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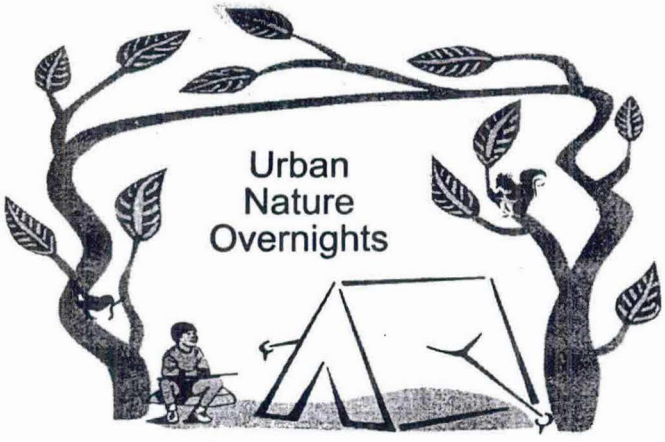
OPEN MEADOW
ALTERNATIVE SCHOOLS

The **Open Meadow CRUE** (Corps Restoring the Urban Environment) is an alternative high school program which serves youths ages 16-21. CRUE helps students develop a positive work ethic and job skills, along with a healthy lifestyle and respect for others. The goal of CRUE is to cultivate self-directed learners who are responsible for themselves and the environment.



Urban Nature Overnights (UNO) introduces the basics of camping and outdoor recreation to urban youth ages 8-11. UNO strives to provide a safe and enriching experience with the natural world, to develop an appreciation of public lands, and to build an awareness of wildlife conservation and stewardship issues.

UNO and **CRUE** are coming together to write this guide because both programs have a common interest in protecting and restoring the environment and instilling that value in urban youth. Our goal is to help youth develop an appreciation for the beauty of nature, and to help them realize the impact that humans have on the environment, and to teach them how to protect and preserve our wildlife and our natural ecosystem.

USING THIS GUIDE

This guide will teach you some activities you can do to increase habitat for wildlife and protect our natural environment.

Before you come to an Urban Nature Overnight (UNO), your group will use the site survey to determine which project you want to do.
We will do a project while you're here. If your project involves building a bird or bat house, you will take them with you and place them in the habitat near your school or center. You will be able to observe the changes your restoration project has in the environment.

Whether you build a bird house, learn how to identify native plants, or make animal tracks, you are making a difference in our environment. We have included instructions for all the activities so you can try them on your own.

Copyrights and Acknowledgements

Bird house reprinted courtesy of Oregon Department of Fish and Wildlife.

Bat house reprinted courtesy of Bat Box Research Team
Cleveland High School, Portland, Oregon.

All other illustrations by Christie M. Haynes.

References we used while researching this guide:

The Bat House Builders Handbook- Bat Conservation International (for more information about bats, visit their website at www.batcon.org).

Naturescaping: A Landscaping Partnership With Nature– Oregon Department of Fish and Wildlife (www.dfw.state.or.us).

Portland Plant Lists- Bureau of Planning, City of Portland, Oregon.

Plants of the Pacific Northwest Coast by Jim Pojar and Andy MacKinnon.

Animal Tracks by Steve Engel. (Tracktiles@aol.com)

Project Sponsors:

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First Things First...
SITE SURVEY

When you are exploring a place to do a restoration project, there are many unfamiliar things going on all around you. If you plan on doing a restoration project, you should learn what is going on in the area so you can see how it changes after you have restored it. The process of learning about a site is called site survey.

In order to survey your site correctly and accurately, you will need to do a couple of things BEFORE and AFTER your restoration project:

BEFORE

- Ask Questions
- Draw a Map showing plants, water sites, layout of the area.

BIRDHOUSE BUILDING
What kinds of birds are here now?
Would this site make a good bird habitat? Why?
Where will we put our birdhouse?
Indicate where birds could find food, shelter, water on your map.

BAT HOUSE BUILDING
Are there bats here now?
Would this site make a good bat habitat?
Is there a water source nearby?
Are there plenty of insects?
Is there a good place to hang our bat house?
Indicate your findings on a map.

NURSE LOGS
Is there a forested site to place our nurse log after we build it?
Is there any nurse logs on the site now?

INVASIVE PLANT REMOVAL
Are there invasive plants growing on the site that need to be removed?
Where are they?
Include them on your site map.

NATIVE PLANTS
Are there native plants growing on the site?
Where are they?
Are there good places to plant new native plants?
Which ones and where will we place them?

AFTER

- Ask Questions.
- Notice anything that has changed.
- Draw a new Map.

BIRD HOUSE BUILDING
Did we pick a good spot for our bird house?
What kinds of birds are here now?
Has anything changed?
Indicate food, shelter, water on your map.
Is the bird house out of reach of predators?

BAT HOUSE BUILDING
Are there bats here now?
Did we pick a good spot for our bat house?
Have we created a good bat habitat?
Has anything changed?
Is the bat house out of reach of predators?

NURSE LOGS
Did we pick a good spot for our nurse log?
Are the plants growing and getting enough water?
Are there decomposers, like mushrooms, on the log?

INVASIVE PLANT REMOVAL
Are there still invasive plants growing on the site that need to be removed?
Where are they?

NATIVE PLANTS
Did we find good places to plant new native plants?
Are the plants growing well and getting enough water?

Surveying is Rewarding

Surveying your work sites will make restoration much more fun. When you can see the results of your work, you know that you are making a difference to mother nature and you want to do it again and again.

Surveying is a Life Skill

After you have surveyed a few times, you might begin to form a habit of surveying all of your surroundings in life. This is a good thing. The great outdoors is not the only place to observe your surroundings, observing the way different species of people react to one another can be just as fun and can make you a very aware person.

IDENTIFYING NATIVE PLANTS

Why is Native Plant Identification important?

Native Plants…

- **Support Wildlife.**

Native plants support 10 to 15 times more wildlife than non-native plants. Native plants help create important habitats for endangered, threatened and rare plants and animals.

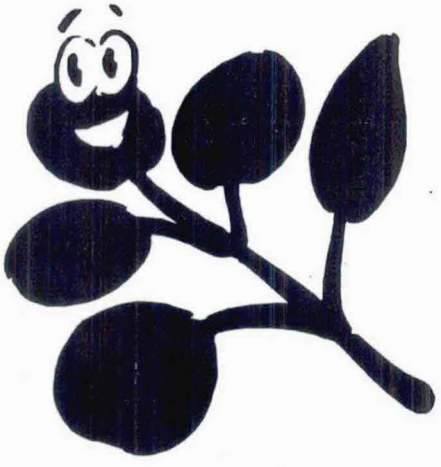
- **Help keep our air and water clean.**

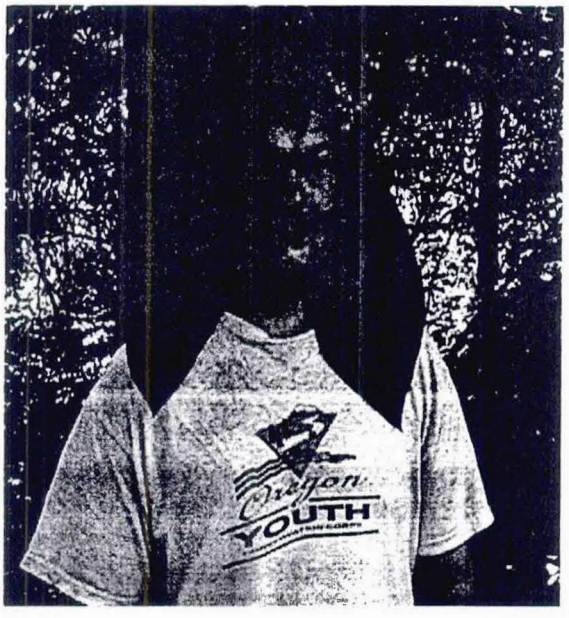
Plants filter out sediment and pollutants before they enter streams and rivers. The roots from the plants help hold up the banks along streams and stop erosion.

- **Naturally grow here.**

Since they naturally grow there, they require less care than non-native plants do because they are already adapted to our ecosystem.

If you learn to ID and protect our native plants then you are learning and protecting a big part of our natural heritage. And you will help ensure a natural habitat for our native plants and animals.





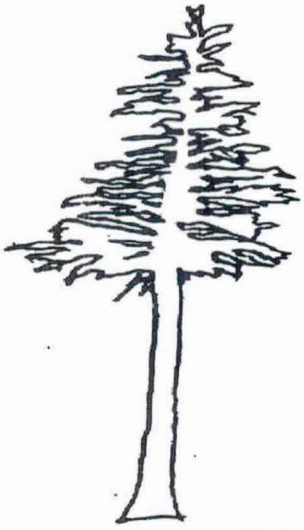
Douglas fir

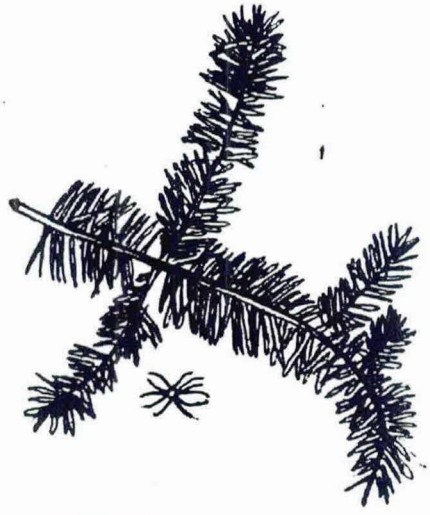
Pseudotsuga menziesii

What it looks like:
It's huge (100-250 feet tall!) and grows quickly.
Douglas fir has a tall, straight trunk and corky, brown bark.
Cones are 3-4 inches long, with "mouse tails" sticking out of them.

Where it grows:
The entire Pacific Northwest, especially in forested areas.
It grows too fast to plant near homes or buildings.

Why wildlife like it:
Seeds are eaten by birds and small mammals.
Deer and grouse eat the new shoots.
Douglas Fir also provides shelter, nest sites, and insects for food.





Use this space to make a crayon rubbing

Kinnikinnick

Arctostaphylos uva-ursi

WHAT IT LOOKS LIKE:
Ground cover that can grow to 12 feet long, but not more than eight inches above the ground.
Small evergreen leaves and thin, gray bark that peels off to reveal smooth, red bark.
Flowers: are small, drooping pinkish-white bells from April to June.
Fruits: small bright red berries that stay through winter.

WHERE IT GROWS:
Full sun to partial shade. Well-drained rocky or sandy soil.

WHY WILDLIFE LIKE IT:
Kinnikinnick hosts butterfly caterpillars.
Fruits are eaten by birds, small mammals, deer, elk, and bears.

Use this space for a crayon rubbing

Red Flowering Currant

Ribes Sanguineum

WHAT IT LOOKS LIKE:

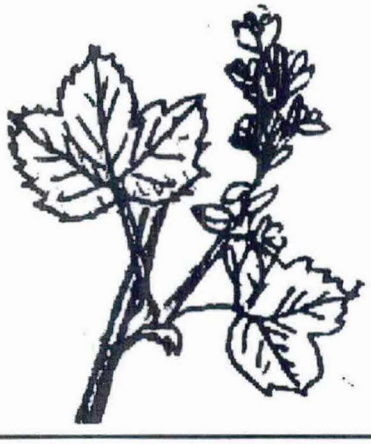
Grows 3-12 feet tall.
Reddish-brown bark.
Leaves have saw-toothed edges and slightly hairy undersides.
Flowers are tube-shaped, and light pink to dark red.
Berries are round and hairy, and dark blue to black colored.

