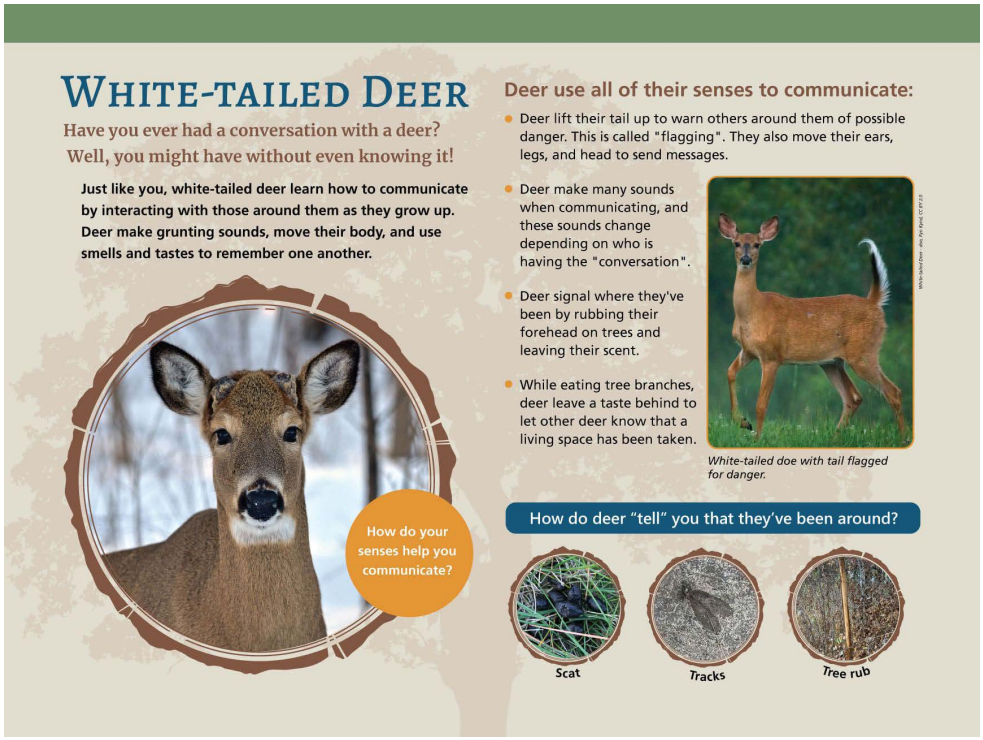
NatureWalk® THEMED SIGNS

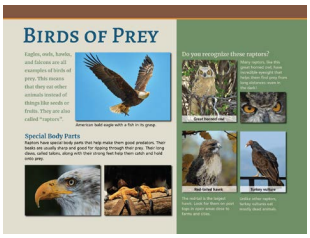
SIGNS ARE 18"×24" IN SIZE, AND DESIGNED WITH "BEST PRACTICES" FOR INTERPRETATION.

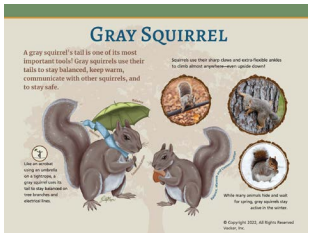
NatureWalk is an extensive series of standard nature themed interpretive signs developed for park and trail visitors of all ages. The sign panels are engaging, informative and particularly fun for kids!

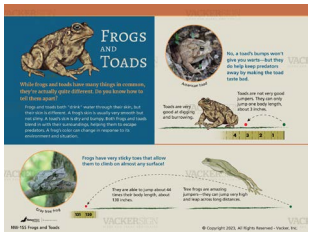
All NW designs are available in three sign panel material options. High pressure laminate and Tuff Panel are intended for permanent displays while our "Seasons" panel is intended for seasonal or short term rotation displays like StoryWalks®. 1/2" Thick high pressure laminate panels can be mounted with a frameless pedestal. 1/8" Thick high pressure laminate and 1/8" thick Tuff Panel are intended for display in a frame.

Dozens of additional primary and secondary designs available. Visit our website or request a portfolio for the most up-to-date titles.









Vackersign.com

SIGN PANEL AND MOUNT STYLE OPTIONS FOR 18×24 **STANDARD SIGNS**

*ADD $35 FOR **SEMI-CUSTOM SIGNS**—INCLUDES REPLACING PLANT AND ANIMAL SPECIES IMAGES.

FRAMED

Frame with aluminum post

Frame with sleeve wood post

ANGLE MOUNT FRAMES FOR 18"×24"×⅛" THICK SIGNS

Frames feature removable top rail for insertion of 1/8" thick Tuff Panel, or 1/8" thick high pressure laminate sign panel.

18×24 Frame and 60" aluminum post for in ground installation $411

18×24 Frame and 40" aluminum post with 6"×6" surface mount plate for surface mount installation $451

18×24 Frame with sleeve for lumber post $262
(post not included)

18"×24"×⅛" THICK SIGN PANEL MATERIAL OPTIONS

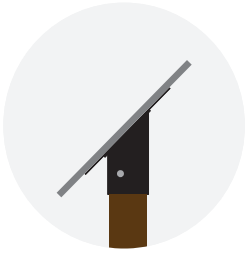
1/8" Thick Tuff Panel ..... $190* ($170* each, based on minimum quantity of 8.)
(premium graphic marking film with industrial grade protective overlaminate applied to .125" polymetal.)

1/8" Thick High Pressure Laminate (Embedded Phenolic Resin) $289*
(10 year limited warranty)

*Add $35 for **SEMI-CUSTOM SIGNS**—Includes replacing plant and animal species images.

FRAMELESS

Frameless pedestal aluminum post



Frameless plate with sleeve wood post

FRAMELESS ANGLE MOUNT PEDESTALS FOR ½" THICK HIGH PRESSURE LAMINATE SIGN PANEL

Frameless pedestal with 12"×18" mount plate and 60" aluminum post for in ground installation $171

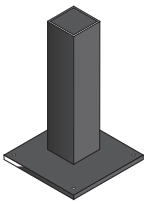
Frameless pedestal with 12"×18" mount plate and 40" aluminum post with 6"×6" surface mount plate for surface mount installation $211

12×18 Mount plate and sleeve for wood post $135
(post not included)

18"×24"×½" THICK HIGH PRESSURE LAMINATE SIGN PANEL

1/2" Thick High Pressure Laminate (Embedded Phenolic Resin) with threaded holes for blind mount to frameless mount plate $418
(10 year limited warranty)

*Add $35 for **SEMI-CUSTOM SIGNS**—Includes replacing plant and animal species images.



SURFACE MOUNT APPLICATION

Optional surface mount plates available. Add $40.

Standard post length: 40"

Extra post length available, $28 foot.

Frogs and Toads

How are frogs and toads different? How are they alike?

Frogs and toads have a lot in common, but are also different. They both live near ponds, swamps, and marshes. Frogs can live on the ground or in trees. Toads live only on the ground and have dry and bumpy skin. Most frogs have smooth skin.

Frogs are amazing jumpers. Toads can only jump a few inches.

Where could you look to find a frog or toad?

American Toad

Gray Tree Frog

NW-1PS Frogs and Toads

Frogs and Toads

While frogs and toads have many things in common, they're actually quite different. Do you know how to tell them apart?

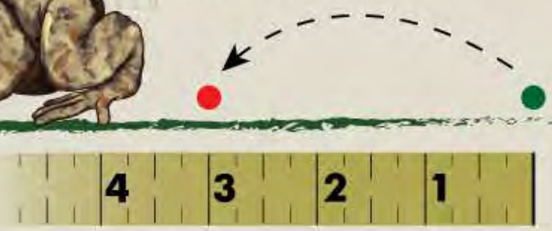
Frogs and toads both "drink" water through their skin, but their skin is different. A frog's skin is usually very smooth but not slimy. A toad's skin is dry and bumpy. Both frogs and toads blend in with their surroundings, helping them to escape predators. A frog's color can change in response to its environment and situation.

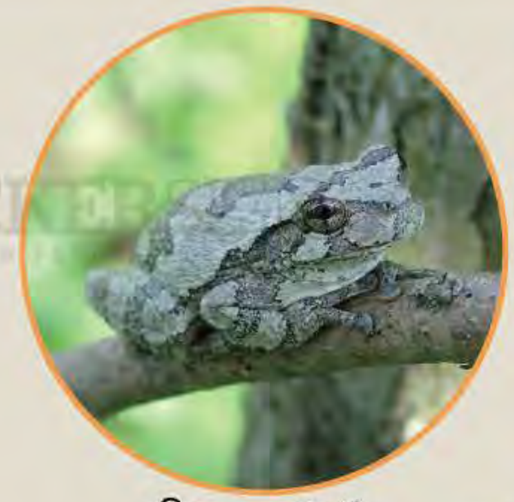
American toad

No, a toad's bumps won't give you warts—but they do help keep predators away by making the toad taste bad.

Toads are very good at digging and burrowing.

Toads are not very good jumpers. They can only jump one body length, about 3 inches.





Gray tree frog

Frogs have very sticky toes that allow them to climb on almost any surface!

They are able to jump about 44 times their body length, about 130 inches.

Tree frogs are amazing jumpers—they can jump very high and leap across long distances.

NatureWalk |

NW-1SS Frogs and Toads

Wild Turkey

Wild turkeys have been roaming across North America for ages—in fact, turkey fossils have been found to be more than 5 million years old! Because they are great at learning to live in new places, turkey sightings have become common. They can live in forests, fields, and even backyards!

Larry Smith, CC Flickr

Turkeys are most active early in the morning, looking for food.

Andy Reago & Chrissy McClarren, CC Flickr

Many people don't realize that wild turkeys CAN fly. In fact, they are able to fly low to the ground for about ¼ of a mile.

