

*Nature's  
Wonders*

# Caterpillars

OF THE WORLD

Volume 1: Common Caterpillars

A 3D Model set by Ken Gilliland

Nature's Wonders

# Caterpillars

## OF THE WORLD Volume 1

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## Nature's Wonders

# Caterpillars

## OF THE WORLD Volume 1

### Introduction

Caterpillars are the larval stage of members of the order *Lepidoptera* (the insect order comprising butterflies and moths). Caterpillars of most species eat plant material (often leaves), but not all; a very small percentage eat insects, and some are even cannibalistic. Caterpillars are typically voracious feeders and many of them are among the most serious of agricultural pests. Conversely, various species of caterpillar are valued as sources of silk, as human or animal food, or for biological control of pest plants.

This set is an add-on volume to the Nature's Wonders Caterpillar product and adds to the library of Caterpillar species. This volume adds some commonly seen caterpillars such the Milkweed Caterpillar which metamorphosises to a Monarch Butterfly and a number of "hairy" caterpillars, such as the Woolly Bear. It supports Poser's Firefly and Superfly and DAZ Studio 3Delight and Iray render engines.

### Overview and Use

The set is located within the **Animals : Nature's Wonder** folder. Here is where you will find a number of folders, such as **Manuals**, **Resources** and **Fauna Libraries**. Let's look at what is contained in these folders:

- **Fauna Libraries:** This folder holds the actual species and poses for the "premade" fauna. The fauna for this set can be found in the following folder(s):
  - **Insects/Caterpillars of the World**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your fauna included in the set
  - **... Based Models:** This folder has the blank, untextured model(s) used in this set. These models are primarily for users who wish to experiment with poses or customize their own species. When using physical renderers such as Iray and Superfly, SubD should be turned to at least "3". For DAZ Studios 3Delight renders, the SubD must be turned from the "High Resolution" setting to the "Base" setting (otherwise some areas will render incorrectly transparent).

### Loading a Caterpillar using Poser

1. Load Poser, select the FIGURES library and go to the "Animals", "Nature's Wonders" and then the Nature's Wonders Fauna Libraries Insect folder.

2. Go to the Caterpillars of the World folder and select the Firefly or Superfly sub-folder.
3. Select a Caterpillar of your choice and load the model clicking the mouse.

## Loading a Caterpillar using DAZ Studio

1. Load DAZ Studio and go to the "Animals", "Nature's Wonders" and then the Nature's Wonders Fauna Libraries Insects folder.
2. Go to the Caterpillars of the World folder and select the Iray or 3Delight sub-folder.
4. Select a Caterpillar of your choice) and load the model clicking the mouse.

## Posing

The base body part with this model is the "abdomen" part. This part, as well as the main body part, control and entire models XYZ Rotate and Transition. There are two separate Easy Pose chains. One controls the entire abdomen (Abdomen1-9) from the abdomen to tail, and the other controls the opposite sections (Thorax1-3 and head).

## Hairy Caterpillars

Some caterpillars in this set use "Dynamic Hair". The use of this will differ depending on whether to use the Poser or DAZ Studio version.

**Poser Version:** Dynamic Hair is created by attaching "Hair Groups" (Props) to each "hairy" body segment. This hair is already set-up for rendering and use. You do not need to do anything more to it. It is strongly recommended that you do not move/touch the attached prop/hair group pieces. Doing so will throw them out of alignment with its corresponding body part.

**DAZ Studio Version:** Strand-Based Hair is used for the DAZ Studio version of this set. This hair is already set-up for rendering and use. You do not need to do anything more to it. It is strongly recommended that you leave the Strand-Based Hair system alone. **DAZ Studio must be version 4.11 or later for Strand-Based Hair to work.**

## Sizing & Poser Issues

All the caterpillars included in this set have been scaled to their appropriate sizes in relation to human figure models. In some cases, these caterpillars can be quite small measuring around one-inch.

The size of the caterpillar can produce some issues in Poser and may disappear when the camera is in close focus. The "hither" setting on Poser's cameras is set to 0.800 by default. Reducing this setting to "0.0" will correct this issue.

A second issue can appear when rendering a small caterpillar solely (without any other items in the scene). It will produce a default square shadow. It is a known bug with Poser. To correct this issue, include a second larger item off-screen and the shadows will render correctly.

## **Western Tent Caterpillar (*Malacosoma californicum*)**

There are currently six recognized subspecies. Western tent caterpillars are gregarious and will spend a large portion of their time with other caterpillars in silken tents constructed during their larval stage. Western tent caterpillars are ectothermic, therefore they do not produce their own body heat and are heavily influenced by environmental temperatures. The mature Western Tent caterpillar pre-pupa is 1.6-2 inches (4-5 cm) long.

**Venomous:** This caterpillar belongs to the category of "stinging caterpillars." Its spines may cause a stinging sensation if handled, and may cause an allergic reaction on the skin if handled by allergy sufferers or individuals with very sensitive skin.

**Diet:** It's a generalist herbivores, feeding on leaves. The most common host plants that caterpillars feed on are leaves from stonefruit trees. Western tent caterpillars have strong ecological interactions with their host plants. The time of caterpillar egg-hatch is closely timed with host plant bud-burst to ensure that early instar larvae are able to feed on leaves. However, caterpillars can hatch up to two weeks before or after tree's buds have burst.