WHERE IT GROWS:

In wooded or open areas.
Dry to slightly moist soils.
Grows in full sun to partial shade.

WHY WILDLIFE LIKE IT:

Flowers are attractive to hummingbirds and butterflies.
Many birds, small mammals, deer, and elk feed on its berries.



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Low Oregon Grape and Tall Oregon Grape

Mahonia nervosa *Mahonia aquifolium*

WHAT IT LOOKS LIKE:

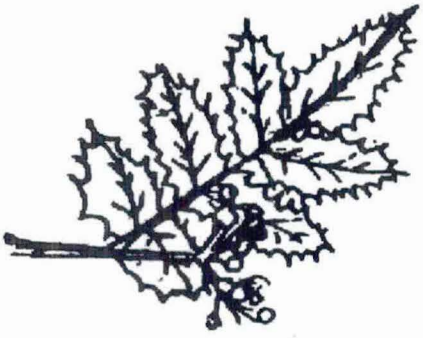
Leaves have prickly edges, similar to holly.
Bark, wood, and roots are yellow.
Low Oregon Grape is less than 2 ft tall.
Tall Oregon Grape can grow up to 10 ft tall, but is usually less than 5 ft tall.
Flowers are yellow and grow in clusters.
Berries are blue and grow in bunches like grapes.

WHERE IT GROWS:

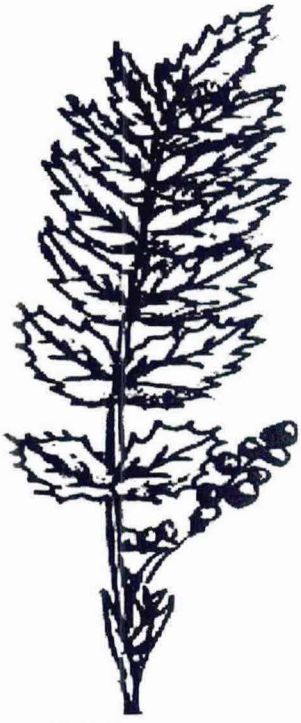
Tall Oregon Grape likes sunnier, open sites with drier soil.
Low Oregon Grape prefers more moist soil, in shadier spots.
Both plants can grow in sun or shade.

WHY WILDLIFE LIKE IT:

Flowers are attractive to butterflies.
Berries are a favorite treat of many birds and mammals.



Low Oregon Grape



Tall Oregon Grape

Use this space for a crayon rubbing

Salmonberry

Rubus spectabilis

WHAT IT LOOKS LIKE:

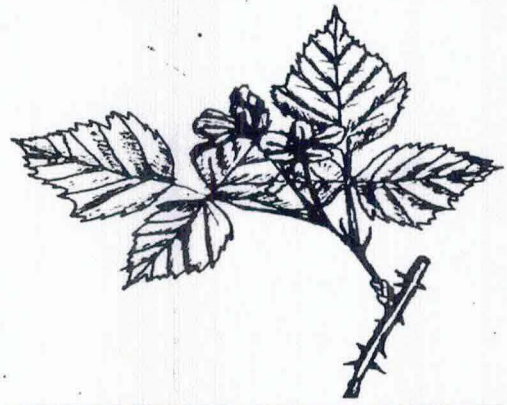
Grows 3-10 ft tall.
Stems are weak, with few thorns.
Bark is light to golden brown, and shreds easily.
Leaves are wrinkled and dark green, with sharp-toothed edges.
Flowers are pink to dark purplish-red, and are about 1 and ½ inches across.
Berries resemble raspberries and are yellow to red or deep purple.

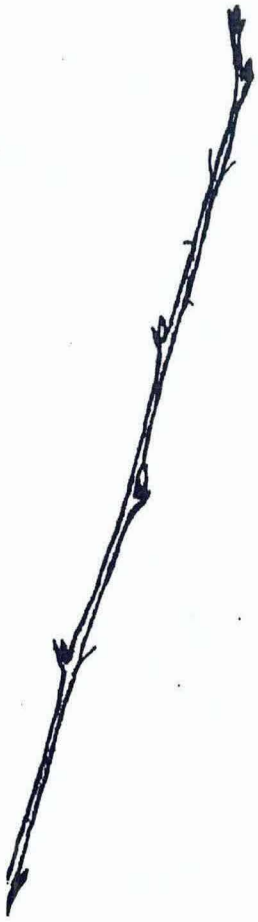
WHERE IT GROWS:

Moist soil.
Stream banks, marsh and lake edges, and wet areas that have been logged.

WHY WILDLIFE LIKE IT:

Provides cover for animals.
Berries are food for deer, elk, bears, birds, and other small mammals.
Flowers supply nectar to bees, butterflies, and hummingbirds.





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Blue Elderberry

Sambucus cerulea

WHAT IT LOOKS LIKE:
Grows up to 20 ft tall.
Bark is reddish brown with bumpy lines.
Leaves are narrow and pointed.
Leaves range in size from 6-12 inches long.
Each stem has 5-9 leaves.
Flowers are small and white, and are packed into thick, flat-topped clusters.
Fruits are dark blues to black.

WHERE IT GROWS:
Usually grows in clearings.
Moist to dry soil.

WHY WILDLIFE LIKE IT:
Twigs and leaves are favorite snacks of deer and elk.
Hummingbirds and butterflies are attracted to its flowers.
Many birds and other small mammals eat elderberries.

OTHER INFORMATION:
Berries are not poisonous to people, but can cause illness if eaten raw. The roots, stems, and leaves are poisonous to humans, and should not be eaten. Elderberries are sometimes used to make jams and wines.

Use this space for a crayon rubbing

Red Elderberry

Sambucus racemosa

WHAT IT LOOKS LIKE:

Grows up to 20 ft tall.

Bark is reddish brown with bumpy lines that are more defined than they are on blue elderberry.

Each stem has 5-7 leaves.

Flowers are small and white; they grow in pyramid-shaped bunches.

Berries are small, round, and bright red.

WHY WILDLIFE LIKE IT:

Flowers are appealing to butterflies and hummingbirds.

Many birds and small mammals eat red elderberries.

Deer and elk love to eat the twigs and leaves.

OTHER INFORMATION:

The same as with blue elderberry, these berries are edible, but should be cooked before eating. Also, the bark, leaves, roots, and stems are poisonous to people.

Crayon Rubbing

Salal

Gaultheria shallon

WHAT IT LOOKS LIKE:
Evergreen that grows 3-7 feet tall, with branches that zigzag.
Leaves are thick, oval, glossy, pointed, with fine teeth.
Flowers are small (1/4 inch) pinkish to white urns that hang from stalks in loose clusters.
Berries are small (under ½ inch), dark purple to black that hang in clusters.

WHERE IT GROWS:
Prefers dry places or raised places in forested wetlands. Full sun but does best with some shade.

WHY WILDLIFE LIKE IT:
Provides cover for birds and small mammals. Hosts butterfly caterpillars. Flowers attract butterflies. Fruits are eaten by birds, deer, bear, and humans.

Crayon Rubbing

SALVAGE NATIVE PLANTS!

What is Plant Salvaging?

Salvaging a plant is removing it from a place where it would be destroyed, then replanting it in another spot where it can grow safely.

Why should you salvage?

We don't want to kill native plants because native plants are very important to humans and wildlife. Native plants provide oxygen for people and animals, a habitat for wildlife and creates biological diversity in the environment. In order to help keep native plants from going extinct, we need to salvage them. Salvaging is a way to protect native plants from getting hurt by new buildings and other developments. If we did not salvage, then almost every new building we built would result in dead natives.

What do you salvage?

Only native trees and shrubs, such as Douglas Fir or Oregon Grape should be salvaged. Invasive and non-native plants like English Ivy or Himalayan Blackberry should not be salvaged (refer to the sections on Native Plant I.D. and Invasive plant removal for what you should and should not salvage).

When do you salvage?

Salvaging should be done when,

- It is safe to do so.
- The salvager has received permission from both their parents and the landowner.
- A plant would be destroyed if it were not salvaged.
  You have a new home picked out for your salvaged plant.

Where do you salvage?

- There are native plants that are in danger of being destroyed
- Construction sites or other development that will replace native plants.
- The conditions are healthy (shady, moist, aerated soil with plenty of organic matter).

Once you have found a plant to salvage and you have permission to do so, you will need some tools and some instructions to salvage the plant safely and successfully.

TOOLS

- A sharp shovel (a dull blade will smash the roots).
- Wet burlap sacks, lined with wet leaves and/or mulch.
- Pruning shears (to cut large roots).

HELPFUL HINTS BEFORE YOU BEGIN

- Try to keep the plant out of the ground for as little time as possible.
- Have all materials ready and read all instructions.
- Make sure your plant is alive! Scrape away some of the bark with your thumbnail and if you see green, it's alive.

Digging up the Plant

When digging a plant up, start by thrusting your shovel into the ground about 8-12 inches away from the stem of the plant so that you do not damage the main root. Work your way around the plant's stem with the shovel, always keeping the same distance between the stem and the blade.

Once you have cut a circle around the entire plant, gently work the shovel underneath the plant being careful not to cut too many of the smaller roots.

Once the plant is loose enough, use the shovel to lift the entire plant (roots and all) out of the ground. Support the stem of the plant with your free hand while it is out of the ground. Now place the plant's roots inside the sack with the stem sticking out the top of the bag. Cover the roots with the mulch and the wet leaves that are in the burlap sack. Make sure that the mulch and debris in the bag are moist, then tie off the burlap sack around the plant stem.

Replanting the Plant

You have already dug up your salvaged plant and have decided on a safe place to put it. Now it is time to put it back in the ground.

For starters, your location must be shady and moist with rich soil in order to consider it a safe place to plant a salvaged plant. Always check to make sure that you are not planting on private property before you begin! Try to match the plant's new environment to its old home as closely as possible. Plant it near the same kinds of plants that it was growing by, and try to keep it in the same amount of shade or sun. If this describes your planting site, then you can begin.

Dig a hole that is big enough for you to place the plant into without the roots getting crushed. The hole must be deep enough for the plant can extend its roots after it is buried. Place the plant in the hole with the burlap bag still on it, now take the burlap bag off of the plant with the plant still in the hole. Support the stem of the plant while burying its roots and make sure that the plant is still standing straight up after it has been buried. After you completely bury the roots of the plant, make sure the ground around the stem has been packed down well, but don't pack it down too much, or the roots will not be able to receive air and water though the soil.

Congratulations! You are now done transplanting your salvaged plant.

After the Transplant

If something is going to go wrong, it is probably going to happen in the next few weeks, so check up on your plant every few days or so to see if it is getting plenty of water and sun.

MAKE A NURSE LOG!