Paul Hurtado, CC Flickr

At night, they roost high in trees to stay safe from predators. How many can you spot?

Toms and Hens

Male turkeys are called "toms" and female turkeys are called "hens". It's easy to tell toms and hens apart: toms are usually much larger and have some different and larger body parts. Toms have snoods, wattles, and beards.

A turkey's **snood** can help them express their mood—it changes color and length if they're angry, scared, or feeling ill.

The **wattle** helps a tom cool down on hot days and attract hens.

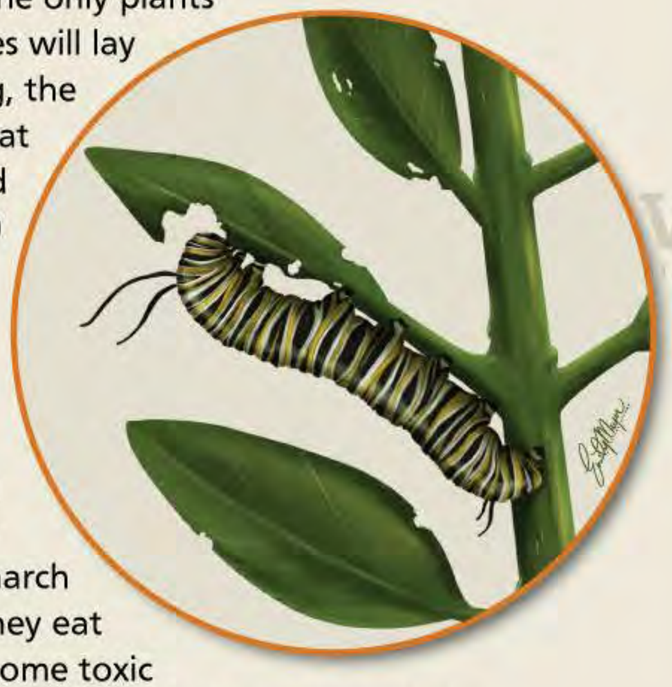
A tom's **beard** grows longer as he gets older and is a good way to tell which turkey in a group of toms is "in charge"— as his beard will usually be longest.

Tom and hen turkeys. Can you spot the tom's wattle and beard?

Milkweed

Named for its milky white sap, the milkweed plant plays an important role in the monarch's life cycle.

Milkweed is also one of the only plants where monarch butterflies will lay their eggs. After hatching, the monarch caterpillar will eat more and more milkweed and quickly grow to 2000 times their size.



As the caterpillar eats the milkweed leaves, it also eats the sap inside. When eaten, the sap can make many animals very sick or even die. Not monarch caterpillars, though. As they eat more and grow, they become toxic too. This helps protect the caterpillar from being eaten by predators.

Bright Colors = Danger

In nature, bright colors usually mean danger. Monarchs are no exception. As both caterpillars and butterflies, their bright colors warn predators that eating a monarch is a bad idea.

Common Milkweed

Look for monarch eggs on the underside of a milkweed leaf.

There are over 100 species of milkweed native to North America. They have clustered flowers and pods that break open in the fall to reveal fluffy, cotton-like seeds.

Monarch Life Cycle

Monarch butterflies have an AMAZING life cycle!

1. Egg
Female butterflies lay their eggs on a milkweed leaf. The eggs will hatch in about 5 days.

2. Caterpillar
The caterpillar eats and eats milkweed for about two weeks. It will grow about five times its size!

3. Chrysalis
The caterpillar finds a good spot and hangs upside down in a "J" shape to form its chrysalis.

4. Adult
In about two weeks, the caterpillar will finish becoming a butterfly and emerge from its chrysalis.

The cycle begins again!

NatureWalk

NW-4PS Monarch Life Cycle

Monarch Life Cycle

Monarch butterflies have a very interesting life.

A life cycle is the series of changes something goes through during its lifetime. A monarch butterfly's life cycle has four stages.

1. Egg

Female butterflies will lay their eggs on a leaf, almost always a milkweed leaf. In about five days, the egg will hatch.

2. Caterpillar (or larva)

The newly hatched caterpillar is very small and has a lot of growing to do. It will eat and eat and eat for about two weeks. During this time, the caterpillar will shed its skin 5 times and grow to nearly 2000 times the size it was when it hatched!

3. Chrysalis (or pupa)

Next, the caterpillar finds a place to pupate. When it finds a good spot, it attaches to it and hangs upside down in a "J" shape. The caterpillar will shed its skin one last time, leaving a chrysalis in its place.

4. Adult

Over the next 10 to 12 days, it will change into a butterfly. This change is called metamorphosis. Once the metamorphosis is complete, the monarch emerges as a butterfly. Its wings are very squished and wet, so it hangs them out to dry for an hour or so.

Migration

Butterflies that emerge in the spring and summer will reproduce and die in three weeks. But, butterflies that emerge in the fall will migrate south to overwinter and then reproduce the next spring. The offspring of those butterflies will complete the migration back to the northern areas. Then the cycle begins again!

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Monarch Migration

Monarch butterflies have one of the most amazing migrations. Some will fly over 2500 miles to a place they have never been before!

Fall Migration

In the summer, there are two main migration groups in the United States and Canada: those living ***east*** of the Rocky Mountains and those living ***west*** of the Rocky Mountains. Late in the summer, both groups begin their journeys to escape the winter chill. Butterflies from the east side migrate to the Sierra Madre Mountains of Mexico and those from the west side migrate to the California Pacific coast.

It is totally amazing that monarchs can find their way to their winter home even though they have never been to Mexico!

Spring Migration

In the spring, butterflies that overwintered in Mexico will fly up to parts of the southern United States, reproduce, and die. Their offspring will continue the trek up north to summer homes. It will take 3-4 generations to reach the northern United States and Canada. Butterflies that overwintered in California will also produce generations of offspring that will migrate to summer breeding areas.

Lori Nordstrom, USFWS

Roosting in Mexico

In Mexico, there can be tens of thousands of butterflies on a single tree. They cluster together to stay warm and save energy. Sometimes there are so many that branches break!

Gyme Neimann, USFWS

Roosting in California

Roosting in Iowa along their journey south. While one generation makes the journey south, several generations make the journey north.

Jessica Brokel, USFWS

NW-5SS Monarch Migration

Gray Squirrel

A gray squirrel's tail is one of its most important tools! Gray squirrels use their tails to stay balanced, keep warm, communicate with other squirrels, and to stay safe.

Like an acrobat using an umbrella on a tightrope, a gray squirrel uses its tail to stay balanced on tree branches and electrical lines.

Squirrels use their sharp claws and extra-flexible ankles to climb almost anywhere—even upside down!

While many animals hide and wait for spring, gray squirrels stay active in the winter.

NW-6PS Gray Squirrel

Gray Squirrel

A gray squirrel's tail is one of its most important tools! Gray squirrels use their tails to stay balanced, to keep warm, to communicate with other squirrels, and to stay safe.

Like an acrobat using an umbrella on a tightrope, a gray squirrel uses its tail to stay balanced on tree branches and electrical lines. In the winter, they wrap their tail around themselves to stay warm. Gray squirrels also use their tails to communicate with each other. They flick their tails up and down when they need to warn each other of danger.

Squirrels use their sharp claws and extra-flexible ankles to climb almost anywhere—even upside down!

While many animals hide and wait for spring, gray squirrels stay active in the winter.

How do you use your body parts to play on the playground?

NW-6SS Gray Squirrel

The Buzz About Bees

You might know that bees are super important pollinators, but do you know how many different kinds of bees there are and how to tell them apart?

There are about 3,500 different kinds of bees in the United States. Most people are familiar with honey bees and bumble bees, but these two types of bees total less than 2% of all bees in the U.S. Most bees are part of a very big group of bees called ***solitary*** bees.

A Closer Look at the Different Kinds of Bees:

Bumble Bees

Bumble bees are bigger, fuzzier and brighter than honey bees. Different kinds of bumble bees can be different colors.

Rusty patched bumble bee

Honey Bees

Honey bees are typically smaller than bumble bees—golden brown in color with stripes that are not very bright.

Honey bee

Solitary Bees

Super-hero pollinators

Mason bee, a solitary bee

Solitary bees, unlike honey bees and bumble bees, live in solitary—meaning they live alone and don't help each other. While solitary bees don't help each other, they are super-hero pollinators because they pollinate so many different plants. Solitary bees can be many different colors and sizes.

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NW-7SS The Buzz About Bees

Great Horned Owl

One of the most common owls in North America, great horned owls can live almost anywhere.

Great horned owls hunt mostly at night. Their huge eyes and large pupils help them see in the dark. Even with amazing eyesight, they do most of their hunting using sound and will eat just about anything they can catch.

Tom Koerner, USFWS

With their awesome eyesight, incredible hearing, and nearly silent flight, these owls are one of nature's best predators.

Are those ears?

No, the two tufts on top of a great horned owl's head are **not** ears, but they **do** help it hear. They help guide sound into the owl's ears—that are actually located on their face, hidden under their feathers. Unlike our ears, a great horned owl's ears are not in the same place on each side of their head. One ear is a little higher than the other.

The Smallest Sounds

The shape of an owl's face also helps them hear—by directing sound waves into their ears. This characteristic, paired with their ability to turn their head almost all the way around, allows owls to hear the smallest sounds. They can even hear a mouse running under a foot of snow!

Close your eyes and count how many different things you can hear around you. Can you hear things you aren't able to see?

Great horned owlet, a young owl.

