Wildlife Express!

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Perfectly Amazing Pollinators

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IDAHO FISH & GAME

Praise for Pollinators!

With spring in the air and summer right around the corner, this is the perfect time to praise pollinators! What is pollination, and what are pollinators? Why should you praise them? Well, you just may not be able to survive without them!

Plants need to reproduce; they need to make seeds. Plants use flowers to make the fruits and seeds to reproduce. Pollination happens when pollen is moved from the male part of a flower to the female part. Plants can't move pollen themselves, so they need the help of things called vectors. Vectors can be wind, water, birds, insects, butterflies, bats and other animals. Animals that transfer pollen from plant to plant are called "pollinators."

Flowers are more than just beautiful. The flowers we enjoy also look and smell good to pollinators. Many pollinators and plants have evolved together; they are perfectly matched to each other. The flower's form, color and scent all come into play. Some flowers even send out beacons to pollinators we can't see. Flowers sometimes have what are called nectar guides. Nectar guides are special patterns on the flower that some pollinators can see. The things flowers use to attract pollinators are called pollination syndromes. By looking at the pollination syndromes, you can figure out the pollinator most likely to visit a flower.

When pollinators pollinate flowers, they make food for humans. Pollinators help create one out of every three bites of food you eat! Three-quarters of all the plants used to feed people are pollinated by animals. Insects pollinate more than 200 kinds of crop plants just in the United States. Think of all the food you wouldn't have if pollinators disappeared. We would have no carrots, apples, tomatoes, or berries. We would also have a world without chocolate. A tiny fly, no bigger than a pin head, pollinates cacao flowers. Chocolate is made from the seeds found in the cacao seed pod.

Read on to learn a bit more about some of the pollinators found in Idaho. If you see one of them drinking from a flower, give it a little praise! The animal is getting a tasty treat and getting dusted with pollen. This helps the plant produce seeds and fruits. Both pollinator and plant help each other to survive. They also are helping you to survive!

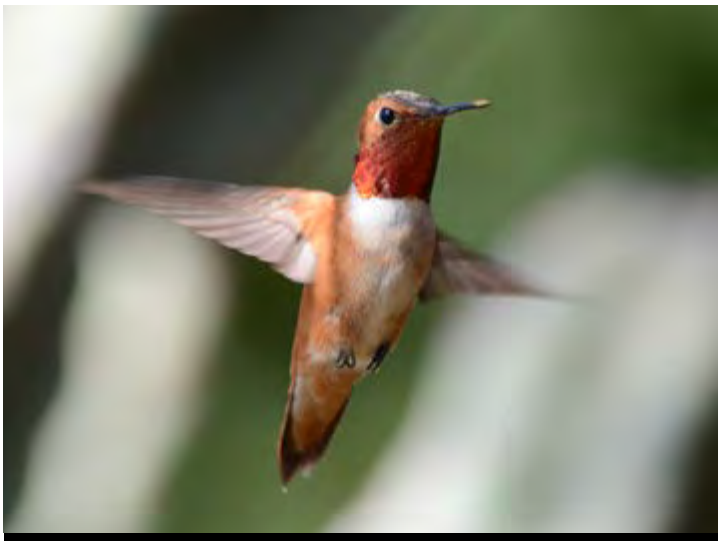
Lesser Long-nosed Bat

A lesser long-nosed bat pollinates a cross section of a saguaro cactus flower.

Photo by Merlin D. Tuttle, Bat Conservation International

Pollinator Syndrome Traits

FLOWER TRAIT	Bats	Bees	Beetles	Birds	Butterflies	Flies	Moths	Wind
COLOR	Dull white, green or purple	Bright white, yellow, blue or ultraviolet	Dull white or green	Scarlet, orange, red or white	Bright, including red and purple	Pale and dull to dark brown or purple; flecked with translucent patches	Pale and dull red, purple, pink or white	Dull green, brown or colorless; petals absent or reduced
NECTAR GUIDES	No	Yes	No	No	Yes	No	No	No
ODOR	Strong musty; emitted at night	Fresh, mild, pleasant	None to strongly fruity or stinky	None	Faint but fresh	Putrid	Strong sweet; emitted at night	None
NECTAR	Abundant; somewhat hidden	Usually present	Sometimes present; not hidden	Ample; deeply hidden	Ample; deeply hidden	Usually absent	Ample; deeply hidden	None
POLLEN AMOUNTS	Ample	Limited; often sticky and scented	Ample	Modest	Limited	Modest in amount	Limited	Abundant; small, smooth and not sticky
SHAPE	Regular; bowl shaped; closed during day	Shallow; have landing platform; tubular	Large bowl, like magnolia	Large funnel like; cups, strong perch support	Narrow tube with spur; wide landing pad	Shallow; funnel like or complex and trap-like	Regular; tubular without a lip	Regular; small and stigmas sticking out