The word nurselog is a term that is used to describe a rotting or rotten tree that has fallen down on the forest floor. The reason that they are called nurse logs is because they provide food and a home to all kinds of insects, plants, and animals. Basically, they help keep a forest healthy by giving back what they have taken. Nurselogs are full of nutrients and make a perfect spot for plants to grow.

How it works:
At first, all the layers of the tree are still holding strong, so the only things that make their home on the new nurselog are bark and wood-boring insects, some fungi, and bacteria. These are known as decomposers. Decomposers help break things down into smaller pieces, and help them to rot.

Once the decomposers start crumbling away the thick outer bark, plants such as ferns and salal make homes in the exposed heartwood. The insects that have been digging tunnels in the tree have left great spots for plants to sprout and shoot their roots into the nurselog. Eventually, as the bottom of the tree crumbles away, small trees and plants will extend their roots down to the forest floor.

As soon as these plants make themselves comfortable in the nurse logs, centipedes, slugs, snails, and other bugs move into the neighborhood. Beneath the log, shrews, shrew moles, voles, and salamanders dig tunnels and burrows into the decayed wood and make new homes in the tree.

The tree keeps rotting as all of these animals and plants grow into their new homes, and eventually, the tree will collapse on itself. As it decays more, it turns into mulch and continues to help the new life in the forest.

Grow your own nurselog!
A nurselog can look great in your yard or garden, and will create a home for wild animals and plants, not to mention all of the extra oxygen that will come from your nurselog.

Do's and Don'ts for Nurse Log Building

DO	DON"T
1. Ask for permission before taking a log. 2. Use a tree native to your area. 3. Pick a log that is 4 ft. long or longer, and that is no less than ¾ ft. around. 4. Plant ferns, salal, etc. in the log. 5. Use organic fertilizer.	1. Don't collect logs from the beach 2. Don't buy a pressure-treated or lumber log 3. Don't cut down a tree just to make a log 4. Don't plant around or beneath the log 5. Don't water plants growing from log 6. Don't use pesticides or non-organic fertilizer

How does a tree work, anyhow?

A tree is made up of three basic parts. The roots, the trunk, and the leaves and branches. It sounds pretty simple, but each part of the tree does different important things. The trunk alone has five different layers! Here's how it works:

The Outer Bark:

The bark on the outside of the tree protects the insides from harsh weather, insects, animals, and even fire, in some cases.

The Inner Bark:

The inner bark, which is also called the phloem (pronounced flo-um) helps the tree to feed itself. There are a bunch of tubes inside of a tree that work as a transportation system for food and water. The phloem sucks sugar, nutrients, and water down from the leaves, into the trunk, and all the way to the roots.

The Cambium

The cambium is the only living part of the tree. This is where all of the growing occurs. The coolest part about the cambium layer of the tree is that it's only a single cell wide, which means that it's so tiny, you can't even see it!

The Sapwood

The sapwood, which is also called the xylem (pronounced zi-lem) is another part of the tree's transportation system. Water and nutrients are pulled up from the roots of the tree by the xylem, and pass all the way up the tree trunk to the leaves and branches.

The Heartwood

The heartwood acts like the tree's spine. It's job is to hold up the tree. It's made out of old sapwood cells.

The Crown

The crown is another name for the leaves and branches of a tree. Its job is to filter dust and other particles from the air. It also reduces the impact of the rain on the soil, and cools the air by providing shade.

The Roots

The roots anchor the tree in one place, and they help the tree to feed itself by absorbing water and nutrients from the soil.

Photosynthesis

Trees create their own food through a process called photosynthesis. This all happens in the leaves of the tree. Leaves contain a chemical called chlorophyll, which allows this process to happen. The tree uses the sun's energy to take carbon dioxide from the air, and water from the soil, and turn it into sugar and oxygen. The sugar is food, for the tree, and the oxygen is useless for the tree, so it is released into the air, which is great for people, because we have to have oxygen to breathe! Pretty neat, huh?

REMOVE INVASIVE PLANTS!

What are they?

Invasive plants take over native plants by growing quickly and hogging resources. Most invasive plants do not grow naturally in this area, usually they are brought here from other countries. In this section, we will cover 4 major invasive plants:

English Ivy
Himalayan Blackberry
Scotch Broom
Japanese Knotweed

Identifying Invasive Plants

English Ivy

Many people have used Ivy to decorate their gardens. It grows very aggressively and will take over an area in a short period. English Ivy usually forms a dense mat on the ground and it winds itself around other plants that it comes in contact with. The leaves are shiny, green and have five points. When Ivy flowers, the flowers are white and they produce dark blue or black berries. The leaves have a waxy coating on the shiny side.

Himalayan Blackberry

Blackberry is best known for its delicious berries which it produces every summer. It grows very aggressively and has large sharp thorns. Blackberry can grow as high as 8 feet tall and much higher if given something to grow on top of. Blackberry flowers are white to pinkish white. The leaves of the blackberry plant are oval shaped and have serrated edges.

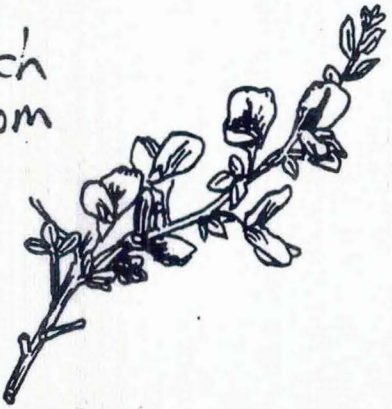
Scotch Broom

Scotch broom has a strong main stem with white stripes on the bark. Its flowers are bright yellow and it grows 3-10 feet tall. Scotch broom is bushy and it produces dark, hairy, seed pods that look like pea pods. The leaves on Scotch Broom are very small.

Japanese Knotweed

Knotweed grows in large bushy stands anywhere from 4 to 8 feet in height. It only grows in moist soil. It has large bright green leafs that range from oval to heart shaped but always come to a pointed tip. The leaves have smooth edges and can be as long as 6 inches. The flowers are white and grow in clusters.

Scotch Broom



Himalayan Blackberry

How do You Remove Invasive Plants?

English Ivy

It is most important to remove the roots of the Ivy plant in order to prevent regrowth. Ivy spreads underground through runners. If runners are found, they should be pulled up just like a root. When Ivy is found growing up a tree, clip any and all of the vines on the tree and pull out the roots.

Himalayan Blackberry

Blackberry can be regulated by cutting down the branches every year, however, if the roots of the blackberry are not dug up and removed, it will continue to grow back every year. Therefore, the best way to remove blackberry is to get the roots.

Scotch Broom

Scotch Broom can be controlled by cutting it down every year, but much like all other invasive plants, the way to ensure that it does not grow back is to uproot it. Care should be taken not to drop the seed pods off of the plant and onto the ground because this will result in more plants.

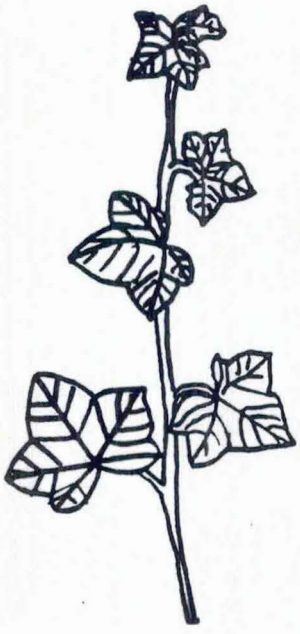
Japanese Knotweed

Although the roots are difficult to remove, they should be removed if possible. A good alternative is to cut down the plant above ground and do that every year for 3 years to give the natives a head start on this invasive plant.

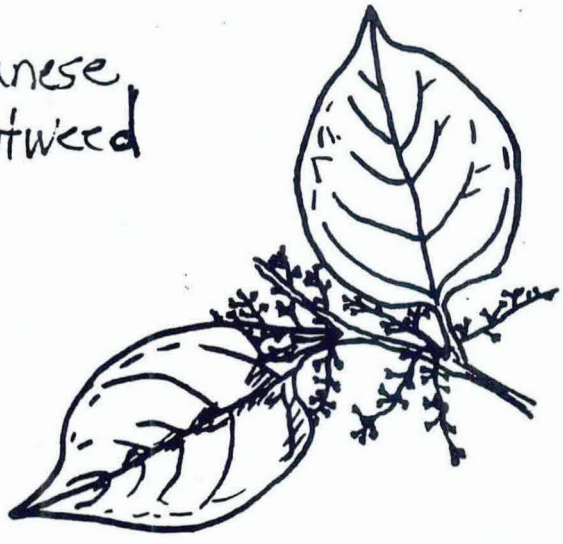
Conclusion

Invasive plants are a very serious problem that threaten our native plants, however, **invasive plants can be stopped**. It is going to take a strong effort from everyone to stop invasive plants from thriving in our native habitats. Besides invasive removal, your most important job is to teach others about invasive plants.

English Ivy



Japanese Knotweed



ANIMAL TRACKING!

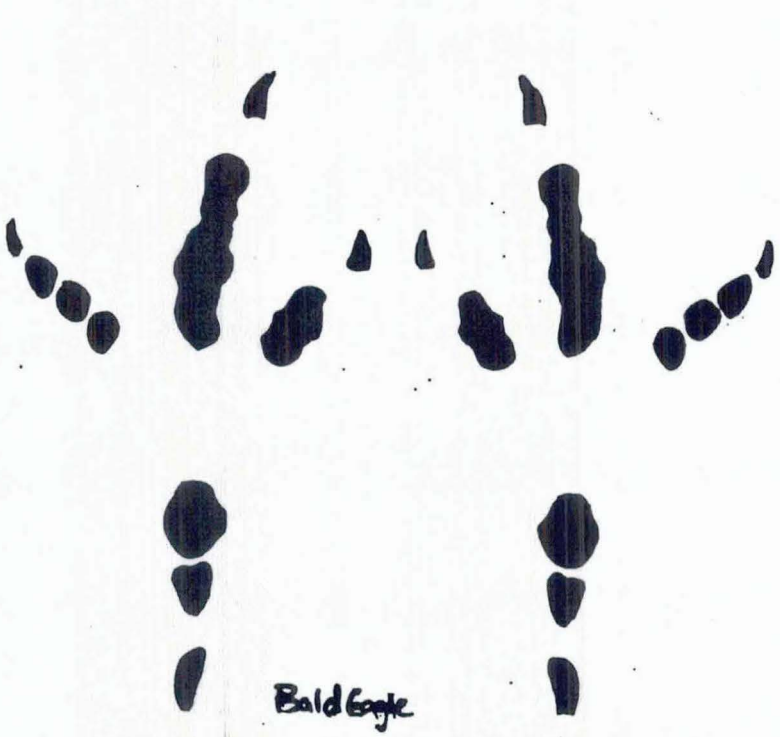
Tracking animals can be fun, but it can also be a little tricky. You can't just start looking for an animal and expect to find it. There are certain techniques that people use when tracking animals. First of all, you should know a few things about the animal that you are going to track, such as what type of environment it likes, the kind of food it eats, and what their homes, shelters, and tracks usually look like.