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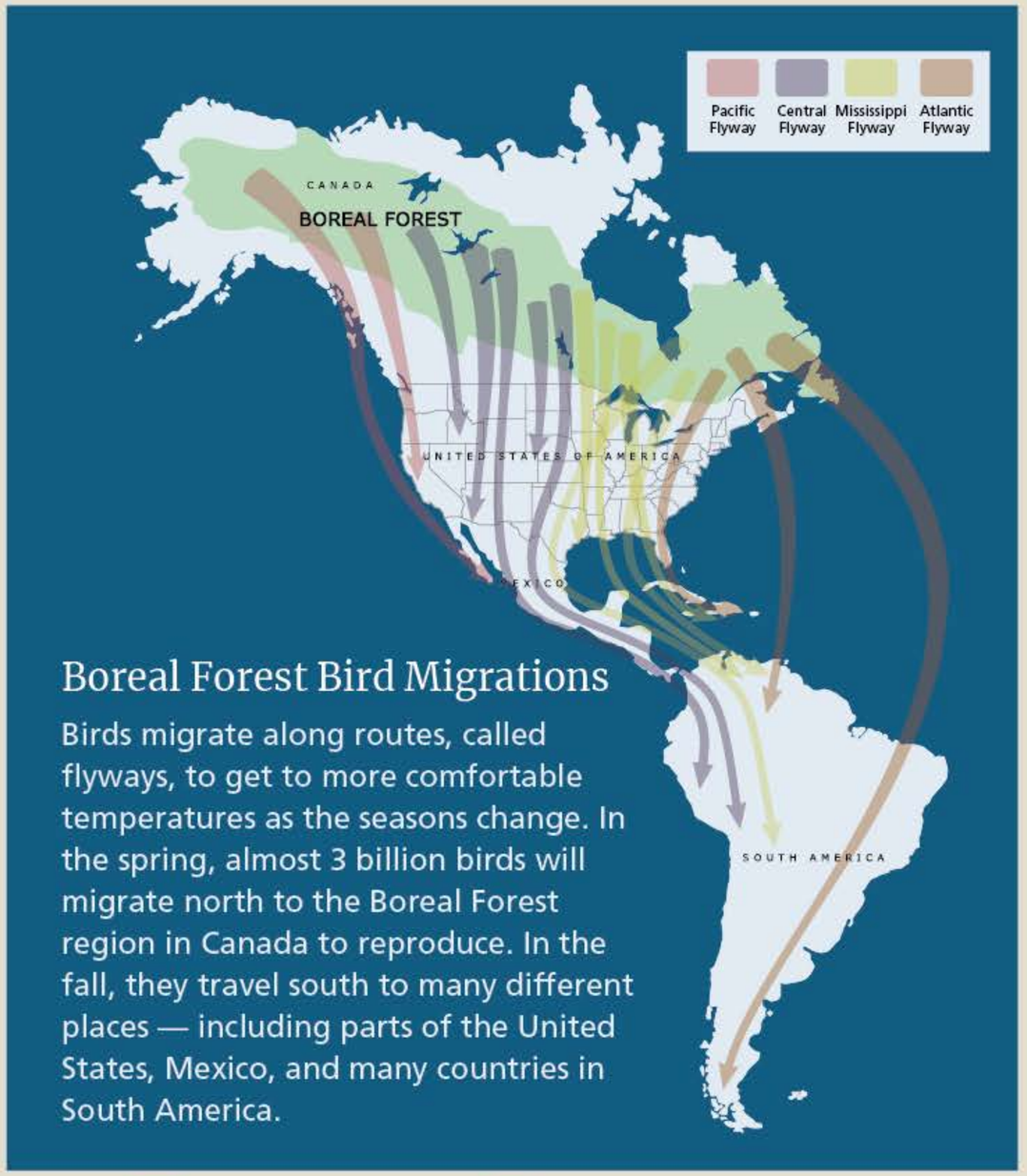
Migratory Birds

Many of the birds we see are world travelers! They will fly around 12,000 miles to get from their summer home in the north, to their winter home in the south. Some will even fly over 22,000 miles—that's the same as going back and forth across the entire United States 8 times!

Birds help spread seeds from plants, eat insects, and pollinate flowers! We do our best to protect these birds. In fact, one of the very first laws ever passed to protect wildlife was the law that protects songbirds, called the ***Migratory Bird Treaty Act***. This law says that we can't hurt these birds or keep anything that comes from them, including feathers, nests, or eggs. We also help songbirds by feeding them, building bird houses, and keeping cats indoors. Cats are one of the biggest predators to songbirds.



Boreal Forest Bird Migrations

Birds migrate along routes, called flyways, to get to more comfortable temperatures as the seasons change. In the spring, almost 3 billion birds will migrate north to the Boreal Forest region in Canada to reproduce. In the fall, they travel south to many different places — including parts of the United States, Mexico, and many countries in South America.


Baltimore Oriole


Cedar Waxwing


Goldfinch


Indigo Bunting


Ruby-throated Hummingbird

Where have you seen people trying to help birds?

Maple Tree

There are 12 kinds of maple trees in the United States. Most maple leaves have five lobes that make a shape that looks like your hand. The thickness of the lobes can help you identify what kind of maple you're looking at.

Silver Maple | Sugar Maple | Red Maple

Maple Syrup

Maple trees are well known for sap and delicious maple syrup! Early spring is the time of year for making it — when tree trunks and branches are warming and sap is "running" inside of them.

Maple syrup and maple sugar are made by cooking sap - and it takes ***a lot*** of sap. It takes ***40*** gallons of sap to make just ***one*** gallon of syrup! Indigenous peoples have been using maple trees to make sugar and syrup for thousands of years.

How to make maple syrup:

Tap the tree by drilling a hole and putting in a small spout.

Collect the sap in a container.

Cook the sap until it's thick. It takes a long time. That's it — all done!

Honey Bee

Honey bees were brought to the U.S. from Europe to help us grow crops and make honey. Honey bees are important pollinators because they pollinate most of the plants that grow the foods we eat every day.

Bees need honey to survive the winter. Lucky for us, honey bees make two to three times more honey than they need.

Honey bee

Honey bee or Bumble bee? Can you tell the difference?

Honey bees are usually smaller than Bumble bees—golden brown in color with stripes that are not very bright. A Bumble bee is wider, hairier and brighter.

Bumble bee

Honey bees live in a colony of up to 80,000 bees. When a colony gets too large they swarm and divide into two colonies.

Sarah Sweeny, USFWS

A Honey bee swarm

NW-11PS Honey Bee

Honey Bees

Honey bees were brought to the U.S. from Europe to help us grow crops and make honey. They are amazing pollinators and live in a colony of up to 80,000 bees! There are three kinds of honey bees in a colony and they all have a job.

Queen Bees: There is one queen bee in the hive and she is in charge of all the other bees. She also lays eggs for the next generation.

Worker Bees: Female bees. As their name suggests, these bees do lots of work including hunt for food, build and protect the hive. These are the bees we see.

Drones: Male bees. Their job is to stay in the hive and mate with the queen.

Sarah Swenty, USFWS

Honey bees swarm when a colony gets too large and needs to divide into two colonies.

A queen bee has a longer abdomen, making her slightly longer than the worker bees. Her back is black and shiny. Can you spot the queen?

Honey bees are typically smaller than bumble bees—golden brown in color with stripes that are not very bright.

Bees need honey to survive the winter. Lucky for us, honey bees make two to three times more honey than they need.

Canada Goose

The Canada goose is one of the most common and familiar birds in the United States. Thousands of geese migrate north and south across the U.S. every year.

More and more often, Canada geese are found in yards and parks because they eat grass! A freshly mowed lawn is like a dinner buffet to them. The short grass also allows them to be watchful of predators.

NatureWalk

NW-125S Canada Goose

The V-Formation

Canada geese are well-known for the "V" formation they fly in during migration. Flying in a "V" helps them save energy. It also gives them better visibility and helps keep them from getting lost.

Alex Galt, USFWS

Further With Less Effort

In the “V” formation, with each goose flying a little bit higher than the one in front of it, they face less wind resistance. This makes their journey less tiring. Because the leader faces the most wind resistance, it falls back when it gets tired. This way, they can all fly further without taking a rest.

Wasps

People are often mistaken when they call a black and yellow flying insect a "bee". While bees seem to get all the love, wasps are often more feared and under appreciated. After all, they do all the wonderful jobs that most bees do–and more. Not only are wasps good pollinators, they are also helpful predators.

Bee or wasp?

While bees and many wasps are often yellow and black, they have very different body shapes. Wasps are skinnier with a "waist," have darker wings and a smooth hairless body. Some are even shiny. Bees tend to be fuzzy and round in shape.

Bumble Bee

Wasp

Who are those party crashers?

Yellow jackets, a common type of wasp, are yellow and black and about ½" long. They are picnic and trash can "crashers" because they especially like to feed on sweet liquids like soda and fruit juice.

More than Pollinators

Wasps help our yards and gardens by eating other insect pests. Some help clean by eating dead insects.

Super Paper Makers

Wasps are super paper makers and nest builders. They build sturdy nests from soft paper pulp that they produce from wood fibers. Some wasps build nests suspended from trees or structures, while others build their nests below ground.

