



Moth ID Guide

A sampling of moths found in Nova Scotia



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Moth ID Guide

Introduction

There are seven hundred identified species of butterflies and moths that live in Nova Scotia. Over half of those are moths. (<https://www.butterfliesandmoths.org/region/nova-scotia>) As in other parts of the world there are, undoubtedly, many more species of moths that have yet to be identified. The following profiles offer a small sample of the diversity of moths that call Nova Scotia home.

Moths are important members of any ecosystem, whether for their pollination services or as food for other creatures such as bats, birds, amphibians and reptiles, and of course other insects.

Globally all insect populations are in decline. With the loss of insects, and specifically those that pollinate plants, scientists are raising the alarm of a catastrophic ecological and economic collapse. (<https://www.reuters.com/graphics/GLOBAL-ENVIRONMENT/INSECT-APOCALYPSE/egpbykdxjqv/>) All insects are threatened in similar ways, including loss of habitat, pesticides, introduction of invasive species of plants and animals, and light pollution.

Moths need our help! One of the most important ways of supporting moths is to learn more about who they are and what they require to thrive. This guide focuses on 10 species of moths who call Nova Scotia home, and identifies some of the plants that make up their food supply over the course of their entire life cycle. We can help protect moths and other pollinators by planting a variety of plants (especially native to Nova Scotia), that bloom at different times of year.

Additionally, planting **keystone species** of trees and shrubs such as native oaks and willows, and herbaceous plants like goldenrod and asters provide food and shelter for the larval stage of many moths.

Moth caterpillars are critically important in the **Food Web**. While many moth larva are plant generalist – meaning they are able to consume a number of different species of plants – some moth larva are plant specialists – meaning, they can only feed on one or two species of plants. If those plants are removed from an ecosystem, moths and the creatures that depend on moths as food, are also lost. (Doug Tallamy Natures Best Hope)

Climate Connections



Habitat Creation & Biodiversity

Adding pollinator plants to the garden provides food and shelter for important insects like bees, butterflies and moths.



Growing & Processing Food

Starting seeds is the first step in growing food in the garden. Learning to grow food is a resiliency skill and sharing food strengthens communities.



Soil Stewardship

By keeping soil moist and healthy, students learn the importance of caring for soil to grow food.

How to tell a moth and butterfly apart:

1. Most butterflies fly by day, while most moths fly at night—but there are exceptions!
2. Butterflies have clubbed antennae, while moths have feathered or comb-like antennae.
3. Butterflies usually rest with wings upright, while moths usually rest with wings flat—but there are exceptions!



White-Striped Black Moth

Trichodezia albovittata

The White-Striped Black moth is a day-flying moth in the family **Geometridae** (which means “earth measurer” – think Inchworm!). This tiny moth can be found from Alaska to Newfoundland and Labrador, and south to North Carolina and west to Northern California. They prefer moist woodland environments and forest edges where their food plants grow. They are larval host specialists of **Spotted Jewelweed** (*Impatiens capensis*).



Identification

The **White-Striped Black** moth can be identified by the following features:

- Wings **black with white bar** across forewing, narrowing and meeting terminal white wedge near inner margin. Hindwing fringe black, white toward outer angle. (<https://www.butterfliesandmoths.org/species/Trichodezia-albovittata>)
- Wingspan 2 – 2.5 cm.

Season

- In flight from **April until September**. (<https://www.butterfliesandmoths.org/species/Trichodezia-albovittata>)



Plant Relationships in Nova Scotia



Fireweed

Chamaenerion angustifolium



Tall Meadow Rue

Thalictrum dasycarpum



Spotted Jewelweed

Impatiens

Other Facts

- This moth has **very sensitive bat detectors** (ears), suggesting that it became day flying relatively recently.
- The light green caterpillar has a **distinctive black stripe** across the face and down the thorax. (restoringthelandscape.com)



Nessus Sphinx Moth

Amphion floridensis

The Nessus Sphinx moth is a member of the **Sphingidae** family of moths, also known as hawk or hummingbird moths. They are day and dusk flying moths that are sometimes mistaken for wasps. The Nessus Sphinx moth lives throughout eastern North America and can be found in a diverse range of habitats including forests, stream-sides and suburbs (likely for the abundance of nectar bearing flowers).

