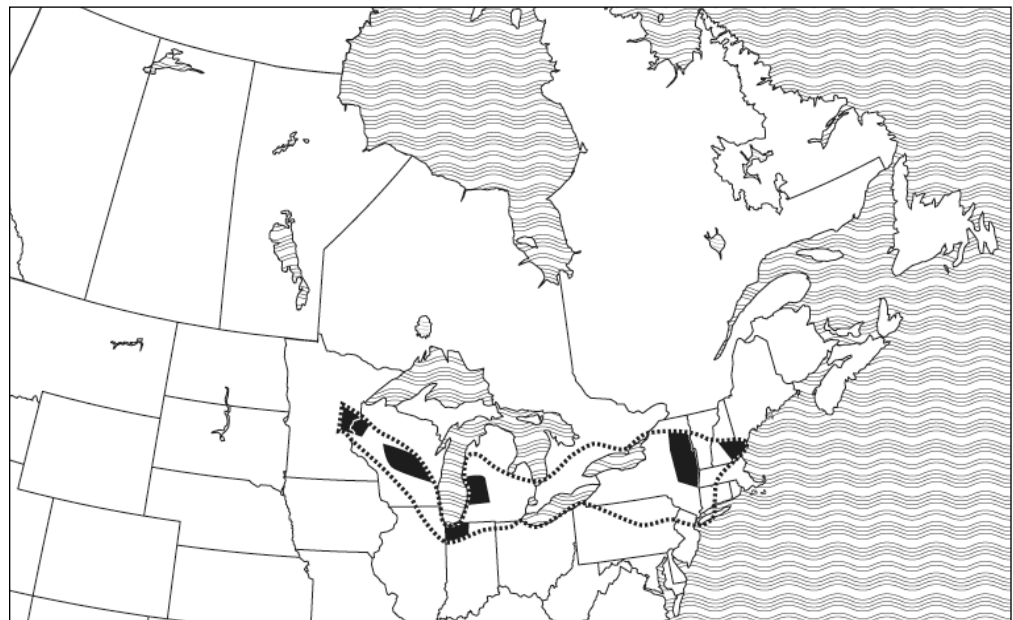




Karner Butterflies

All living things are connected. In an **ecosystem**, every plant and animal, no matter how big or small, plays an important role. Think of an earthworm – as it digs through the ground, it mixes the soil and allows air to flow through it. This helps plants take root in that soil. At the same time, worms are also a source of food for birds, rodents and frogs. A lot of different plants and animals depend on worms. What would happen if you removed worms from the ecosystem?

Sometimes a plant and an animal have an even closer connection. The survival of the Karner blue butterfly, for example, depends completely on a plant called the wild lupine. Karner blues are tiny, beautiful butterflies that once lived in many places around the Great Lakes, including Ontario. Today, there are still some Karner blues in the United States, but scientists believe there are none left in Canada. The wild lupine has vanished in Ontario and the butterflies have disappeared along with it.



..... Historic Range ■ Current Range





Adult Karner blues feed on **nectar** from many different flowers. When they are caterpillars, however, they eat only one food. Twice a year females lay their eggs on wild lupines, and when the caterpillars hatch they eat nothing but the leaves of this plant. If an area has no wild lupines, the Karner butterfly cannot live there.

Many plants have **adaptations** that allow them to grow in certain conditions. Wild lupines, for example, need sandy soil and lots of sunlight. In some parts of Ontario where the Karner blue used to live, humans have cleared the land for farming and building homes. Sometimes these people use **pesticides** to kill weeds, which harms the soil so wild lupines cannot grow there. Humans also do whatever they can to prevent fires in these areas. But forest fires actually help wild lupines by burning down the tall trees that make it too shady for the flowers to grow. If forests get too thick and dark, wild lupines can't get the sunshine they need.

People aren't the only problem, however. Deer love to eat wild lupines, and they can sometimes wipe out all the plants in an area.

Fortunately, **conservationists** are working to bring back the wild lupine and the Karner blue butterfly. They are removing some trees to let in the sun. They are planting wild lupines in fenced areas, where people and deer cannot get at them. They are even thinking about bringing Karner blue butterflies from the United States and releasing them in Ontario. In the future, people in the province may be able to enjoy these plants and animals once again.

In other parts of Canada, there are more examples of how the disappearance of one species can threaten another. In Alberta, burrowing owls make their nests on prairies and grasslands that are also used for farms. The owls usually live in holes and tunnels dug by other animals, such as ground squirrels, prairie dogs, and badgers.



People often kill these rodents because they consider them pests. Without ground squirrels and badgers, however, burrowing owls have fewer places to live.

The connections between plants and animals are often surprising. In the rainforest of northern British Columbia, scientists have discovered that salmon, bears and trees are part of the same **food web**. The salmon carry an important **nutrient** that trees need. Grizzly bears and black bears feed on the salmon, and they often drop the dead fish in the forest after they are finished eating. When the fish **decomposes**, the nutrient is released into the soil and helps the trees grow.

Scientists are learning about other connections between plants and animals. When we understand how living things are related, we can make sure we are not harming them. Humans, after all, are connected to everything in the natural world. By looking after plants and animals, we are helping ourselves, too.



Karner Blue Butterfly and Wild Lupine

Canon



Glossary

ecosystem: a community of living things and non-living things (such as soil and water) that interact with each other

nectar: a sugary liquid produced by flowers

adaptation: a characteristic that a plant or animal has evolved in order to help it survive

pesticide: a chemical used to kill weeds, insects or other pests

conservationist: a person who works to protect nature

food web: a group of connected food chains in an ecosystem

nutrient: an ingredient that helps a plant or animal to grow

decompose: to break down into smaller parts; rot