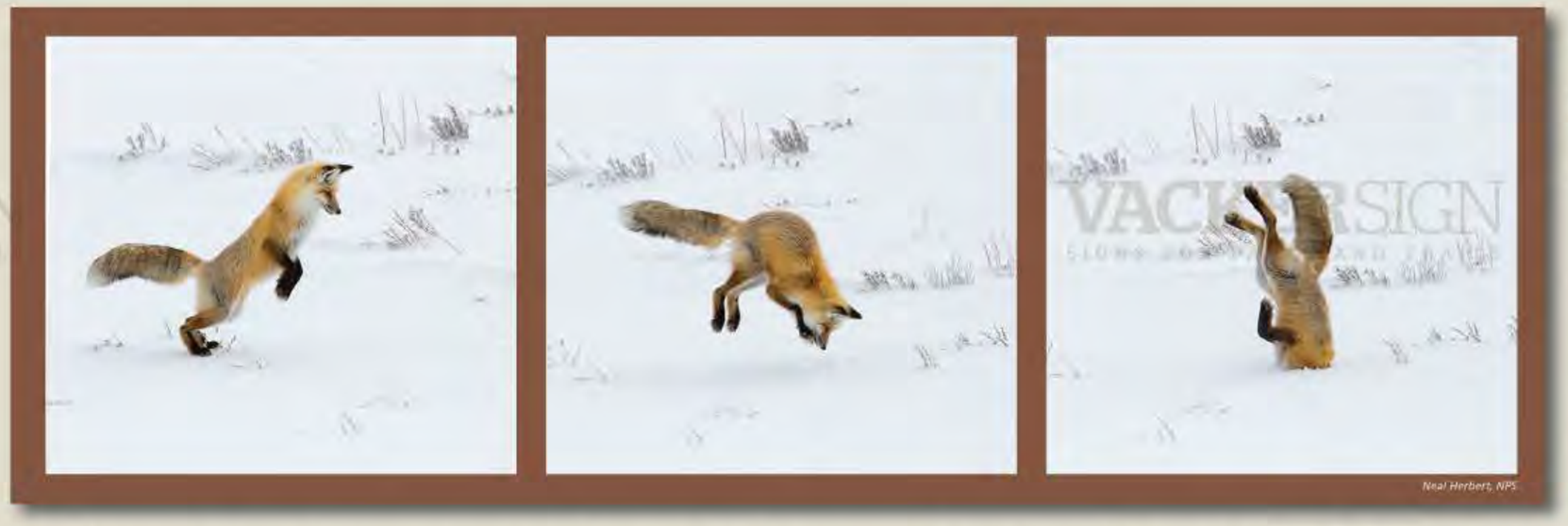
NW-13SS Wasps

Red Fox

Red foxes are considered one of the most adaptable animals on earth, meaning that they are very good at adjusting to change. Because of this, red foxes can be found on almost every continent on Earth and in nearly all habitats.

Red fox prefer to sleep in the open and are crepuscular, meaning they become active at twilight. They can run up to 30 miles per hour and can jump further than a kangaroo. Those jumping skills come in handy when hunting!

Jennifer Cross, USFWS



Neal Herbert, NPS

Dave Small, CC BY 2.0, Flickr

Red foxes are omnivores, meaning they eat both animals and plants. They are one of the only predators that will store food for later—this is called "caching".

Female red foxes (called "vixens") will raise their babies (called "kits") and teach them how to hunt, hide, and learn from their surroundings. Kits are born deaf, blind, and without any teeth—they have a lot to learn!

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NW-14SS Red Fox

White-tailed Deer

Have you ever had a conversation with a deer? Well, you might have without even knowing it!

Just like you, white-tailed deer learn how to communicate by interacting with those around them as they grow up. Deer make grunting sounds, move their body, and use smells and tastes to remember one another.

How do your senses help you communicate?

Deer use all of their senses to communicate:

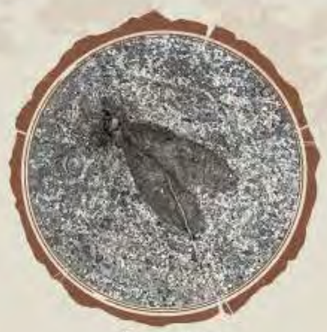
- Deer lift their tail up to warn others around them of possible danger. This is called "flagging". They also move their ears, legs, and head to send messages.
- Deer make many sounds when communicating, and these sounds change depending on who is having the "conversation".
- Deer signal where they've been by rubbing their forehead on trees and leaving their scent.
- While eating tree branches, deer leave a taste behind to let other deer know that a living space has been taken.

White-tailed Deer - does, Fyn Kynd, CC BY 2.0

White-tailed doe with tail flagged for danger.

How do deer "tell" you that they've been around?

Scat



Tracks

Tree rub

NatureWalk VackerSign.com © Copyright 2023, Vacker Inc.

NW-15SS White-tailed Deer

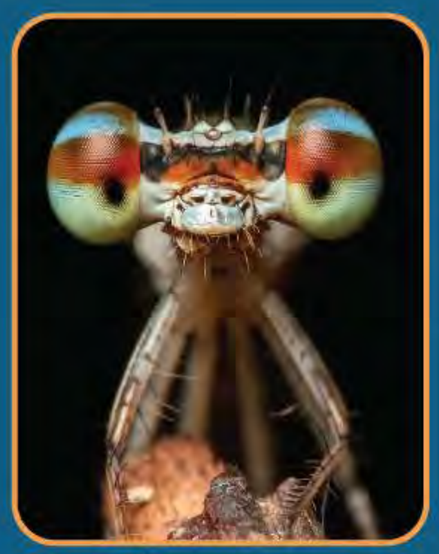
Damselflies

Dragonfly or damselfly?

When most people see one of these insects speeding through the air they are quick to call it a dragonfly. But is it really? Damselflies, like their larger cousins dragonflies, can be seen flying around lakes, ponds, rivers, and wetlands.

Damselfly

Dragonfly



Damselfly

Unlike dragonflies, damselflies have very thin, stick-like bodies. Their eyes also sit far apart on either side of their heads, whereas dragonfly eyes are usually almost touching.

Dragonfly

NW-16SS Damselflies

What's the easiest way to tell a damselfly from a dragonfly?

When they are resting, dragonflies will land with their wings spread open and damselflies will rest with their wings folded back.

USFWS

Damselfly

Damselflies are excellent predators. They will eat mosquitoes, water fleas, flies, and many other small insects. They can often be seen hunting by hovering above water or tall grass.

From Swimmers to Fliers

Damselflies start their lives in the water as nymphs. Adult damselflies will lay their eggs on plants in the water. The newly hatched nymphs will live underwater for up to three years, breathing through gills on their tails.

Pete Beard, Flickr

Damselfly nymph

Don Hemme, Flickr

Damselfly nymph

Once the nymphs grow large enough, they will shed their skin a final time and emerge as adults with wings.

NatureWalk VackerSign.com

Dragonflies

Dragonflies are some of nature's most impressive hunters and fliers.

Dragonflies will hunt mosquitoes, moths, butterflies, damselflies, or any other smaller creature they're able to catch—some dragonflies can even hunt and catch frogs!

Twelve-spotted skimmer

Using their four powerful wings, dragonflies are fast and agile fliers, with most able to fly 30 miles per hour!

Did you know that some dragonflies migrate? The green darner dragonfly will fly up to 900 miles from Canada to the Gulf of Mexico.

Green darner

NatureWalk |

NW-17SS Dragonflies

360 Degree Vision

Using their large compound eyes, dragonflies are able to process 200 images per second (humans only process 60 images per second)—allowing them to see the world in slow motion. With 80% of a dragonfly's brain dedicated to sight, they are able to see 360 degrees around.

Imagine that!

Fossil dragonfly
24-30 inch wingspan

Modern dragonfly
2-5 inch wingspan

Dragonflies have been around for over 300 million years! Dragonfly fossils have been found with a wingspan of 30 inches!

Painted Turtles

Painted turtles are the most common and widespread native turtle in North America! They can be found in streams, ponds, rivers, lakes, or any other slow moving freshwater.

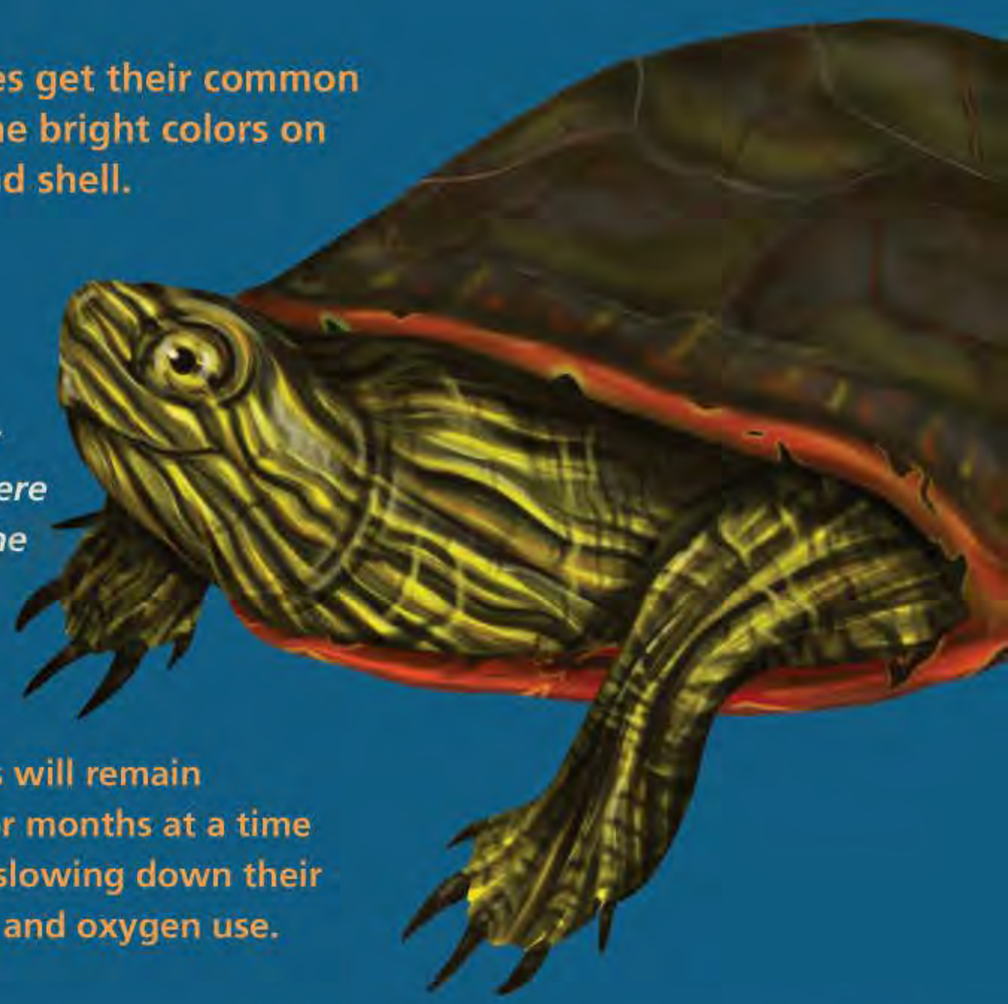
Basking in the Sun

These turtles are usually seen basking on logs in the sun. Like all reptiles, painted turtles are cold-blooded, which means they need to use things in their environment to keep warm. Painted turtles will sit on logs, rocks, even on shore during sunny days to heat up their bodies. Sometimes they will even bask in groups and stack on top of each other!