(butterfliesandmoths.org)



Identification

Nessus Sphinx moths can be identified by the following features:

- Large, stout, furry-looking moth with **greenish-brown coloration**.
- Pinkish-orange band on its forewing. Hind-wings are pinkish-brown with an outer yellow stripe.
- Abdomen has **two bold yellow stripes**.
- Wingspan **4 – 6 cm**. (greatlakesmoths.org)
- The adults' furry-looking bodies make them effective pollinators of the plants they visit for nectar.

Season

- Adults may be found from **April to July** (possibly later in their Northern range). In Nova Scotia there is only one brood per season.



Plant Relationships in Nova Scotia

Adults nectar on a variety of flowers including the naturalized moss phlox, lilac, and dandelions. Caterpillars feed on plants from the grape (**Vitis**) family and pepper (**Capsicum**) family.



Riverbank Grape

Vitis riparia



Moss phlox

Phlox subulata



Cayenne pepper

Capsicum annuum

Other Facts

- Caterpillars pupate in **shallow underground chambers**.
- Caterpillars have a **small horn on their rear end** that they use to frighten predators.
- Adult sphinx moths can fly up to **48 km per hour**.



Canadian Owlet Moth

Calyptra canadensis

The Canadian owlet moth is the only species of calyptra moth found in North America. Calyptra moths of Eurasia are also known as vampire moths, as the males sometimes suck blood from animals including humans. Fortunately, the Canadian owlet moth is not known to exhibit this vampire-like behaviour.



Identification

Canadian Owlet moths can be identified by the following features:

- **Brown colour.**
- Dark lines (veins) across wing that **resemble a dead leaf.**
- Clump of **hairs on the head.**
- Tent shaped wings when at rest.
- Wingspan of **33 – 40 mm.**

Season

- Adult Canadian Owlet moths are most commonly found from **June to September.**
- It is believed to overwinter as either eggs or as larvae. (GFM)



Plant Relationships in Nova Scotia

The host plant of the Canadian owlet moth caterpillar is the tall meadow-rue of which adult moths also play a role in pollinating. Research indicates that many species of **nocturnal** moths play a role in pollinating Nova Scotia **native** low bush blueberry.



Lowbush blueberry
Vaccinium angustifolium



Tall meadow-rue
Thalictrum pubescens

Other Facts

- Adults disguise themselves as **curled up dead leaves.**
- While Canada Owlet moths are not known to exhibit hematophagy (sucking blood), it is able to **"pierce the skin of fruit to drink the juices"**. (GFM)



Virginia Ctenucha Moth

Ctenucha virginica

The Virginia Ctenucha moth is the largest of the so-called “wasp” moths in North America and is **diurnal** (active during the day) and **nocturnal** (active at night). While often referred to as a wasp moth, it does not sting – this description only refers to its appearance. The Virginia Ctenucha can be found in all Canadian Provinces.



Identification

Virginia Ctenucha moths are identified by the following features:

- Adults have a large, **metallic blue body**.
- Orange/copper coloured head with distinct antennae.
- Hind-wings are black, edged in yellowy-cream colour. (bugguide.net)
- Larva are black and covered with tufts of cream-coloured hairs.
- Wingspan of 40 – 50 mm.

Season

- Adults are found from **May until July**.
- Larvae usually are seen **April to September**.



Plant Relationships in Nova Scotia

Adults can be found nectaring on goldenrod and other plants from the aster family. Larval host plants include native sedges and the blue-flag iris.



Tussock Sedge
Carex stricta



Canada Goldenrod
Solidago spp



Blue-flag Iris
Iris Versicolor

Other Facts

- This moth is not currently considered endangered. However, because of wetland degradation and loss, plants associated with wetlands that are larval host plants may be at risk.



Hummingbird Clearwing Moth

Hemaris thysbe

The Hummingbird Clearwing is a moth in the family **Sphingidae** (hawkmoth) and is frequently mistaken for a hummingbird. This moth is perhaps the most commonly seen of the hummingbird moths as it is a daytime flying moth.



Identification

Hummingbird clearwing moths can be identified by the following features:

- Clear wings with reddish hue.
- Furry body.
- Gold or olive green thorax.
- Dark burgundy abdomen.
- Wingspan of **40 – 60 mm**.

Season

- Hummingbird clearwing moths can be found in early spring until mid-summer. In their northern territories they have one brood per season.