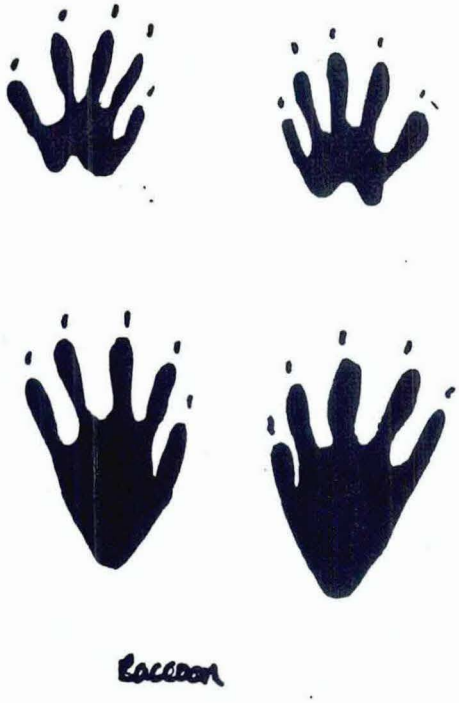
When you start to track an animal you have to be very quiet so you don't scare the animals away. You also have to listen with "deer ears" to hear any animal noises. (Create deer ears by cupping your hands around your ears to amplify noises.) When you walk around you have to do it slowly and quietly. If an animal looks at you, don't move until it looks away from you. You also have to keep your eyes open and look with what is called "splatter vision."

Most People focus on one thing when they are looking around, but when you use "splatter vision," it allows you to see a lot more of your surroundings. " Practice using "splatter vision" by sticking both of your arms straight out from your sides. Now keep both your eyes straight while using your peripheral vision to see your arms. This comes in handy when tracking animals.

What do you look for when tracking animals? You can look for Scat, (animal droppings) sounds, tracks, shed skin, fur, feathers, slime trails, or spider webbing.

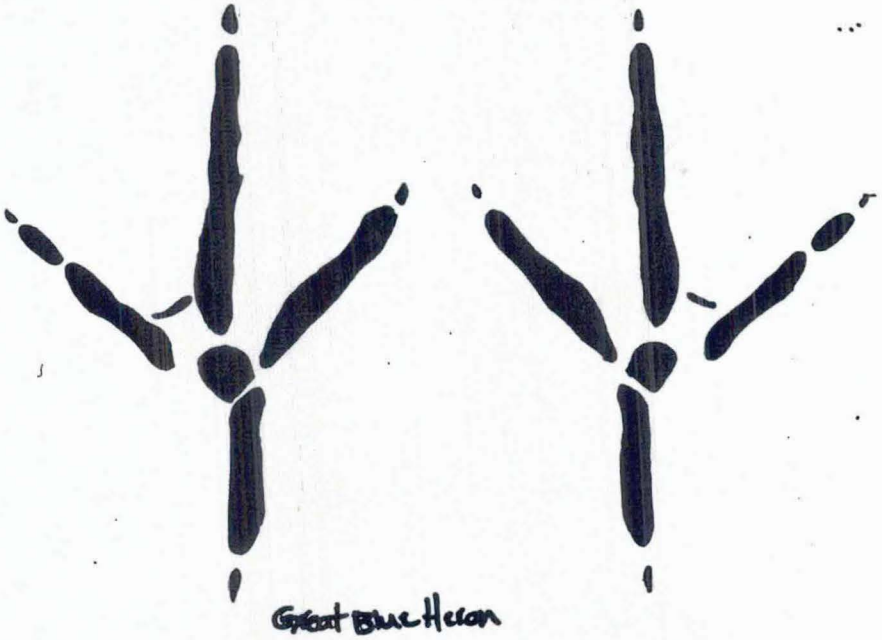
Here are a few examples of some animal tracks you might want to keep your eyes open for.



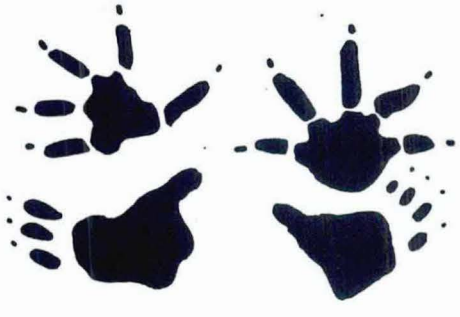


Coyote

Riverotter



Great Blue Heron



Opossum

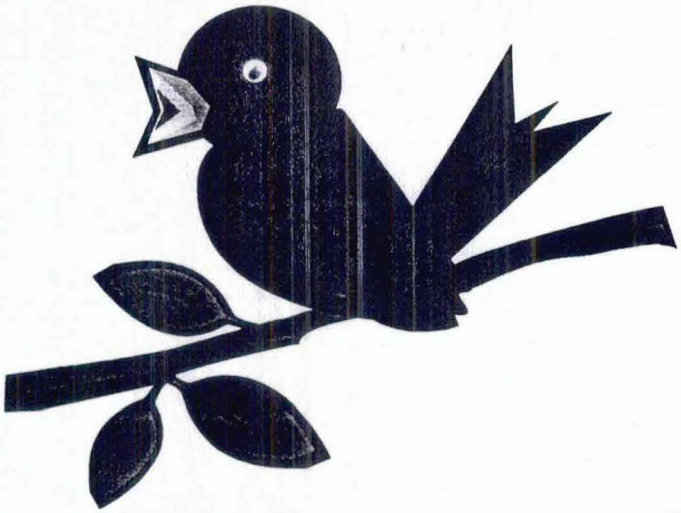
BUILD A BIRD HOUSE!

Why is it important to build birdhouses?

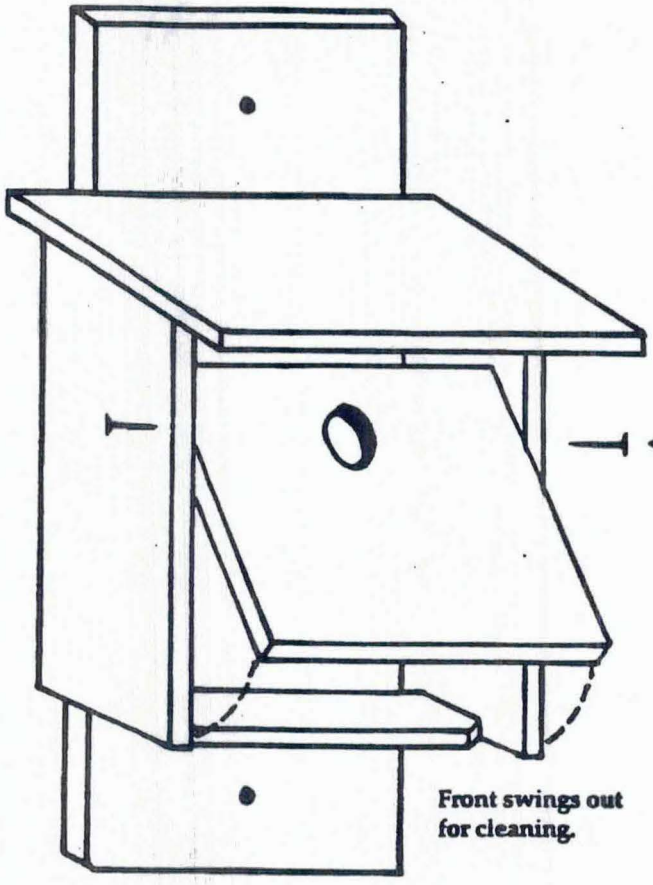
It is important to build birdhouses because it gives migrating birds a place to rest and eat. It is getting harder and harder for birds to survive their long migratory journeys because the natural habitats that provide both food and nesting spots for the birds are disappearing fast from both sides. As a direct result the amount of songbirds we see have drastically gone down. If we start building birdhouses for these migratory birds maybe we can get the numbers back up.

Placement in habitat

Before you build your birdhouse make sure you have a decent habitat to put it in.
You will have to decide what type of birds you want to attract. Some birds like sun while others may like the shade. Cats play a big role in the declining numbers of songbirds. When you set up your birdhouse make sure it is placed away from any bushes or spots that a cat could easily perform a "sneak attack." Place the birdhouse above or in a thorny bush. Birds can easily get through without being scratched by the thorns but cats would most likely avoid the area.



SONG BIRD NEST BOX



Specifications:

1. Hole must be exactly 1- 1/2 inches in diameter and 1-1/8 inches from top.
2. Cut corners of bottom to allow for drainage, and recess 1/4 inch (optional).
3. Leave space between top and front to allow for ventilation.

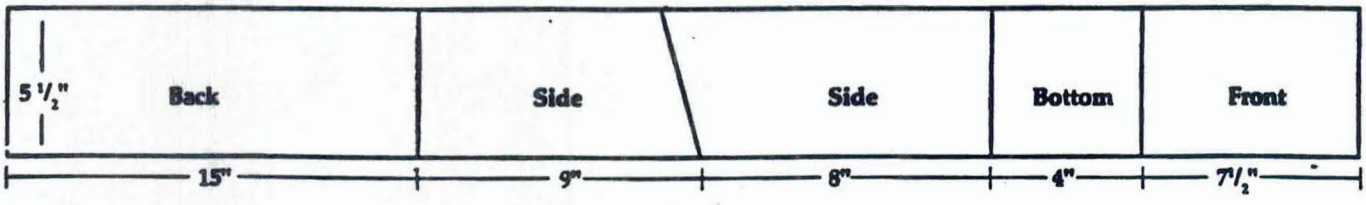
Materials:

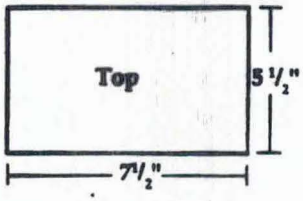
Use 3/4 inch pine, cedar or redwood lumber and leave unpainted. Assemble with 1-3/4 inch galvanized aluminum nails or staples.

Each box requires 48 inches of 1x6 and 7 inches of 1x8. One hundred boxes require 188 bd. ft. of 1x6 and 40 bd. ft. of 1x8. Each box requires 18 nails.

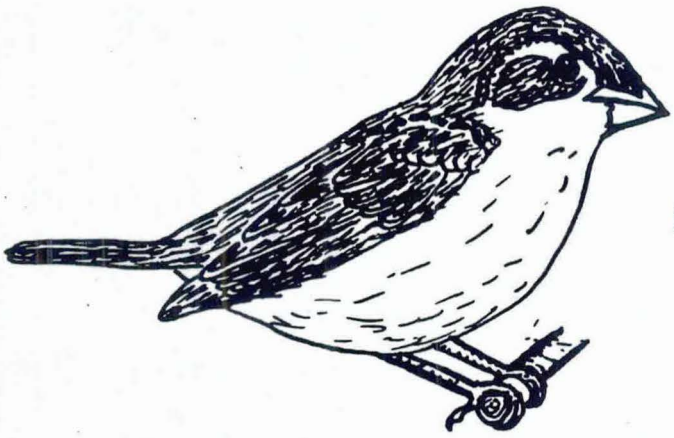
Place box in open, sunlit area, 5 to 10 feet above the ground, on fence posts or trees.