Rufous Hummingbird

HUMMINGBIRDS

Woodstar, mountain gem, sunbeam, and sunangel are just a few of the names people have called hummingbirds. This neat group of birds is found only in the New World. That means that unless you live in North or South America, you will not see hummingbirds!

There are about 340 different kinds of hummingbirds. Most of them live in warm tropical places near the Equator. About 19 different hummingbirds live in the United States. Four of those spend the summer in Idaho: rufous hummingbird, calliope hummingbird, broad-tailed hummingbird and black-chinned hummingbird.

Hummingbirds range in size from the tiny two and one-half inch bumblebee hummingbird to larger eight inch tropical species. In the United States, most hummingbirds are about four inches in size. No matter what their size, hummingbirds are pretty amazing! Like all birds, they can fly forwards, but they can also hover and are the only bird that can fly backwards. Being able to fly in so many directions allows hummingbirds to reach the flower nectar they need.

Hummingbirds can fly in so many different directions because of their wings. Their long pointed wings rotate at the shoulder. The wrist and elbow hardly move at all. When a hummingbird hovers, its wings make a horizontal figure "8" in the air. This makes the wings act like oars in the air, so the hummingbird can stay in one place while it feeds on a flower. The wings are powered by huge pectoral muscles. These are the muscles on your chest. In most birds, the pectoral muscles make up 15% to 20% of a bird's body size. In hummingbirds, these muscles make up 30%. Now you know why a hummingbird can beat its wings 70 to 80 times in one second!

Hummingbirds also have large brains. They have the largest brains of any bird when compared to the bird's size. This big brain gives hummingbirds excellent memories. They can remember the places where they have found good food sources and nesting places. This means that the hummingbirds at your feeder last summer might be the same ones you see this summer!

To drink nectar, hummingbirds need long, straight bills. Often the bill is matched to certain flowers. Tiny calliope hummingbirds have a short bill compared to other Idaho hummingbirds. This allows them to feed on flowers with short tubes like scarlet gilia (hill-EE-a). Their flower tubes are too short for other hummingbirds. Black-chinned hummingbirds have longer bills. They can easily reach the nectar in longer flowers like penstemon (PEN-stem-on). By having different lengths of bills, the hummingbirds don't compete for food.

Calliope Hummingbird

Broad-tailed Hummingbird

Black-chinned Hummingbird

Hummingbird Flowers

Over 130 different flowers in western North America are "hummingbird" flowers. These flowers depend on hummingbirds for pollination. They do everything they can to make sure that hummingbirds find them!

Most hummingbird flowers droop down toward the ground. Drooping flowers do not give insects the landing pad they need, but hummingbirds can hover. They can easily hover to sip nectar from drooping flowers. Many of these flowers are red or yellow. Hummingbirds can see red and yellow, but most insects cannot. Hummingbird flowers usually do not smell. Smelly flowers attract insects, not hummingbirds. Hummingbird flowers also contain large amounts of nectar. Hovering takes a lot of energy. Flowers need to make sure the hummingbird gets a big reward for the energy it takes to hover and sip nectar.

© Yugen, UCSC Arboretum, flickr.com

Flowers get something in return for making hummingbird meals. Flowers get pollinated! As a hummingbird feeds, its head and face get brushed with pollen. Many flowers are designed to make sure hummingbirds get a good dusting of pollen. As the bird moves from one flower to another, it brushes against more pollen. Pollen is exchanged between plants. By pollinating its food source, the hummingbirds make sure they will have food again next year.

© Bill Gracey, flickr.com

Western Pygmy-blue

© Anne Toal, flickr.com

Beautiful Butterflies

There are about 170 species or kinds of butterflies in Idaho! We have some interesting butterflies in our state, and they all have their own needs when to comes to habitats.