Painted turtles get their common name from the bright colors on their body and shell.

Have you ever wondered where turtles go in the winter?

Painted turtles will remain underwater for months at a time in the winter, slowing down their body's energy and oxygen use.



Painted turtles eat both plants and other animals. They use their sharp jaws and front claws to tear up food. They need to be in the water to swallow because their tongues don't move enough—the water pressure helps push food down their throat.

Allan Hack. USFWS, Flickr, (CC BY-ND 2.0)

Cattails

Wetlands Amazing Helpers

Cattails help protect wetlands and the animals that live there. Grown tight together, cattails' dense roots act like a filter. They catch litter and help absorb chemicals from lawn fertilizers and other pollutants carried in stormwater runoff.

Katie McVey, USFWS

How can YOU help protect wetlands and prevent pollution?

. . . and good hiding places

Above water, cattails create a barrier up to 10 feet tall that helps protect the wetland. Small fish, turtles, invertebrates, birds and other animals use cattails as a place to hide from predators.

Birds like the red-winged blackbird will make their nests woven into the tall stalks and leaves.

USFWS

The thick growth of cattails also makes a great place for predators to sneak up on prey.

In the fall, cattail pods break open and the wind carries away its fluffy seeds.

Tom Koerner, USFWS

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Great Blue Heron

Great blue herons can be found in all 48 of the continental United States, and can usually be spotted standing on the shores of rivers and ponds.

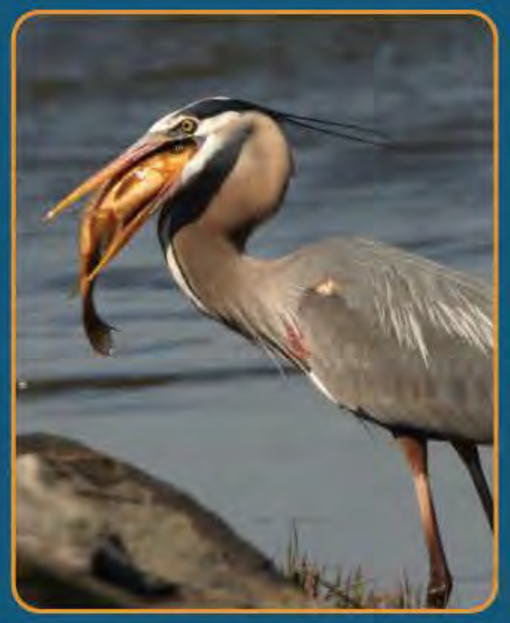
Now, that's one *TALL BIRD!*

Standing at around 4½ feet (54") tall, great blue herons are the largest and most common heron in North America. Despite their impressive height, these birds usually weigh less than five pounds!

Great blue herons will stand perfectly still at the edges of the water and wait for fish to swim up close. Using their long, sharp bill, they will skewer the fish and then swallow it whole!

While known for catching fish, they will also eat small rodents like gophers or mice, snakes, turtles, and frogs or toads.

How perfectly still can you be?



Bald Eagle

Bald eagles are the national bird of the United States! Once almost extinct, conservation efforts have helped make these amazing birds a common sight across North America.

What a Wingspan!

Bald eagles are one of the largest birds in North America. The female is larger than the male and can have a wingspan up to 91 inches long! They're usually about 3 feet tall but weigh 12 pounds or less — the same weight as two gallons of milk! Like all birds, bald eagles have hollow bones which allow them to be large in size, yet light enough to fly.

Tom Koerner, USFWS, CC by 2.0, Flickr

Their nests are so big that we could easily sit in them!

Because we rarely see a bald eagle up close, most people don't realize just how big they really are!

NW-21SS Bald Eagle

Take-away Fish!

These large predators like to live near water because they eat mostly fish. They drop down at up to 100 miles per hour, then slow down and glide just above the water to grab a fish with their talons. They fly away with the fish and eat it somewhere else. People will often find fish bones and scales in the woods that have been dropped by eagles.

Eagle Eyes

The phrase *"eagle eyes"* definitely applies to bald eagles. Their eyesight is up to 7 times better than humans, and they can spot a fish in the water from a mile in the sky!

Tough Talons

Bald eagle talons are incredibly strong and can exert up to 1000 pounds of pressure per square inch! That's 10 times stronger than an adult human hand!

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Oak Tree

There are almost 90 species of oak trees in the United States. While each are a little different, they have many things in common.

Old oak trees are found in places where natural wildfires used to be common. The thick bark on most oaks helps protect them from fire.

White Oak or Red Oak?

Each of these bumps is called a "lobe".

Most oak leaves have lobes—some have 5 or more, and some only have a few.

How many lobes does this white oak leaf have?

Scientists split oaks into two groups: ones with **round** lobes, and ones with **pointy** lobes. The round lobed oaks are called "white oaks", and the pointy ones are called "red oaks".

Can you tell which group each of these oak leaves belongs in?
(sometimes their name will give you a hint!)

Important Habitat

Oaks are important to the areas where they grow. Their seeds, called **acorns**, are food for many animals like squirrels and mice.

Birds can also live inside their trunks and build nests on their branches.

Each species of oak trees has unique acorns.

Have you seen ones that look like this?

Once the oak tree has died, many creatures like slugs, ants, or fungi will live inside and eat the wood as it decomposes. Oaks that have been scarred by fire decompose more slowly.

North American Beaver

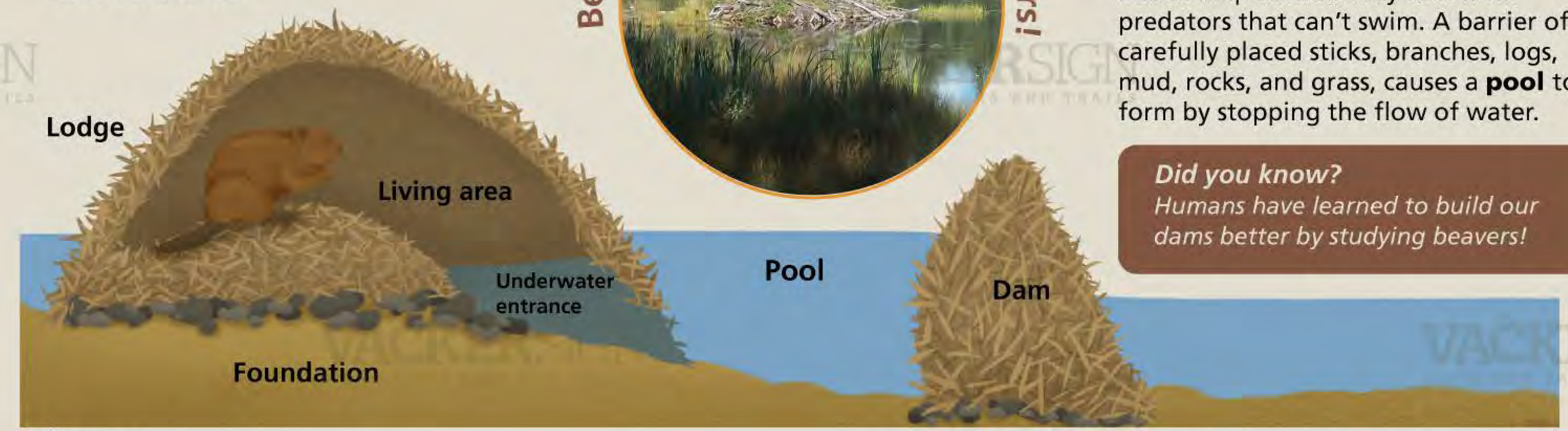
Beavers are the largest rodent in North America and the second largest rodent in the world!

Beavers have **orange** teeth! The color comes from a natural protective coating that's made of iron!

A beaver has chewed all the way through this tree!

Home Sweet Home

Lodges, which are separate from dams, are beavers' homes. They can be both in the middle of a body of water or touching the shore. Beavers enter the lodge from underwater and have inside living space above the water.



Keep out!

Dams help beavers stay safe from predators that can't swim. A barrier of carefully placed sticks, branches, logs, mud, rocks, and grass, causes a **pool** to form by stopping the flow of water.

Did you know?
Humans have learned to build our dams better by studying beavers!

Raccoon

From forests to prairies and backyards, raccoons can live almost anywhere! Have you seen any raccoons where you live?

When living close to humans, raccoons will eat garden vegetables and dig through garbage to find food. They are omnivores, which means they eat both meat and plants, just like humans!

Sheri Whala, USFWS, CC by 2.0, Flickr

Hideaway Home

Mother raccoons put a lot of work into making sure their babies stay safe. They make a den in a tree, in the ground, and sometimes even inside buildings or houses! Each den is carefully camouflaged to help them stay safe from predators.

A Mother's Care

Rich Keen/DPRA, CC by 2.0, Flickr

Baby raccoons, called kits, are usually born in summer and stay with their mother until the next spring.

NW-24PS Raccoon

Raccoon

Whether wandering on the sides of roads, digging through trash, or climbing up backyard trees, raccoons are a familiar sight to most people. From forests to prairies and even city parks and alleyways, raccoons can live almost anywhere!