Cutting Instructions:





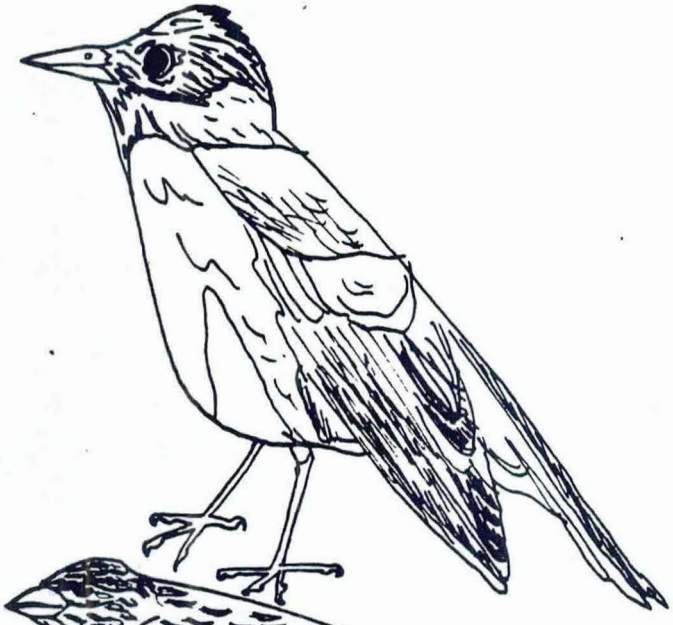
Some Birds You Might Attract to your Song Bird Nest Box



English house sparrow

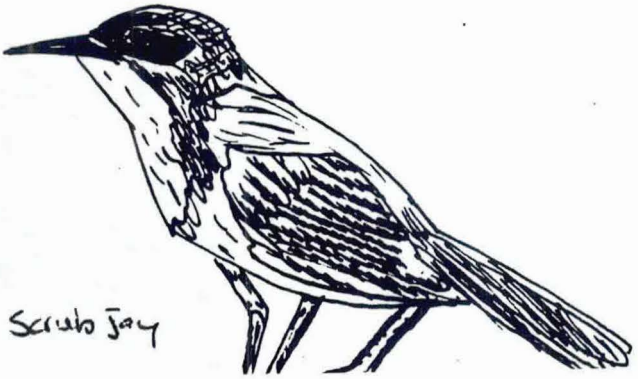
European Starling

American Robin



Song sparrow

House Finch



Scrub Jay

BUILD A BAT HOUSE!

I know what you're thinking. Why would I want to invite bats into my yard? Bats are creepy crawly creatures that suck blood and attack people. Right? Well, you're wrong! Here are some myths and facts about bats.

Myths	Facts
• Bats suck blood and turn into vampires.	• Most bats eat insects and fruit! • There is a species of bats that does drink blood, but they draw from animals, and do not kill them.
• Bats are dangerous, gross, creepy, etc	• Monster movies may try to trick you into thinking that bats are scary, but in actuality, bats are gentle mammals.
• Bats are useless animals	• Bats play a big role in natural ecosystems! They eat harmful insects, pollinate tropical plants, and disperse seeds.
• The world is overrun with bats	• Bat populations are declining because of insecticide use, and the disturbance of their homes.

Tips before you begin:

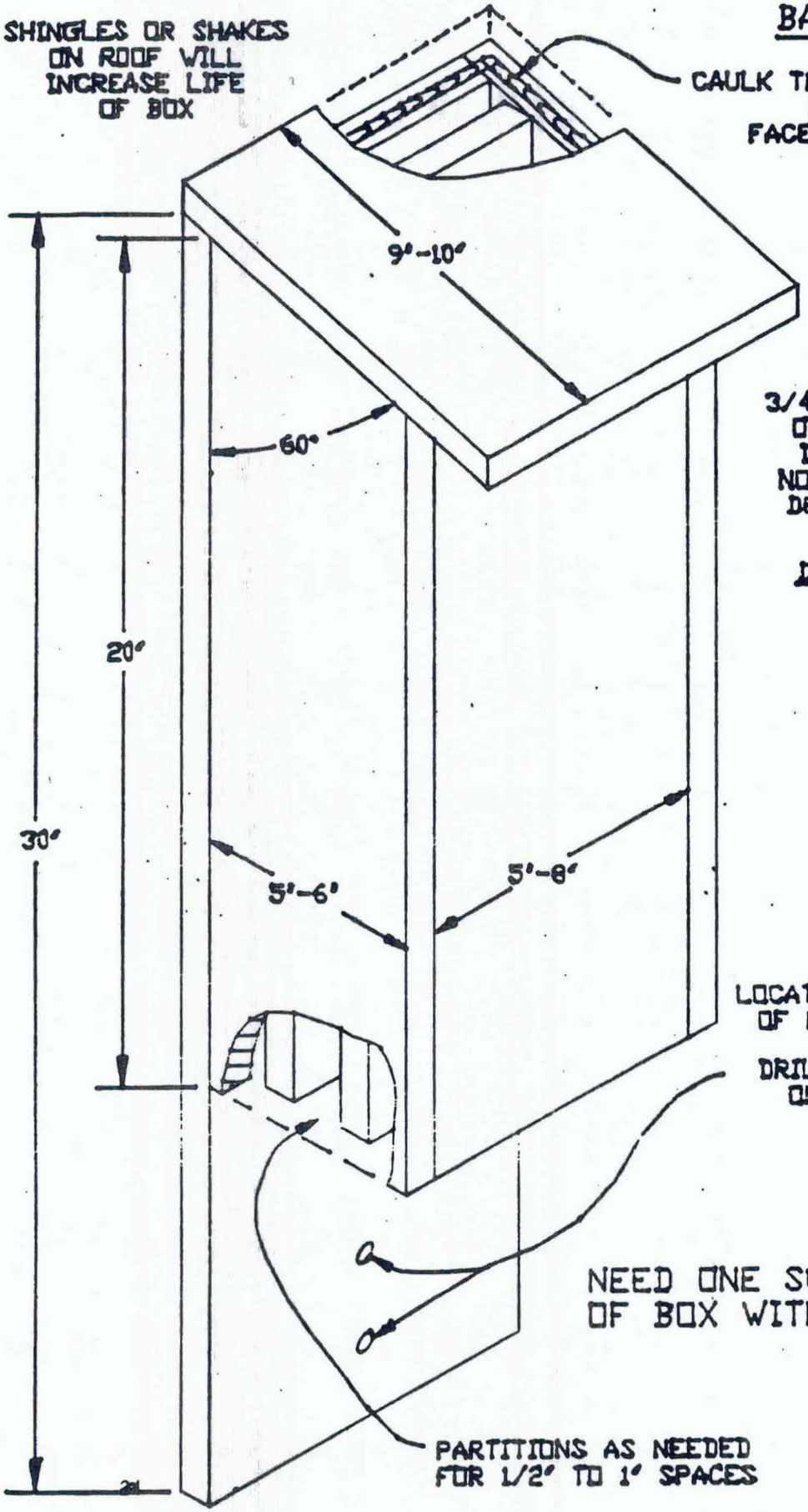
1. Plan to attach your bat house to a tall pole or the side of a house or barn
2. Try to make sure that your bat house is at least 20-25 ft away from trees so that bats are safe from predators.
3. Put your bat house in a spot that gets at least 10 hours of sun a day.
4. Bat houses are safest when they are at least 10-12 ft off of the ground so predators can't harm the bats.
5. Make sure that nothing is attached to the bottom of your bat house so that droppings and other things don't clutter up the house.

So, now that you know a little bit more about bats, let's learn how to make a small economy bat house. Be sure to ask an adult for help with this project.

BATS LIKE IT HOT

SHINGLES OR SHAKES ON ROOF WILL INCREASE LIFE OF BOX

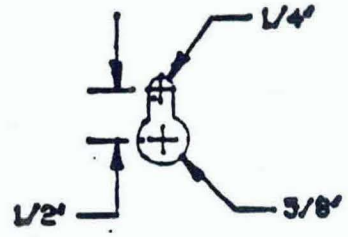
CAULK TOP SEAM TO MAKE AIRTIGHT
PAINT ROOF BLACK
FACE S.E. FOR MORNING SUN



MATERIAL

3/4" ROUGH SAWN CEDAR OR OTHER UNTREATED WOOD. IF UNTREATED WOOD IS NOT AVAILABLE, CUT 1/16" DEEP SAW KERFS ON ALL INTERIOR SURFACES.

DO NOT PAINT INTERIOR



HANGING HOLES

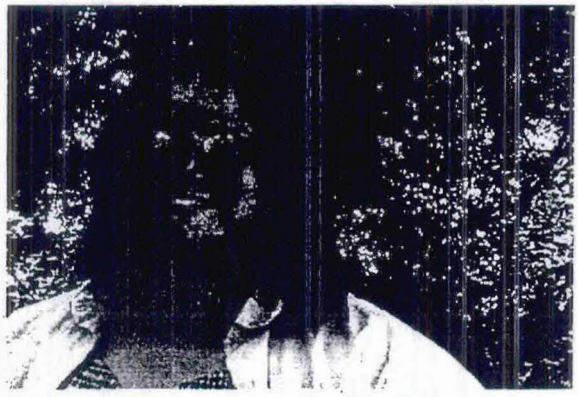
LOCATE KEYHOLE ON CENTERLINE OF REAR PANEL, 6" FROM TOP

DRILL TWO 3/16" DIA. HOLES ON CENTERLINE OF REAR PANEL EXTENSION

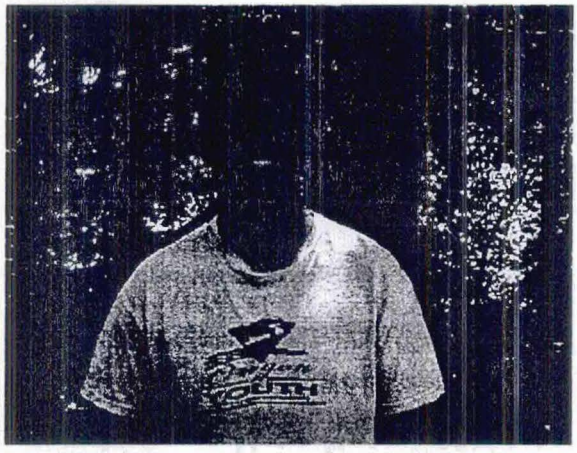
NEED ONE SQ. YARD AT BOTTOM OF BOX WITH NO TREE LIMBS

BAT BOX RESEARCH TEAM CLEVELAND H.S. PORTLAND, OREGON

About The Authors



Christie Haynes is an eighteen-year-old environmental enthusiast, and former CRUE student. She plans to attend Portland State University to obtain a bachelor's degree in science.



Nathan Taylor is an eighteen-year-old graduate of the CRUE program. He is a talented classical guitarist and he plans to pursue a bachelor's degree in musical performance.

Brandy Penrose is an eighteen-year-old graduate of the CRUE program. She plans to attend Portland State University and study botany.

"In our world today, we have a lot of cities with concrete and tall buildings. This means that our native habitats are decreasing all of the time. If everyone is aware of the problem, then we can all do restoration projects in an effort to try and preserve our forests and natural habitats." -Nathan Taylor

Project: Urban Nature Overnights
Contract Number: 922605

Regional Parks and Greenspaces Environmental Education Grant Final Report

1. Written summary of grant activities that include progressive steps on how actual activity/project was completed.

Urban Nature Overnights Program

Urban Nature Overnights (UNO) is a year-round program for underserved inner city youth age 8-11, providing overnight camping experiences in the summer and neighborhood explorations during the school year. UNO strives to provide inner city youth safe, hands-on experiences with the natural world, to foster an appreciation of public lands and build awareness of wildlife conservation and stewardship issues. We accomplish these goals by introducing urban youth to wildlife in their neighborhoods, at the Oregon Zoo and, as participants gain skills, beyond urban boundaries.

