On the wintering grounds, the consequences of climate change will likely include a drying of the Caribbean region and an associated decline in the wet montane habitats where most Bicknell's thrushes are found.

In the thrush's breeding habitat, red squirrels live and feed mainly on spruce and fir cones. Red squirrel populations are cyclical and dependent on the size of the cone crop, which can be highly variable from year to year. In years when red squirrels are abundant, predation of eggs and nestlings can be high.

In addition, researchers conducting studies on the wintering grounds in the Dominican Republic documented predation of adult Bicknell's thrush by introduced black and Norway rats. This predation is believed to occur while adults are night roosting.

#### Taking Action

Broad collaboration among conservation organizations, government agencies across countries and states, the forest-products industry and academia has fueled conservation planning for the species through the [International Bicknell's Thrush Conservation Group](#). The partnership, which includes the Service, has most recently focused on what is considered the most pressing threat to the species: the illegal clearing and burning of forests in its wintering grounds. Other areas of focus include surveying habitat in previously inaccessible areas of wintering grounds; managing and protecting existing habitat; monitoring the effects of climate change; and restoring degraded habitat.

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