Not a Picky Eater

Raccoons are omnivores, which means they can eat both meat and plants, just like humans! In more wild places, raccoons will eat things that live in water—like crayfish and minnows.

When living close to humans, raccoons will eat garden vegetables and dig through garbage to find something to snack on. Their hand-like paws help them grab food in hard to reach places.

Have you seen any raccoons near where you live?

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NW-24SS Raccoon

Hideaway Home

The mother makes a nest, or den, in a tree, in the ground, and sometimes even inside buildings or houses! The family sometimes moves to a new den to stay safe from predators. Each nest is carefully camouflaged and protected.

A Mother's Care

Female raccoons put a lot of work into making sure their babies stay safe. Baby raccoons, called kits, are usually born in summer and stay with their mother until the next spring.

Rich Keen/DPRA, CC by 2.0, Flickr

Pollinators

Pollinators are some of nature's hardest workers and some of the most important creatures on our planet. But what exactly is a pollinator and what do they do?

A Plant's Best Friend

Put simply, pollinators do the super important job of moving pollen from one plant to another — helping plants make seeds and reproduce. When feeding on sweet nectar (a sugary liquid that gives them energy), pollen sticks to their body. When they move to the next flower, the pollen goes with them and falls off. Now, that's a fine accident!

Pollen-covered bumble bee

Some bees can visit over 5,000 flowers in a single day! That's a lot of pollinating!

More than Bees and Butterflies

When we think about pollinators, we usually think of bees and butterflies. While they are both very important, there are many other kinds of good pollinators! Birds, flies, ants, beetles, wasps, moths, and bats are pollinators, too.

What?! A world without *chocolate*?!

Without pollinators, more than 80% of all plants would disappear and more than 75% of the foods we eat wouldn't exist. This includes sugar, apples, bananas, blueberries, avocados, honey, coffee and even chocolate!

Different pollinators are attracted to different flower shapes and colors. Hummingbirds need flowers with space around them so they have room to hover as they drink nectar.

How can you help?

Pollinators need help to keep doing their jobs. Here's how you can help:

- Be kind and gentle with pollinators (even the ones you don't really like).
- Plant a pollinator-friendly garden with flowering plants (native plants are best).
- Reduce the use of pesticides and only use those with the lowest risk to bees and other pollinators.
- Learn more about protecting pollinators and spread the word!

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Native Plants

Native plants are incredibly important to the world around us. Life as we know it wouldn't be the same without them!

What is a native plant?

Native plants are ones that have been growing in a place (called a habitat) for a very long time, sometimes even longer than people have been there! Each plant type does different jobs for their habitat, and gets along well with the other surrounding plant types and animals. Many animals have come to rely so much on certain native plants that they need them to survive! Without native plants, many insects, birds, and other creatures wouldn't exist!

New England aster

Did you know...

It's very important for habitats to have diversity – meaning many different kinds of plants and animals living there. Native plants help support diversity!

Many animals, like monarch caterpillars, can only live on and eat one kind of plant! Losing native plants like common milkweed put these animals at risk!

Common milkweed

Native plants to the rescue!

In the last 100 years, millions of acres of native plant habitats have been destroyed. Neighborhoods, buildings, and farms have replaced important native plants. Non-native plants (plants that have **not** grown in a place for a long time) do **not** get along well with surrounding wildlife and this causes problems. Some of the new plants grow too quickly and push the native plants out of the habitat. This puts the animals that need the native plants in real danger. To help, plant and grow native plants in your backyard, garden, or any open space.

Prairie blazing star

Native plants are typically easier to grow than non-natives. They usually don't need chemicals, fertilizer, or watering.

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Invasive Species

What is an "invasive species"?

An "invasive species" is an organism than can cause harm to other living things by "invading" a place it doesn't normally live. When an organism moves to a new place, it can dominate the other living things and leave too few resources for all the organisms to survive. When this happens, many of the organisms die or move out, causing the area to lose diversity.

How do they get to a new place?

Usually, invasive species arrive in new area by accident. They can hitch a ride on our shoes, boat motors, and even get moved around the world inside shipping boxes.

Sometimes we spread invasive species without realizing how much damage they can do. Pets like Burmese pythons, goldfish, and red-eared slider turtles can all invade and threaten a habitat if released in the wild.

How can you help?

There are many ways you can help stop the spread of invasive species.

Brushing your shoes after hiking can help keep invasive plant seeds from "hitching a ride" to new areas.

Cleaning off boats and trailers helps to stop the spread of aquatic invasive species like zebra mussels!

Look for volunteer opportunities to help remove invasive plants.

Can you spot the differences?

When an invasive species moves in, it dominates other living things and the habitat loses a lot of diversity.

What plants and animals are missing after the invasive species has taken over?

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Animal Signs

Sometimes you know an animal was around even though you didn't see it. Animals often leave clues behind called "signs".

Some signs to look for:

- Scat (poop)
- Feathers or fur
- Footprints or tracks
- Blood
- Chews, or things that have been eaten
- Nests or places where animals rest

Signs that Tell a Story

Sometimes signs tell you more. Using the clues in these photos, what animals do you think were here?

Now look closer: What might have happened here?

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Squirrel Signs

Squirrel nests, called **dreys**, can be found year round!

Fred Martin, CC by 2.0, Flickr

Nut shells. Who do you think left this mess? Do you see teeth marks?

Squirrel tracks

Squirrel tracks are usually in a **squ**are shape!

Why no scat (poop)?

Squirrels hide their scat to help them stay safe from predators. How do you think this helps? Where do you think they hide it?

Paul Comstock, CC by 2.0, Flickr

A **cache**, a place where squirrels hide their food to keep it safe. Why might they be easier to find in the winter?

Animal Signs: Scat

What can we learn from scat?

"Scat" is what scientists call an animal's poop. Scat can tell us what animals have been nearby and what an animal might have eaten. Some seeds and animal parts like bones, fur and hair, don't get digested and can be seen in scat!

What kind of animal do you think might have left this scat?

Answers: A: White-tailed deer, Eastern B: Cottontail rabbit, C: Black bear

What do you think each animal could have eaten?

A Close Look at Coyote Scat

Coyotes eat pretty much whatever they can catch or find. They are hunters and scavengers and prefer small mammals like mice, rabbits and squirrels. They will also eat birds, fish, frogs, insects, fruits and vegetables.

What can you see in this fresh coyote scat?

What do you think the coyote ate? (Hint: this photo was taken after Halloween)

Scat can look different depending on how old it is. What other differences do you notice?

What can you see in this dry coyote scat?

What do you think the coyote ate?

Mallard Duck

Mallards are one of the most common ducks in the world. They are typically seen in ponds, lakes, wetlands, and rivers. However, they can live in almost any habitat that has freshwater. You might even see them in a pothole!

Mallards are best known for the **drake's** (a male duck) bright green head. Female mallards, called **hens**, are almost entirely brown—except for a blue stripe on their wings.

Can you tell which of these mallards is a drake and which is a hen? How did you know?

How do they do it?

Imagine walking barefoot on snow and ice! Mallards can do it because they circulate their blood in a special way. Instead of pumping cold blood from their feet directly back up to their heart (which would make their whole body very cold), the blood warms up by first taking a journey through several other veins in their legs.

Mallards are also kept warm by a tight outer layer of waterproof feathers and an inner layer of soft warm feathers called down.

Tom Koerner USFWS (CC by 2.0) Flickr

Mallards are omnivores, meaning they eat both plants and animals.

Bottoms Up!

Mallards eat by tipping underwater for food—**head down and tail up!** Their bill acts like a strainer. They scoop up bits of weeds and small insects and when they bring their head up, their bill keeps the food in but lets the water out! Mallards also look for food on land.

Did you know?

It's not healthy for ducks to eat bread. Cut-up grapes, corn or peas are all better choices.

Just a day or two after hatching, mallard ducklings (baby ducks) can run, swim, and even find their own food!

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Butterfly Identification

Monarch

Monarchs are probably the most famous butterfly. Male or female? The pair of dots tell you it's a male.


Viceroy

Gotcha! Did you think this was a monarch? Can you spot the difference between a monarch and a viceroy? Compare the lower wings. The veins on a viceroy form the shape of a "V". A viceroy is also smaller with a wing span of about 3 inches. A monarch's wing span is about 4 inches.

There are over 600 different butterfly species in the United States!

Learn how to identify seven of the most common.


Tiger swallowtail

Swallowtails are some of the biggest butterflies.


Black swallowtail


Red admiral


Cabbage white

These little butterflies can be found in any habitat throughout the country.


Painted lady

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Birds of Prey

Eagles, owls, hawks, and falcons are all examples of birds of prey. This means that they eat other animals instead of things like seeds or fruits. They are also called "raptors".

American bald eagle with a fish in its grasp.

Special Body Parts

Raptors have special body parts that help make them good predators. Their beaks are usually sharp and good for ripping through their prey. Their long claws, called talons, along with their strong feet help them catch and hold onto prey.

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NW-32PS Birds of Prey

Do you recognize these raptors?

Great horned owl

Many raptors, like this great horned owl, have incredible eyesight that helps them find prey from long distances–even in the dark!

Red-tailed hawk

The red-tail is the largest hawk. Look for them on post tops in open areas close to farms and cities.

Turkey vulture

Unlike other raptors, turkey vultures eat mostly dead animals.

This Old Tree

There's no such thing as "just" a dead tree.

Dead trees, called snags, can become animal homes, sources of food, building materials, places to hide, and more!

Dead trees are full of life!
What do you see living here?

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NW-33PS This Old Tree

THIS OLD TREE

There's no such thing as "just" a dead tree.

Dead trees, called "snags", can become animal homes, sources of food, building materials, places to hide, and more!

As the tree is broken down by living things like bacteria and fungi, it helps new plants to grow by putting important nutrients back in the ecosystem.