**Where is it found:** This species is found in southern Canada, the western United States, and parts of northern Mexico.

**Metamorphosis:** It becomes the Western Tent Moth.





## **Spiny Elm Caterpillar (*Nymphalis antiopa*)**

When full grown, this two-inch-long caterpillar is covered with bristles. Its body is black with numerous white flecks and a row of red spots down the back. Its prolegs are red. In some parts of the country the caterpillars are seen in spring, but in some areas a second brood may be seen in late summer. It is about 2 inches (5 cm) long.

**Venomous:** It belongs to the category of "stinging caterpillars." The pupa of the Mourning Cloak is harmless - unlike the pupa of tent caterpillars (*Malacosoma* species), which may cause an allergic reaction on the skin if handled by allergy sufferers or individuals with very sensitive skin. Its spines may cause a stinging sensation if handled.

**Diet:** As the name implies it feeds on the foliage of elm trees, but also foliage of willow, birch, cottonwood and hackberry.

**Where is it found:** This species is native to Eurasia and North America.

**Metamorphosis:** It becomes the Mourning Cloak Butterfly and the Camberwell Beauty in Britain.



## **Banded Woolly Bear (*Pyrrharctia isabella*)**

Even though it is widely believed that the woolly bear caterpillar can predict the upcoming winter's severity, the truth is that this caterpillar can't predict what weather is actually in store for the upcoming winter. That urban legend revolves around the size and color of the band on the caterpillar. The woolly bear caterpillar's coloring is based on how long caterpillar has been feeding, its age, and which species it is. The better the growing season is the bigger it will grow. This results in narrower red-orange bands in its middle. Thus, the width of the banding is actually an indicator of the current or past season's growth.

**Venomous:** This caterpillar does typically cause irritation, injury, inflammation, or swelling. Handling the caterpillar is discouraged, because their sharp, spiny hairs may cause dermatitis in some people.

**Diet:** This species is a generalist feeder, consuming many plant species, including herbs and trees.

**Where is it found:** This species occurs in the United States and southern Canada.

**Metamorphosis:** It becomes the Isabella Tiger Moth.



## **Black Woolly** (*Arachnis picta*)

**Venomous:** This caterpillar does typically cause irritation, injury, inflammation, or swelling. Handling the caterpillar is discouraged, because their sharp, spiny hairs may cause dermatitis in some people.

**Diet:** This species is a generalist feeder, consuming many plant species, including herbs and trees.

**Where is it found:** It is found in the Southwestern United States and the bordering parts of Mexico.

**Metamorphosis:** It becomes the Painted Tiger Moth.





## Milkweed Caterpillar (*Danaus plexippus*)

The larva (caterpillar) in its fifth-instar has a complex banding pattern of yellow and black and white dots on the prolegs, with front legs that are small and very close to the head. Fifth-instar larvae often chew a shallow notch in the petiole of the leaf they are eating, which causes the leaf to fall into a vertical position. As the caterpillar completes its growth, it is usually 4.5 cm (1.8 in) long.

On July 20, 2022, the International Union for Conservation of Nature added the migratory monarch butterfly (the subspecies common in North America) to its red list of endangered species.

**Venomous:** This caterpillar is completely harmless. In a laboratory setting, the fourth- and fifth-instar stages of the caterpillar showed signs of aggressive behavior with lower food availability. Attacked caterpillars were found to be attacked when it was feeding on milkweed leaves, and the caterpillars attacked when foraging for milkweed. This demonstrates the aggressive behavior of monarch caterpillars due to the availability of milkweed.

**Diet:** Mostly milkweed, which is its host plant. They have also been seen on basswoods, elms, sumacs, locusts, oaks, Osage oranges, mulberries, pecans, willows, cottonwoods, and mesquites.



**Where is it found:** It ranges from Southern Canada through northern South America. It is also found in Bermuda, the Cook Islands, Hawaii, Cuba, and other Caribbean islands, the Solomons, New Caledonia, New Zealand, Papua New Guinea, Australia, the Azores, the Canary Islands, Madeira, continental Portugal, Gibraltar, the Philippines, and Morocco. It appears in the UK in some years as an accidental migrant.

Their wintering habitat typically provides access to streams, plenty of sunlight (enabling body temperatures that allow flight), and appropriate roosting

vegetation, and is relatively free of predators. The range of the western and eastern populations expands and contracts depending upon the season.

**Metamorphosis:** It becomes the Monarch Butterfly.

## Special Thanks to my Beta-Testing Team...

*Alisa & FlintHawk*

## Species Accuracy and Reference Materials

The author has tried to make these species as accurate to their real life counterparts as possible. With the use of one generic model to create dozens of unique species, some give and take is bound to occur. The texture maps were created in Corel Painter with as much accuracy as possible.

## Field Guide Sources:

- **Wikipedia** [https://en.wikipedia.org/wiki/Main\\_Page](https://en.wikipedia.org/wiki/Main_Page)
- **iNaturalist** <https://www.inaturalist.org/>
- **Butterflies and Moths of North America**  
<https://www.butterfliesandmoths.org>
- **Bug Guide** <https://bugguide.net>

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