Plant Relationships in Nova Scotia

Caterpillars feed on honeysuckle and snowberry. Adult moths take nectar from deep tubular flowers in shades of pink and purple, pollinating native plants such as bee balm and swamp milkweed. (GFM)



Snowberry
Symphoricarpos albus



Wild Bee Balm
Monarda fistulosa



Swamp Milkweed
Asclepias incarnata

Other Facts

- Hummingbird clearwing moths drink nectar with long unfurling mouthparts called a **proboscis**.
- Hummingbird clearwing moth caterpillars have a large horn on their posterior, a feature that is typical of many hawk and sphinx moths.



Wavy-lined Emerald Moth

Synchlora aerata

The Wavy-lined Emerald moth is a species of moth of the family **Geometridae** (Inch Worms). It is also known by the name "**camouflaged looper**" because in the larval stage it has the unique behaviour of adorning itself with small bits of flower petals from the host plant (usually from the Aster family) it is eating, as a means of disguising itself from predators.



Identification

Wavy-lined Emerald moths can be identified by the following features:

- Adults have **pale green wings and white, wavy transverse lines**.
- It is a common moth that is difficult to observe in both adult and larval stages because of green and patterned wing colouring or camouflaging.
- Wingspan of **1.5 – 2.5 cm**.

Season

- Larva overwinter as a middle instar and **emerge in late spring/early summer** when host plants are flowering.
- Larva pupate mid-summer, often within a covering of flower petals, and adults emerge shortly thereafter.



Plant Relationships in Nova Scotia

Larval host plants are mainly flowers in the (**Asteracea**) family, including black-eyed Susan, and common yarrow. Occasionally larva have been observed on Blackberry, roses, and the leaves of birch.



Common Yarrow
Achillea millefolium



Blackberry
Rubus canadensis



Black-eyed Susan
Rudbeckia hirta

Other Facts

- Larva attach flower fragments to its body using silk.
- Pieces of petals are replaced periodically as they wither or the caterpillar moves to a new host plant.
- Significantly, this caterpillar nibbles flowers and pollen but never consumes a flower's ovaries and thus may contribute to pollination. (GFM)
- Adult moths are nocturnal and do not nectar.
- Larva may be responsible for pollination, as they are frequently found on the flowers of their host plants.



Black-and-Yellow Lichen Moth

Lycomorpha pholus

The Black-and-Yellow Lichen moth is native from Nova Scotia to North Carolina and west to South Dakota and Texas. (wiki) The conspicuous adult moth is strictly **diurnal**. (bugguide.net) Lichen moth species are named as such because their larva eat lichens. Chemical compounds from lichens render the caterpillar toxic to many would-be predators, and this toxicity is retained in the brightly coloured adult moth.



Identification

Hummingbird clearwing moths can be identified by the following features:

- Larva are **grey and dotted with pale green, sparse long hairs**.
- The body of the adult moth is **bluish-black**. Basal portion of wings yellow or orange. The distal portion of wings black. bugguide.net
- Wingspan of **25 – 30 mm**.

Season

- Adult moths can be found on flowers from **mid-summer to early fall**. The life cycle of this moth is thought to take several years to develop, especially in the north.
- Hairy cocoons are attached to rocks or tree trunks near the former food source. (bugguide.net)



Plant Relationships in Nova Scotia

Day-flying adults can be found nectaring on flowers of the dogbane family and goldenrod. Larva feed on the algal component of lichens.



Canada Goldenrod
Solidago canadensis



Hemp Dogbane
Apocynum cannabinum



Common Greenshield Lichen
Flavoparmelia caperata

Other Facts

- Hungry birds avoid eating the adult moths because the moths retain some of the toxic chemicals that are in the plants that they consume when in their larval stage.
- Larva are very difficult to see on their host lichen, because they are very tiny and blend in with the colour of the lichen.



White Slant-line Moth

Tetracis cachexiata

The White Slant-line moth is a member of very large (super-family) of moths known as the **Geometrid Family** – also known as ‘**inchworms**’. Nocturnal flying adult moths are medium sized and quite conspicuous at night, if seen under a porch light. However, during the day, when at rest, these non-nectaring moths can be found resting on the flowers of mayapple () and dogwood flowers. Their coloration and wing veins allow them to blend into their surroundings. The caterpillar is also adapt at mimicking a twig, both in terms of its bark-like colouration and its ability to stand like a twig.



Identification

White slant-lined moths can be identified by the following features:

- Adults have a wing-span **19 – 26 mm.** ([wiki](#))
- Each of its white forewings are adorned with pair of conspicuous orangish-yellow lines. ([GFM](#))

Season

- Adults are on the wing from **May until July**, throughout its fairly large range.