Dead trees are full of life!

You might see a dead tree and think it no longer helps the ecosystem, but that's not the case! In fact, one in five forest animals depends on dead material for their habitat.

That's not all

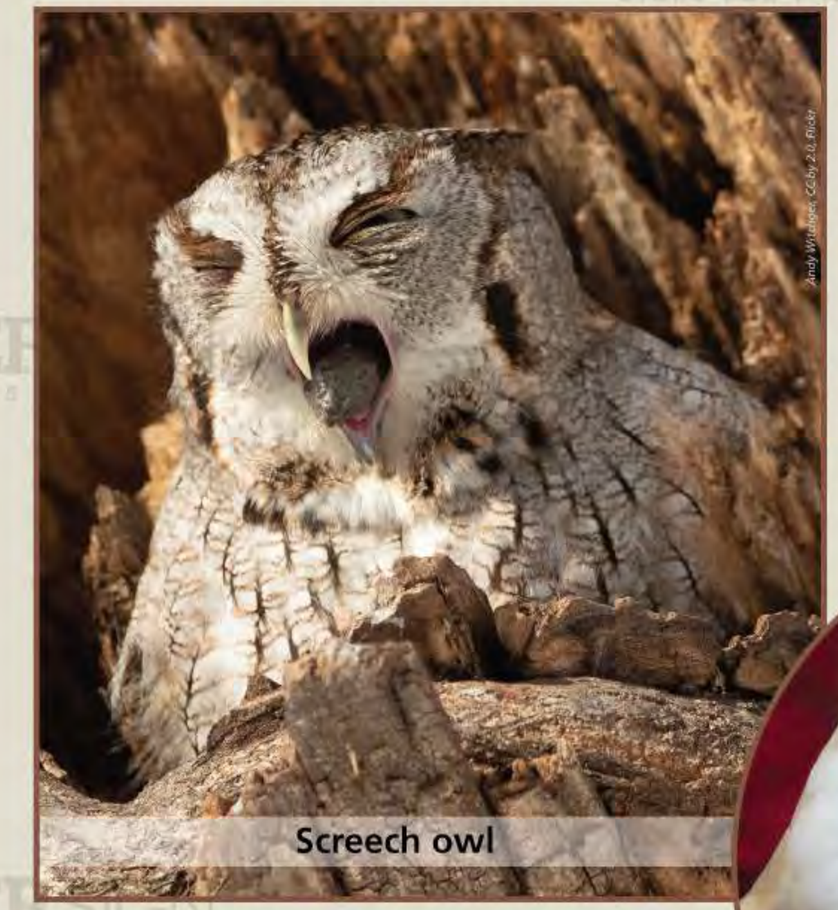
Snags also store carbon, block winds, and help prevent erosion.

Did you know...

As many as 45% of all native North American bird species need dead trees to complete their life cycle.

What do you see living here?

Owl Pellets



Screech owl

What is an owl pellet?

An owl pellet is a ball of small bones, fur and feathers—the parts of an animal that an owl can't digest. The owl spits the pellet back up to get these parts out of their body. This usually happens a few hours after they eat.

Barn owl


Owl pellets are usually found at the base of a tree. An owl pellet is a sign that an owl perched nearby.

When owls eat, they basically swallow their food whole. Owls eat meat like mice, rats, small birds, rabbits, and some even eat fish!

A Closer Look

Dissecting, or taking apart, an owl pellet is fun and a great way to learn what owls eat.

What do the clues tell you?


Do you recognize this animal part?

Shoreline Habitat

Shorelines are a busy and important place of transition. They bridge the distance between land and water and are home to many living things. Healthy shorelines also help keep our waters clean by reducing runoff, preventing erosion, and filtering out pollution.

Unfortunately, many of our shorelines have been damaged by human activity and development. Non-native lawn grasses and the spread of invasive species have also harmed our shorelines. We need healthy shorelines to support our waters, local ecosystems, and ourselves!

A Diverse Community

There are many different kinds of living things that can be found in and around healthy shorelines.

Birds

Plants

Invertebrates

Fish

Insects

Reptiles and Amphibians

A healthy shoreline and clean water helps improve recreational activities like fishing, paddling, and bird watching.

Healthy shorelines provide many smaller habitats, increasing biodiversity which strengthens the ecosystem.

What do you see living on the shoreline?

Deep-rooted plants prevent erosion by holding soils in place.

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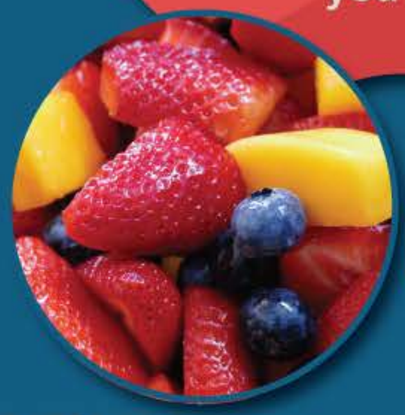
NW-35SS Shoreline Habitat

Bees: Super Pollinators

Bees are very important because they are super pollinators.

Bees pollinate most of the plants that grow the foods we eat every day—like apples, strawberries, peaches, melons, oranges, blueberries, and cherries. Even sugar, vanilla, and chocolate are possible because of bees!

You can thank bees for one out of every three foods you eat!



What does a pollinator do?

Pollinators move pollen from one plant to another—helping plants make seeds.

When a bee lands on a flower, pollen grains stick to its very hairy body. When the bee moves to another flower, some of the pollen falls off. Most plants can't make seeds from their own pollen.

Pollen-covered bumble bee

Pollen-covered honey bee

Honey bees on a pumpkin blossom

Honey bee on apple blossom

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NW-36PS Bees: Super Pollinators

Monarch Butterfly

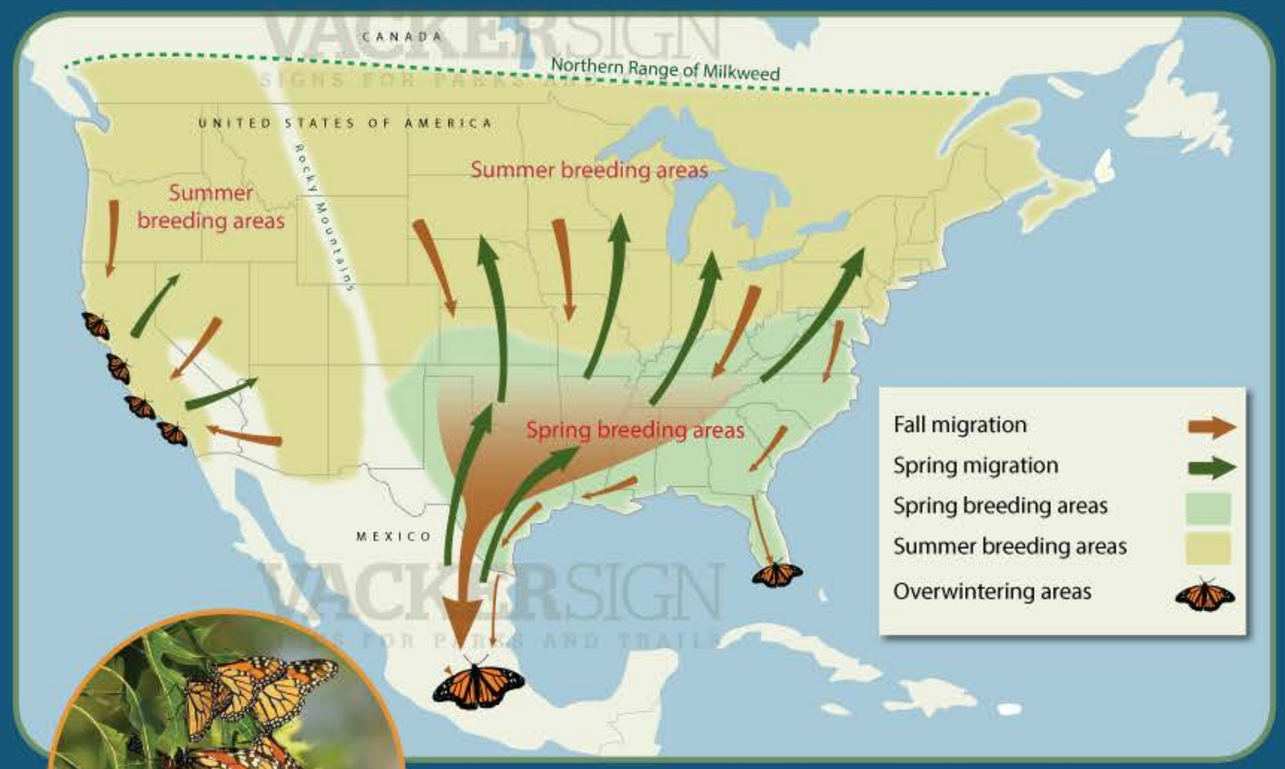
Monarchs are probably the most famous butterflies.

Monarch Life Cycle

Monarchs and Milkweed

Milkweed is one of the only plants in the world where adult monarch butterflies will lay their eggs. Milkweed is also the monarch caterpillar's favorite food!

Monarch Migration



A stop to rest on the long journey

In the fall, monarch butterflies migrate to Mexico to escape the winter chill. In the spring, their offspring will migrate to the United States. They sometimes fly over 2,500 miles to complete their journey!

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NW-37PS Monarch Butterfly

Animal Names

How do animals get their names?

Scientists will often name animals after things they notice about them. Some, like the painted turtle, are named for the way they look. Some, like a pond skater or snapping turtle, are named after a special skill. And some, like honey bees, are named after things they make.

I was named a **red-tailed fox** after the color of my fur and long bushy tail!

If you were a newly discovered animal, what would a scientist name you?