Butterflies are known for being nature's transformers. They change as they go through their life cycles. All butterflies start their life as an egg. They hatch out into a caterpillar, change into a chrysalis and then become an adult. They go through a metamorphosis. At each stage of life, butterflies have different food needs.

Caterpillars are picky about what they eat. The adults are usually happy drinking nectar from just about any flower. There are a few butterflies that don't like to drink nectar. The morning cloak butterfly likes to sip tree sap and rotting fruit. There are even butterflies that like to eat animal droppings! The Lorquin's and red admiral butterflies love to sip from bird poop!

Idaho is home to the smallest butterfly in the world! The western pygmy-blue is only about the size of a dime. Its wingspan is about three-quarters on an inch. This little butterfly lives in the deserts of southern Idaho. The caterpillars eat the leaves, flowers and fruits of plants in the goosefoot family. They like to eat pigweed and saltbrush. Adults drink nectar from many different plants. The caterpillars have an interesting protector—ants! The caterpillars have a special honey gland that makes a sugary solution that ants love to eat. If a caterpillar feels threatened, it releases a scent that makes the ants go crazy. They attack the caterpillar's predator. The ants may even kill the predator if it doesn't leave!

Idaho's largest butterfly is the two-tailed swallowtail. It is found all across the state. The caterpillars of this butterfly really like the leaves of ash and cherry trees. The adults drink nectar from all sorts of flowers.

Keep an eye out for butterflies. If you see one, see if you can identify it and find out more about what it needs. The Digital Atlas of Idaho may be a good place to start your search. **imnh.isu.edu/DIGITALATLAS/bio/insects/insefr.htm** Good luck!

photo by Alan Schmierer

Two-tailed Swallowtail

Buzzing Bees & Wandering Wasps

© Stuart Williams, flickr.com

You are sitting outside, reading a book on a warm spring day, when all of the sudden you hear an unmistakable sound—buzz—buzz. It's the sound of a bee flying near. Does the sound make you nervous or jumpy? How about thankful and happy?

The words bee, wasp, yellowjacket and hornet are all used to describe any number of yellow, orange, brown and black flying insects. How can you tell them apart? Bees are usually round and hairy. Bees eat pollen and nectar from flowers, and honey that they make from nectar. To collect pollen, bees have flat wide legs. When a bee lands on a flower, pollen sticks in its hairs. They brush the pollen off of their bodies with combs on their legs. The pollen is then collected in "baskets" on their hind legs and carried back to the hive to store. Most bees are solitary. They live alone. Only honey bees and bumble bees live together in colonies.

Wasp bodies are slender, smooth and shiny. Yellowjackets and hornets are types of wasps, but names can be confusing. People call one yellowjacket in Idaho a bald-faced hornet. However, no hornets live in Idaho. Like bees, most wasps are solitary, but some are social. Yellowjackets live in colonies. Often wasps eat different things throughout their lives. Unlike bees, most wasps are predators. During the spring and summer, yellowjackets search out caterpillars, beetle grubs, flies, and spiders. Yellowjackets kill prey by biting, not stinging. They offer this food as chewed-up goo to their larvae. The adults mainly feed on plant nectar. When insects become harder to find, yellowjackets will seek out dead animals and sugary foods. This is when they become pests at our picnics.

Bees and wasps are actually very beneficial insects. If you like to eat, you should thank a bee. Over 150 kinds of crops we eat are pollinated only or mostly by bees. Even wasps are beneficial. They can be a farmer's best friend. Wasps eat many of the insects that damage crops like corn.

Hopefully, next time you hear a bee or wasp outside you will feel happy and thankful. The beneficial things they do for us far outweigh the harmful.

© Patty O'Hearn Kickham, flickr.com

Flowers: Beacons for Insect Pollinators

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⬅ Images of a Mimulus flower in visible light (left) and ultraviolet light (right) showing a dark nectar guide that is visible to bees but not to humans.

Butterfly Bush

© Jax House, flickr.com

Insects pollinate more flowers than any other type of pollinator. Plants need pollinators to find their flowers, so they have developed many ways to help insects do their job.