Plant Relationships in Nova Scotia

While the adult moth does not eat, it is associated with several white flowers that it uses for hiding during the day, and may inadvertently provide pollination services. This is particularly important for the Mayapple flower, which has no scent, and therefore attracts few other pollinating insects. The leaves of several tree species, including oak, alder, maple and birch are larval hosts.



Mayapple
Podophyllum peltatum



Northern Red Oak
Quercus rubra



Alternate-leaved Dogwood
Cornus alternifolia



Primrose Moth

Schinia florida

Schinia – known as the ‘flower’ moth genus – has over 120 species in North America. The Primrose moth is one of the most beautiful. Adults are nocturnal, and the Evening Primrose flower (as its name implies) is open and most scented at night. Larva feed on the pollen and other flower parts of the Evening Primrose, but do not consume the leaves. (GFM) Range is from Alberta to Nova Scotia, south to North Carolina and Texas. (Caterpillars of Eastern NA)



Identification

Primrose moths can be identified by the following features:

- Wing Span **2.7 – 3.6 cm.**
(<https://www.butterfliesandmoths.org/species/Schinia-florida>)
- Forewing **bright pink, with yellow in lower basal area** and beyond st. line. Median area may have yellow tinting, with pink reniform spot and st. line distinct. Hindwing white.

Season

- Adults are on the wing **mid to late summer**. There is one generation of mature caterpillars from **August to September**. (Caterpillars of Eastern NA)



Plant Relationships in Nova Scotia

Both adult and larva are drawn to the evening primrose plants. In Nova Scotia there are several species of Evening Primrose native to Nova Scotia. By far, the Common Evening Primrose is most abundant. Evening Primrose is a biennial botanical.



**Common Evening
Primrose**
Oenothera biennis



**Common Evening
Primrose**
Oenothera biennis

Other Facts

- During the day, adult moths hole up within the primrose flowers. A good way to find them is by carefully inspecting flowers to see if they contain a small pink moth”. (GFM)



Isabella Tiger Moth

Pyrrharctia isabella

Although the adult moth does not feed, (its role being to reproduce), and therefore is not a significant pollinator, the Isabella Tiger Moth has an important cultural role. Despite there being no scientific evidence, long-standing folkloric holds that the larva known as the Woolly Bear helps predict the length of winter. Beloved by children, the caterpillar can cause skin irritation if handled too roughly. The adult moth is nocturnal and an important food source of bats. Like all insects, tiger moths play an important role in maintaining ecosystem health.



Identification

Isabella Tiger moths can be identified by the following features:

- Larva are covered with brown hair in their mid-regions and black hair in their anterior and posterior areas.
- Adults are generally dull yellowish through orangish and have robust, scaly thoraces; small heads; and bright reddish-orange forelegs
- Wings have sparse black spotting. Each abdominal segment bears three black dots. (Wiki)

Season

- The banded woolly bear larva emerges from the egg in the fall and overwinters in its caterpillar form, by allowing most of its mass to freeze solid. First its heart stops beating, then its gut freezes, then its blood, followed by the rest of the body. It survives being frozen by producing a **cryoprotectant** in its tissues.^[5] This freezing occurs outside of body cells, but not within. In the spring, it thaws. (Wiki)



Plant Relationships in Nova Scotia

Larva will eat a wide variety of plants.



Common Dandelion
Taraxacum officinale



Chicory
Cichorium intybus

Other Facts

- Woolly Bear Festivals are held throughout North America. Perhaps if there is not one in your community, you might consider starting one!



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- adult moth: Photo 551246126, (c) John D Reynolds, some rights reserved (CC BY-NC), uploaded by John D Reynolds
- tall meadow rue (see previous photo).
- lowbush blueberry - Canva Stock photo (wild blueberry)



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- Photo Canva Stock) (blue flag iris).
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Hummingbird Clearwing Moth:

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- Photo swamp milkweed Canva
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Black and Yellow Lichen Moth:

- Photo Canva - Adult moth on leaf
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- Photo 547495110, (c) scaup, some rights reserved (CC BY) (dogbane).
- Photo 604504991, (c) Robert, some rights reserved (CC BY-NC), uploaded by Robert (lichen).
- Photo Canva - Goldenrod

White Slant-lined Moth:

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- Photo Canva - White slant-lined moth on purple flower
- Photo Canva - Mayapple
- Photo Canva - Red Oak
- Photo Canva - Alternate-Leaved Dogwood

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