Bluebird

Pond skater

Snapping turtle

Black bear

Honey bee

White-tailed deer

Long-nose gar

Walking stick

Red-headed woodpecker

Painted turtle

????????

NatureWalk

NW-38PS Animal Names

POLLINATOR GARDEN

The flowering plants in the garden provide pollinators with food, a place for pollinators to rest, nest, and even spend the winter!

Nature's Helpers

A pollinator is an animal that fertilizes plants by moving pollen from one flower to another. When feeding on sweet nectar (a sugary liquid that gives them energy), pollen sticks to their body. When they move to the next flower, the pollen goes with them and falls off. This helps the plant make seeds and grow!

Pollen-covered bumble bee

Did you know...

Pollinators are very important to our world. Without them, many plants and foods would not exist. In fact, they are needed to grow of 1 of every 3 foods we grow and eat!

What kinds of pollinators have you seen?

Pollinators come in all shapes and sizes – they can be birds, bees, wasps, ants, flies, mosquitoes, butterflies, moths, bats, and beetles.

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NW-39SS Pollinator Garden

Butterfly Garden

Butterflies are both fun to watch and important pollinators that help plants grow!

The Importance of Butterflies

Flowering plants and pollinators, like butterflies, depend on each other for survival. The butterfly gets nectar (a sweet drink that gives them energy) and the plant gets pollinated, helping it make seeds. Butterflies are very active pollinators and will visit many flowers a day.

Butterflies and Host Plants

Each species of butterfly has a host plant where it likes to lay its eggs and what its caterpillars will eat. The most famous example of this is monarch butterflies whose host plant is milkweed.

What makes a plant good for butterflies?

A plant's color, shape, scent, and bloom time attract pollinators that are just right. Butterflies like:

- Clusters of small flowers
- Bright colors, especially red, yellow, and orange
- Very strong scents
- A lot of nectar to give the butterfly energy

Can you spot these plants in the garden?

NW-40SS Butterfly Garden

Composting

What is composting?

Composting is the natural process of organic matter (anything that was once alive), like food scraps, grass clippings, leaves, and garden waste, breaking down and turning into a nutrient rich fertilizer through the process of decomposition.

Decomposition happens when organic matter rots through the actions of microbes and other living organisms. While these all organic things will decompose on their own, a compost heap is the ideal environment to do so, often making the process faster and more efficient.

Composting Helps the Earth

- Composting organics, like food, reduces the amount of waste that ends up in landfills and incinerators.
- Composting grass clippings, leaves, and other yard waste helps keep our waterways clean by keeping excessive nutrients out of stormwater runoff.
- Use of compost as fertilizer enriches soil with nutrients and helps plants grow healthy and vibrant.
- Compost helps retain soil moisture and conserves water.

NW-41SS Composting

What kinds of things can be composted?

- Fruits and vegetables
- Coffee grounds
- Eggshells
- Yard, farm, & garden waste
- Hair and fur
- Paper products
- Food scraps
- Cereals/chips/crackers
- Brown paper bags
- Small sticks and twigs

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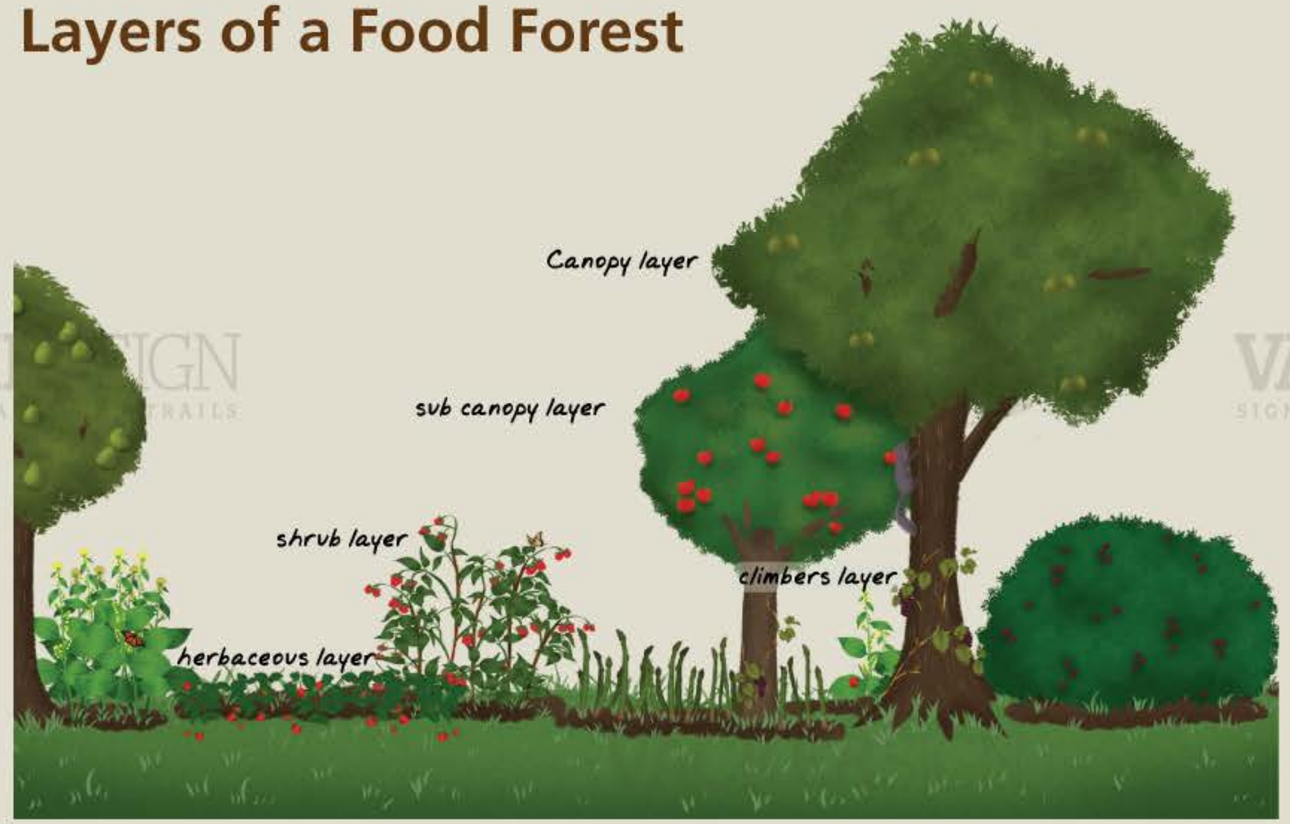
Food Forest

A food forest is a place to forage and enjoy fresh food. In addition, it provides shade, habitat for wildlife and attracts pollinators.

A food forest, sometimes called a forest garden, is a planting that consists of layers of edible plants. The various layers are intended to mimic the layers in a natural forest. As in nature, planting in layers allows more plants to fit in an area and helps prevent one plant type from outcompeting another.

Layers of a Food Forest



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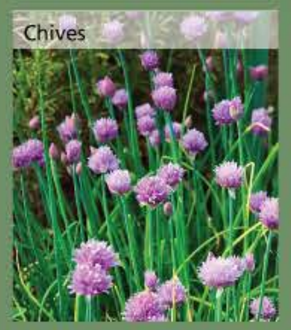
NW-42SS Food Forest

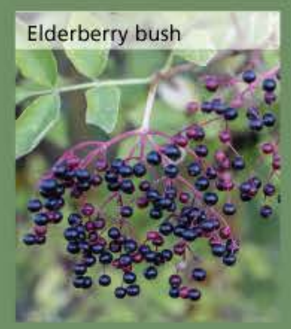
There are many different edible plants located in this diverse food forest. Can you spot any of these?


Strawberries


Asparagus


Chives


Wild plum


Elderberry bush

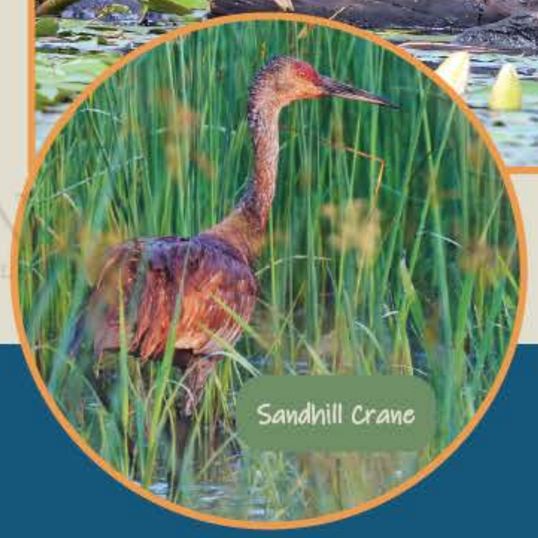

Butternut tree

A Natural Cycle

This food forest will grow year after year without fertilizer or pesticides. The forest will sustain itself through a natural cycle that begins with the sprouting of seeds and ends with old trees dying. In nature, disturbances like strong winds or fire can cause old trees to fall or die. As time passes, fallen tree decay or ash returns nutrients to the soil. With sunlight able to reach the newly exposed forest floor, growth is stimulated and the cycle begins again!

Wetlands

Wetlands are habitats that are flooded by water at least part of the year.



The plants, animals, and other organisms that live in wetlands are well suited to water-logged conditions.

Benefits of Wetlands

Wetlands are critical for our world! Their sponge-like quality filters pollution, helping to purify our air and groundwater. Wetlands also provide critical food and nesting sites for migratory birds and other wildlife. They help our communities by buffering the effects of floods and hurricanes and of course, provide us with places to:

birdwatch, kayak, canoe, photograph, hunt, & fish.

What do wetlands look like?

There are different types of wetlands depending on where they are on the planet and the plants and water that fill them.

Mostly grasses

Marshes

Mostly trees & shrubs

Swamps

Floating peat mats

Bogs

Seasonal small pools

Vernal Pools