The 2001 UNO program provided 250 inner city youth a safe, high-quality and fun introduction to camping and environmental stewardship. 300 youth took part in school year environmental education programs offered by the UNO Coordinator.

Restoration Guide

In winter 2001, a "recipe book" outlining step-by step procedures of kid-friendly conservation projects was created in partnership with high school students from Open Meadow Alternative High School's CRUE (Corps Restoring Urban Environments) program. UNO Coordinator Jody Van Riper mentored CRUE students through the process of writing and designing the guide. CRUE students Brandy Penrose, Christie Haynes, and Nathan Taylor designed 6 low-tech conservation activities with step-by-step instructions that UNO participants could follow. They worked on the project from March-May, 2001. In June, they presented the completed guide to UNO counselors, and gave them advice on how to use the guide with kids. The CRUE students also presented the guide to UNO partners, including presenting the guide at a Metro Parks and Greenspaces staff meeting.

The guide, "You Can Make a Difference: A Kid-Friendly Restoration Guide", includes instructions for completing activities to help increase habitat for wildlife and protect our natural environment. Activities include a basic site survey, native plant identification, making a nurse log, removing invasive plants, animal tracking, building a song bird nest box, and building a bat house.

The restoration guide (attached to this report) was distributed to every UNO participant in the spring and summer of 2002. UNO participants completed a site survey at their center, and then self-selected one of the restoration activities from the guide to complete during their overnight. Groups from Wattles, North Portland, and Blazers Boys and Girls Clubs and Matt Dishman Community Center learned about animal tracking, and made plaster

casts of animal tracks to take home. Groups from Buckman SUN School, Hillsboro and Meyers Boys and Girls Club, and University Park Community Center built bat houses and put them up near their centers. Woodmere SUN School, Columbia Park, and Portland Housing Authority built songbird nest boxes.

2. Written evaluation and comments by grantee and/or others involved in the activity/project. This should include: what worked/what did not work, helpful hints for future project managers.

Community Partners

In 2001, UNO increased collaboration with community organizations. We worked with twelve partnering agencies, including Portland Parks and Recreation, Boys and Girls Clubs, Portland Housing Authority, and AmeriCorps. We recruited several new partners in 2001, including Matt Dishman Community Center, Peninsula Park Community Center, Buckman SUN School, Woodmere SUN School, and Friends of the Children. These organizations provided 55 chaperones, group coordination, and transportation for the UNO participants.

Volunteers

The 2001 program greatly increased volunteer involvement. Eighteen community volunteers donated 215 hours teaching environmental education and leading activities during UNO overnights. **Bureau of Land Management volunteers alone contributed 89 hours.** In addition to community volunteers, other volunteers came from Metro, Oregon Zoo, Bonneville Power Administration, Jesuit Volunteer Corps, and AmeriCorps.

Working with ZAP team

The UNO program involves Zoo Animal Presenters (ZAP), a team of inner city, at-risk high school teens recruited from the same populations as our youth participants. Our ZAP counselors helped youth gain confidence in their ability to safely go beyond city sidewalks.

Having ZAPs as counselors in the UNO program has been highly successful. They serve as great role models for youth participants, coming from the same communities as the kids. And they're inspiring to work with! However, some changes need to be made. More structure is needed. Establishing professional standards with ZAP is essential. Don't leave activities open-ended. High school aged counselors don't have enough experience for this. Tell them what things need to be accomplished in each activity.

Weekly meetings provided an effective way to keep ZAP and staff informed about the upcoming overnights, and allowed us to do some problem solving. More focused go-arounds worked better, for example having them describe specific activities (what did you do on your night hike?)

Additional training ZAP members need:
Leave No Trace

Assertiveness training (working with chaperones)
Diversity
Working with kids
Meeting behavior, professionalism
First Aid/CPR
Discipline procedure (3 step disciplinary procedure for counselors to use with kids)

How we accomplished meeting our objectives

Introduce basics of camping and outdoor recreation in a safe environment.

The 2001 UNO program consisted of twelve overnight experiences. Ten were held on the grounds of the Oregon Zoo, and this year, we added two offsite overnights at Oxbow Park for returning campers, to provide an even wilder experience. These offsite experiences were particularly beneficial in observing wildlife in their natural habitat, hiking through the ancient forest at Oxbow, and providing a camping experience outside of the city. We were also able to participate in restoration projects at the park, removing invasive Scotch Broom along the Sandy River. The 2002 UNO program will continue to offer overnights on and off Zoo grounds.

During an overnight, youth are guided through hands-on skill development activities including camp stove cooking, tent set up, and night exploration.

Increase understanding, enjoyment and respect of the natural world among inner city youth.

UNO provides a series of classroom presentations and neighborhood explorations during the school year to participants. Topics that are taught include map orientation, plant identification, bird watching, and exploration of urban habitats. We build naturalist skills and an understanding of camping in preparation for their overnight.

In the summer of 2001 we built 20 bat houses and 12 songbird nest boxes. Participants took the boxes back to their neighborhood center to place them in an appropriate habitat.

Through UNO experiences, young people develop outdoor skills and outdoor safety awareness. They gain an understanding of the interconnectedness of living things. They also develop respect for the outdoor world, skills to explore the outdoor world, and cooperative skills and teamwork.

Inspire the next generation of recreational enthusiasts and wildlife stewards.

Youth participants receive equipment to encourage future outdoor explorations. Each UNO camper receives a flashlight, water bottle, and personal journal in addition to maps and resources for recreational opportunities and environmental programs available in their area.

During our closing ceremony at the end of an overnight, participants are asked to say one thing they learned or will remember from their UNO experience. Many of them say they learned "how to go camping" or "how to cook on a camp stove". Others respond with experiences they had during their night hike, or simply that "I never did anything like this before." Participants are asked how many of them want to have more outdoor experiences in the future, and nearly everybody raises their hand.

3. Photo documentation showing how the activity/project was accomplished.
See attached photos.

4. If the grant included a restoration/enhancement portion, please include before/during/after photos of the site. Set, permanent photo points for monitoring purposes are strongly recommended. Include map and photo points with slides of photo points.
N/A

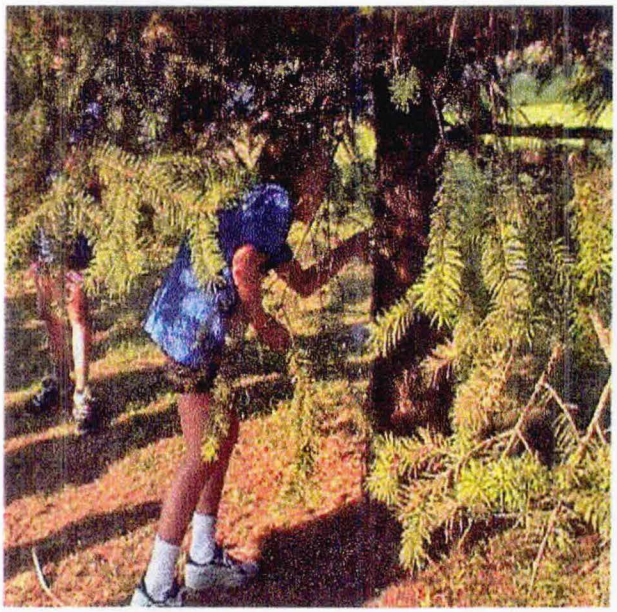
5. If the grant included a restoration/enhancement portion please outline the maintenance plan or follow up activities that will ensure success of the project.
UNO program participants will continue to monitor bat houses and songbird nest boxes at their centers to note any changes. UNO Coordinator checks in with participants at visits during the school year to talk about any bird or bat behavior they have noticed.

6. If the grant included a restoration/enhancement portion please note the number and species of trees, seedling and shrubs planted. Accurate numbers and species are necessary.
N/A

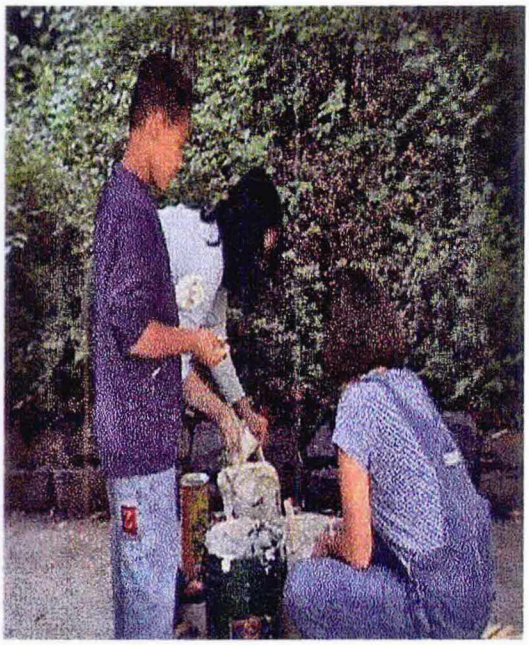
7. Actual product of the grant such as curriculum, video, guide, brochure, etc. that the grant monies funded.
See attached: "You Can Make a Difference: A Kid-Friendly Restoration Guide"

(Also attached: UNO Program Evaluation)

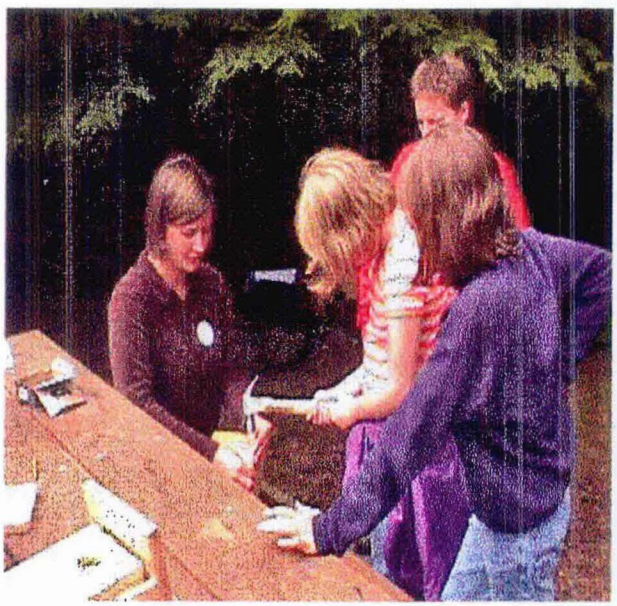
Urban Nature Overnights:
Connecting Youth with Nature for a Better Future!