Bees and butterflies can see a kind of light called ultraviolet light. Ultraviolet light is something that humans can't see. If you looked at a flower under a purple light, it would look differently than it does in daylight. The purple light allows you to see patterns on the flower that show in ultraviolet light. You would see lines going down the flower petals. You might see a bulls-eye in the center of the flower. These patterns are called nectar guides. The lines lead insects to the nectar deep inside the flower. It's like the flower turned on lights to its own secret airport runway.

Insects see colors differently than we do. A bee looking at a red flower would see the color black. When ultraviolet light hits the red color, bees see a glowing purple. Most butterflies are also drawn to red flowers because of the ultraviolet light the flowers reflect.

The size and shape of flowers attract certain kinds of pollinators. Some butterflies like lots of small flowers close together. A butterfly bush has flowers in clusters. The butterfly can sit and sip nectar from many flowers without having to move. It doesn't need to use as much energy while it's eating. Small, delicate flowers might work well for butterflies, but not bumblebees. Bumblebees are a bit beefier than a butterfly. They need flowers with larger petals to support their heavier bodies. A snapdragon flower or apple flower has a large landing strip for a bee. A bee could easily land and sip nectar from these flowers. Can you think of other types of flowers that give bees a good landing platform?

Be Outside—Plant a Pollinator Garden!

Photo by U.S. Department of Agriculture

Spring is just around the corner. Soon hummingbirds, bees, butterflies and other insects will be out looking for food. How about inviting pollinators to your house with a garden? You don't need a lot of space. Even a few pots of plants can give pollinators a nice meal. Planting a garden is a great way to spend time outside and have fun! Here are some things to consider if your want to make a pollinator garden:

- Plant a variety of plants that bloom from early spring to late fall. Make sure to have different colors and shapes of flowers. Remember, pollinators like certain flower colors and designs, so the more variety you plant, the greater variety of pollinators you will see.
- Native plants are often a better choice. Modern hybrid plants often are bred so their flowers do not make nectar and pollen. They look good to us, but offer nothing to pollinators.
- Do not use herbicides and pesticides. These chemicals are harmful to plants, pollinators and the environment. If you feel like you must control a pest, use less-toxic natural remedies, like soap water. Spray at night when most pollinators are not active.
- Provide a source of water, especially a muddy puddle. Bees and wasps will use the mud to make homes. Many pollinators get minerals from mud puddles. You can also mix sea salt and water together in a shallow dish. Place a sponge in the dish. See how many pollinators land on the sponge to get the water and salt they need.
- Put up a hummingbird feeder. Mix $^1/_4$ cup table sugar with 1 cup water. Never use artificial sweeteners, honey or fruit juice. You may see more than hummingbirds visit your feeder.
- Make a bee box and other places for pollinators to nest and spend the winter. Drill holes about three to five inches deep in an old log or piece of lumber and put it in a sheltered place in your yard.
- Don't forget the babies! If you want lots of butterflies, you need plants the caterpillars eat. If you don't want to see munched-on leaves in your garden, put plants in a corner where they won't be seen as often.

BE OUTSIDE
IDAHO CHILDREN IN NATURE

Pollinators Word Search

H F Q M D P V J E X P L N B B
S U L N O H A N Z O Y U E E N
D E M O B T A H L S U F C E R
Z Z M M W T H L F X I R T S F
Y S C O I E I S S B H O A D L
Z Z C U R N R L W U D L R E U
K T R B A D G S N T P O Y E E
B F A T M C N B V T G C O S U
X T I L O O S Y I E P J V F X
S O B E E T L E S R H O Z R G
N P N E L L O P I F D Y Z U M
T E L O I V A R T L U S I D A
R O D O E U N R U I F D P L E
R W E C R O P S R E E I Q Y Q
F E E R D L G S F S W K H R E

WORDS

BATS

BEES

BEETLES

BUTTERFLIES

COLORFUL

CROPS

FLIES

FLOWERS

FOOD

FRUIT

GUIDES

HUMMINGBIRDS

MOTHS

NECTAR

ODOR

POLLEN

POLLINATION

SEEDS

SYNDROMES

ULTRAVIOLET

WILDLIFE EXPRESS
Volume 29 • Issue 7 • Pollinators • March 2016

Wildlife Express is published nine times a year
(September-May)
by the Idaho Department of Fish and Game

Lead Writer: Adare Evans

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WE WOULD LIKE TO HEAR FROM YOU!
If you have a letter, poem or question for Wildlife Express,
it may be included in a future issue! Send it to:
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or

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