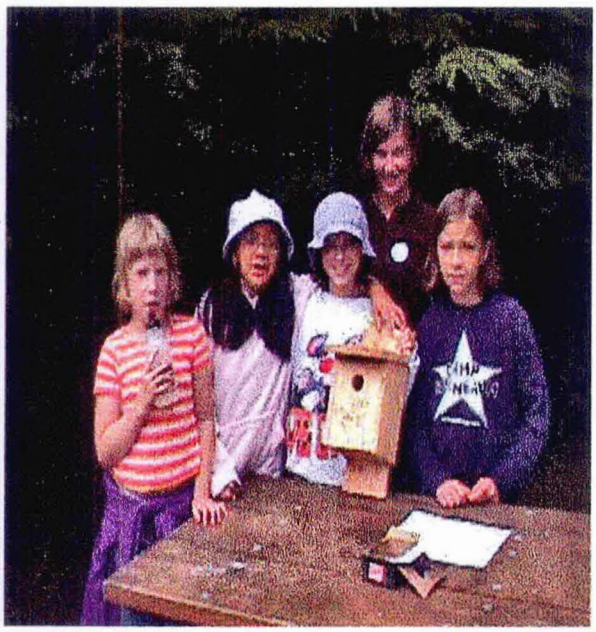
UNO camper meeting Douglas fir



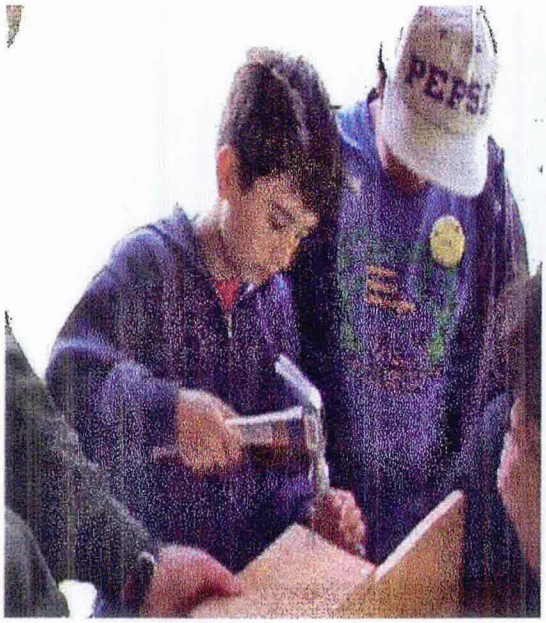
Casting animal tracks with AmeriCorps volunteers



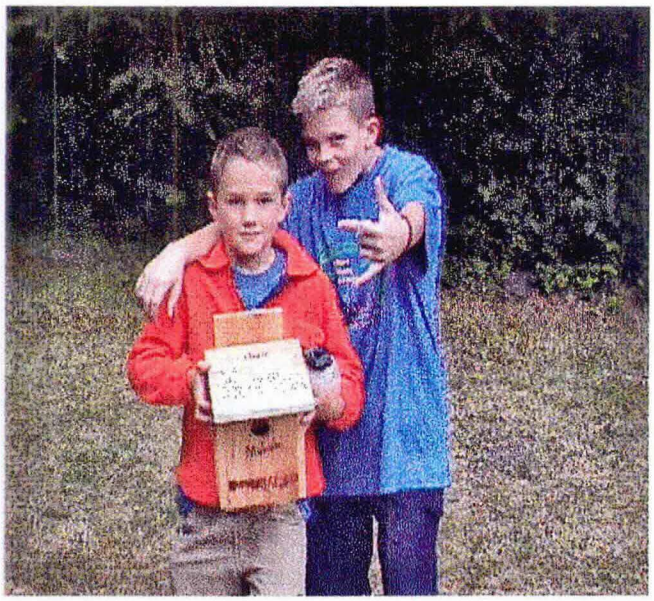
Help from a BLM volunteer



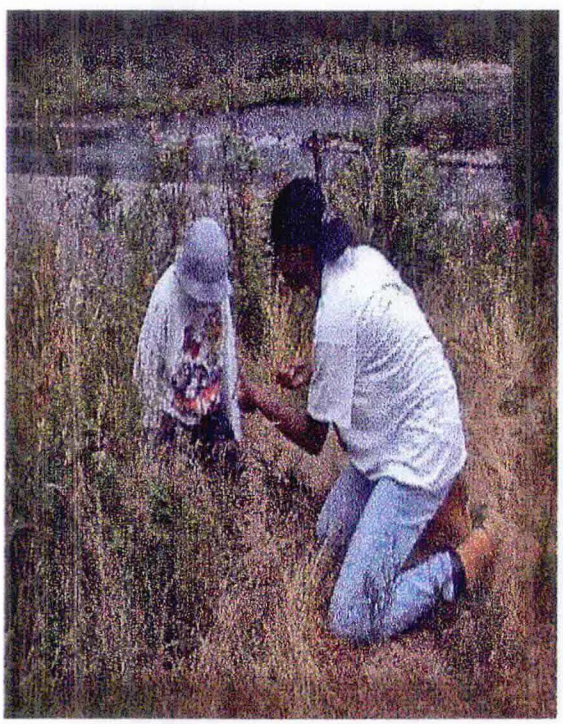
Proud bird box builders– We did it!



Building a bat box



Finished song bird nest box



UNO campers helped remove Scotch broom during our overnight at Oxbow.

EVALUATION ABSTRACT:

The Urban Nature Overnights (UNO) program is designed to provide inner city youth a safe and enriching experience with the natural world. Participants entering grades 3-5 learn recreation skills and basic environmental concepts while camping overnight at the Oregon Zoo or at Oxbow Park. UNO relies on hands-on activities, high adult to child ratios, and mentoring from inner city high school students to provide each participant a unique experience crafted to meet their needs.

A program evaluation of the Urban Nature Overnights program was conducted throughout all 10 Zoo overnight sessions and both Oxbow Park overnight sessions. Participating students were surveyed prior to and after their camping experience at the Oregon Zoo or Oxbow Park. These surveys were then compared to a control group of students who completed the assessment survey but did not participate in the UNO program. The control group participants were similar in demographics to the participants and belonged to the same youth groups.

One hundred nighty four of the 213 participants were surveyed about their experience at the Zoo Urban Nature Overnight (UNO) program. Thirty of the 36 participants were surveyed about their experience at the Oxbow Park UNO program. The participants were between the ages of 6 and 11 years of age. The average age was 9 years of age. Of the Zoo participants 58% were females and 42% were males. Females constituted 67% and males 33% of the Oxbow Park participants. In addition, 39 chaperones of the Zoo Overnight programs and 5 chaperones of the 2 Oxbow Park Overnight programs were surveyed about the effectiveness of the program.

The post assessment survey included questions related to the following areas:

Knowledge questions about camping
Knowledge questions about animals and nature
Attitude questions about camping and the Zoo
Attitude questions about the UNO program
Suggestions for program improvement

An analysis of responses compared to a control group found the Zoo Overnight participants to have significantly more correct responses than the control group for 7 of 9 knowledge questions and the Oxbow participants to have significantly more correct responses for 4 of 9 knowledge questions. The following are the knowledge areas the Zoo and Oxbow participants had statistically significant more correct responses than the control group.

Zoo and Oxbow Participants had significantly more correct responses in the following areas:

* Knowledge about what you should take with you when you go camping.
* Knowledge about what you need to bring to cook with when you go camping.
* Knowledge about how you tell the difference between two animals by looking at their tracks.
* Knowledge about what birds eat.

Zoo participants (only) had significantly more correct responses in the following areas:

* Knowledge about the definition of a habitat.
* Knowledge about how plants help animals and people.
* Knowledge about what kind of mammals live in the city.

In general the Zoo and Oxbow participants knowledge was better than the control group, but their knowledge was not complete or always correct. Some of the participants still lacked knowledge about a few of the areas targeted by the UNO program. In three of the nine areas at least 40% of the Zoo and Oxbow participants incorrectly answered the knowledge questions. It is clear from these data that the questions asked in these three areas did not directly match the focus of the activities of the program. More work needs to be done by the program to increase the students knowledge level to be able to answer these questions correctly or the questions should be reworded to coordinate closer with the intent of the program.

A comparison of the Oxbow participants and the Zoo participants was also conducted. This comparison was somewhat hindered by the smaller size of the Oxbow group (N=30). Due to their smaller sample size the Oxbow group would have to show much higher scores than the Zoo participant group (N=194) to achieve a statistical significant difference. Even so, the analysis found that in most cases the Oxbow group had higher percentages of correct responses than the Zoo participants and for one question area the Oxbow participants had statistically higher levels of correct responses than the Zoo participants. This area was: knowledge about how you tell the difference between two animals by looking at their tracks.

At the conclusion of their overnight experience students indicated that they learned many new things while camping at the Zoo and at Oxbow Park. Their favorite thing about staying at the zoo was seeing the animals, sleeping in tents and cooking food. Oxbow Park participants said their favorite thing was seeing deer and sleeping in nature. **Ninety-nine percent of the Zoo participants and 93% of the Oxbow Park participants indicated that they wanted to go camping again and 90% or better of all participants said that they liked or loved their experience.** When asked if there was anything that they wanted to do but didn't get to do, the most common answer was that they "got to do everything they wanted." A few students indicated they wanted to "see more of the animals."

Adult chaperones were generally positive about the UNO program. The Zoo Overnight chaperones listed many benefits to the program and felt the students learned basic teamwork skills, camping skills and learned about various animals. Oxbow Park chaperones thought everything was wonderful and that the kids had a great time.

The evaluation included 90% of the UNO program participants. The evaluation found that the UNO program at the Zoo and at Oxbow Park was very successful. The participants indicated that they enjoyed their experience and they learned a lot about camping and nature. However, an analysis of the percent of incorrect responses found that for some knowledge areas more education of the participants is needed. The UNO program needs to decide if this knowledge information is important. If this information is important then a plan of action to teach the knowledge should be developed. Other suggestions for next year include: 1) expand the size of the off-site overnight experiences to determine the effectiveness of this experience compared with the Zoo experience; 2) target the evaluation questions to better determine the intent of the program and; 3) modify the scoring of the knowledge questions to include four possible points for each question, thus including "I don't know" as another point on the scale.

The evaluation was successful at documenting the effectiveness of the UNO overnight program. However, it should be noted that the evaluation was conducted by asking young children to complete answers to a survey. In general this procedure was effective, but in some cases individual children's responses may not be as accurate as they could be with an interview procedure. In comparison to the evaluation conducted last year it appears that the major problems with the orientation sessions and the evaluation procedures identified previously were addressed and the program has been improved. The UNO program has demonstrated that it is effective at providing a good experience for kids in the outdoors.

TABLE OF CONTENTS

INTRODUCTION TO THE UNO PROGRAM

The Urban Nature Overnights (UNO) program is designed to provide inner city youth a safe and enriching experience with the natural world. Participants entering grades 3-5 learn recreation skills and basic environmental concepts while camping overnight at the Oregon Zoo or in neighboring parks. UNO relies on hands-on activities, high adult to child ratios, and mentoring from inner city high school students to provide each participant a unique experience crafted to meet their needs.

Our introduction of the UNO program to our participants begins with several pre-overnight orientation meetings. These meetings serve several functions. They allow the program coordinator an opportunity to meet the group and assess any special needs they may have (handicapped youth, ESL) and their general level of experience. The meetings give participants a chance to learn about the program and build excitement, appropriate expectations and a comfort level about this boundary-expanding experience. Each meeting has a specific hands-on lesson to create a common level of knowledge among participants that we can build on during the overnight: animal tracking, map reading, and habitat exploration.

When participants arrive at the Zoo, they are divided into small groups of 5 and assigned a high school counselor and adult chaperone. Their first hour is spent touring the Zoo, to gain a sense of place and see some of their favorite animals. This also gives the high school counselors a chance to get to know the abilities and personalities of their group, with whom they will work over the next 22 hours. After their initial tour, each group works as a team to make dinner and set up tents. When they have secured their campsite for the night, they are oriented for their evening hike.

The evening hike is often the first time youth have walked in "the wild" at night. The emphasis on the evening hike is awareness that nocturnal animals are active and alert in ways different from diurnal animals. Participants are encouraged to "sneak" their way through the Zoo to catch animals in their after hours behaviors. Flashlights are not used, which also gives the participants a chance to experience their own night vision and become aware of both the light pollution of the city and how much of the night sky can be visible. A campfire rounds out the day's experiences, with s'mores, songs and stories provided by staff, mentors and eager participants. Settling down to the sounds of peacocks, sea lions and the occasional wolf is just one of the perks.

In the morning, groups work together to break camp and make themselves a pancake breakfast. We practice low impact camping by cleaning, recycling, and putting everything away. After breakfast, volunteer presenters lead hands-on activities that broaden our habitat and recreation experiences, including animal tracking, native plant crafts, and building songbird nest boxes. One of these activities results in a take-home product as a reminder of their time and what they learned: track casts, elderberry rings, a bird box to put in the appropriate habitat near their community center.

During our closing ceremony, participants are asked to say what they enjoyed about their UNO

experience, and we review what they have learned. Certificates of participation and information about recreation activities in the area are given to encourage youth to use their new skills to explore natural areas with their families. Youth also take home equipment to encourage further outdoor explorations, including a flashlight, water bottle, and personal journal.

During summer 2001, we expanded the UNO program by providing two overnights off Zoo grounds at Oxbow Regional Park, for returning campers. These overnights followed the same structure as Zoo overnights described above, but activities allowed for more in-depth investigation and exploration of the surrounding habitat. Participants tracked animals along the Sandy River with a naturalist and went on ancient forest hikes with a park ranger, in addition to completing conservation projects at the park.

We will follow up with groups throughout the 2001-2002 school year, providing further experiences in outdoor recreation, such as birdwatching and habitat mapping in local greenspaces. We will develop participants' stewardship ethic by planning and implementing habitat restoration projects, such as invasive plant removal.

We will take more groups beyond zoo grounds to locations selected by project partners to give returning youth an even wilder experience. We will strengthen our mentoring program with further training and recruitment of our high school, inner city counselors.

We will continue to generate excitement about outdoor recreation, and to work towards creating a change in interest and attitude towards habitat conservation and stewardship among inner city youth.

EVALUATION REPORT

WRITTEN BY JOEL ARICK, PH.D

METHODS

Subjects

Two Hundred twenty four participants between 6-11 years of age were surveyed about their experience at the Zoo or Oxbow Park Urban Nature Overnight programs. Two hundred twenty four of the 249 total UNO participants were surveyed. This represents a very comprehensive evaluation sample at 90% of all UNO participants. The subjects at the Zoo were 58% female and 42% male. At Oxbow Park 67% were females and 33% males. The evaluation was conducted with all the UNO overnight groups.

Adult chaperones were also interviewed about their experience at the UNO program. Thirty nine chaperones from the Zoo UNO program were surveyed and 5 chaperones from the Oxbow Park UNO program were surveyed.

GROUP	Total Number of UNO Participants	Number of UNO Participants Surveyed	Total Number of Sessions	Number of Sessions Evaluated
Zoo Participants	213	194	10	10
Oxbow Participants	36	30	2	2
Control Group	n/a	61	n/a	n/a

GROUP	Number of Subjects	MEAN AGE	FEMALES	MALES
Zoo Participants	194	9 Yrs old	58%	42%
Oxbow Participants	30	9 Yrs old	67%	33%
Control Group	61	9 Yrs old	49%	51%

Survey/Interview Form

Participant Survey/Interview:

Pre-assessment, Control group, Zoo participant and Oxbow participant assessment forms were developed to survey the participants about their experience at the UNO program. The forms were developed to allow the evaluation and Zoo staff to use the forms as either a written survey or as an interview. The survey forms were pilot-tested with the 2000 UNO overnight group and then revised for use with the 2001 participating groups.

The pre-assessment and control group survey had questions related to the following areas:

- Experience camping
- Experience at the Zoo
- Knowledge questions about camping
- Knowledge questions about animals
- Attitude questions about camping and the Zoo

The Zoo and Oxbow post assessment had questions related to the following areas:

- Knowledge questions about camping
- Knowledge questions about animals
- Attitude questions about camping and the Zoo
- Attitude questions about the UNO program
- Suggestions for program improvement

Adult Chaperone Interview/Survey

A survey form was also developed to survey the adult chaperones of each participating group. Chaperones were interviewed about their experience with the UNO program. The survey asked for their opinion of the students' experience during the UNO program. The zoo also asked for their input and suggestions to help improve the program in the future.

* See Appendix for Pre/Post/Control group Survey Instruments and the Chaperone Survey

Procedures

Student Participant Surveys:

Participating students completed the pre-assessment survey prior to attending the UNO program. The pre-assessments were completed at their local club following an orientation session conducted by the Zoo staff. Students were asked to complete the post-assessment survey following their UNO experience at the Zoo or Oxbow Park. The post-assessment survey was completed just prior to leaving the Zoo or Oxbow Park at the end of their experience. Students were asked to hand write their answers to the survey questions. In a few cases, for students who experienced difficulty reading or writing their answers, the survey was conducted as an interview. This procedure probably could have been done more extensively than time would allow.

Adult Chaperone Surveys:

Adult Chaperones were asked to complete the Chaperone survey prior to leaving the Zoo or Oxbow Park.

RESULTS

PREVIOUS EXPERIENCE:

The pre-assessment survey asked the participants to indicate information about their previous experience. The following table shows the level of previous experience of these students.

Most of the participants had gone camping in the past, but almost 20% had never been camping. Almost all participants had been to the Zoo before. Many participants had planted something in a garden previously.

Zoo Participants Compared to a Control Group?

Previous Experience:

Control Group:

Pre-Assessment Questions:	% Yes	% No
1) Have you camped at the Zoo before?	0	100
2) Have you ever gone camping before?	66	34
3) Have you ever been to the Zoo before?	85	15
3a) If yes, have you ever been to a camp at the Zoo before?	16	84
4) Have you ever planted anything in a garden?	73	27
5) Have you ever planted anything in a forest?	21	79

Zoo Participants:

Pre-Assessment Questions:	% Yes	% No
1) Have you camped at the Zoo before?	25	75
2) Have you ever gone camping before?	81	19
3) Have you ever been to the Zoo before?	95	5
3a) If yes, have you ever been to a camp at the Zoo before?	26	74
4) Have you ever planted anything in a garden?	83	17
5) Have you ever planted anything in a forest?	21	79

Oxbow Participants:

Pre-Assessment Questions:	% Yes	% No
1) Have you camped at the Zoo before?	43	57
2) Have you ever gone camping before?	79	21
3) Have you ever been to the Zoo before?	96	4
3a) If yes, have you ever been to a camp at the Zoo before?	36	64
4) Have you ever planted anything in a garden?	86	14
5) Have you ever planted anything in a forest?	21	79

KNOWLEDGE ABOUT CAMPING AND THE ZOO:

Zoo and Oxbow participants compared to a control group:

The Zoo and Oxbow participant's answers to the knowledge questions were compared to a control group. The control group is a group of same age and gender subjects who did not attend the Zoo camp or Oxbow camp. The control group students did belong to the same youth groups at the Zoo and Oxbow participants.

The Zoo and Oxbow participants had significantly more correct or partially correct responses in their knowledge about camping and outdoor activities than did the control group. The post-assessment responses were significantly higher in 7 of 9 questions asked of Zoo participants and 4 of 9 questions asked of Oxbow participants than the control group. In general the percent of incorrect answers was less for Zoo/Oxbow participants than for participants from the control group, and the percent of partially correct and completely correct answers was higher for the Zoo/Oxbow participants.

Pre to Post analysis of growth for the Zoo participants:

A pre-post analysis of the Zoo participants was conducted with 97 subjects who had completed both the pre and post survey. Many subjects did not have a matching pre-survey and thus could not be included in the analysis. The analysis found that Zoo participants had significantly more partially correct and correct items for 4 of the 9 knowledge areas. The four areas in which knowledge increased were as follows:

* What do you need to bring to cook with when you go camping
* Name some animals that are nocturnal
* What do birds eat
* What kind of mammals live in the city

Post Analysis of correct responses to knowledge questions:

A review of the percent of the respondents who answered each item correct was conducted. This review found that in general the percent of respondents who answered each knowledge item completely correct was not high. The average percent of respondents to get a completely correct answer to the knowledge questions ranged from 1% to 60%. Most of the knowledge questions were answered with an average of 30% of the respondents giving a completely correct answer. While the Zoo participants did have better knowledge answers than the control group, they were generally scored at only partially correct. On a few items, they actually scored "not correct." Forty percent or more of the Zoo participants incorrectly answered the following 3 questions:

* What do you need to bring to cook with when you go camping?
* Name some sounds that you hear when you go camping.
* How do you tell the difference between 2 animals by looking at their tracks?

ANALYSIS OF KNOWLEDGE QUESTIONS:

The following is an analysis of each of the nine knowledge questions. The quantitative data for the Zoo and Oxbow participants is compared to the control group, this is followed by the student pre and post qualitative responses for each of the nine knowledge questions.

Question 1. What should you take with you when you go camping?

UNO at the Zoo

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	26% (51)	60% (116)	14% (27)	Yes
Control group (n=61)	46% (28)	43% (26)	11% (7)	

Zoo participants had significantly higher percent of correct and partially correct responses to this question than did the control group.

UNO at Oxbow Park

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	20% (6)	67% (20)	13% (4)	Yes
Control group (n=61)	46% (28)	43% (26)	11% (7)	

Oxbow participants had significantly higher percent of correct and partially correct responses to this question than did the control group.

UNO at the Zoo:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 1. What should you take with you when you go camping?	Sleeping Bag (98) Clothes (76) Tent (56) Food (50) Flashlight (40) Toothbrush (38) Water (36) Pillow (28) Shoes (19) Toothpaste (14) Blankets (12) Camera (12) Stuffed Monkey/Toys (12) Brush (10) Matches (9) Backpack (8) Sunscreen (8) Boots (4) Shampoo (4) First-Aid Kit (4) Medicine (4) Bug Repellent (3) Batteries (3) Stove (2) Lantern (2) Map (2) Compass (2) Air Mattress (2) Towel(2) Firewood (2) Binoculars (1) Battery Operated Grill (1) Power (1) Film (1) Fishing Pool (1) Sunglasses (1) I don't know (25)	Sleeping Bag (132) Clothes (80) Tent (75) Flashlight (48) Pillow (46) Food (44) Toothbrush (26) Water (20) First- Aid Kit (8) Shoes (8) Toothpaste (6) Camera (4) Backpack (4) Brush (3) Lighter (3) Matches (3) Knife (3) Compass (3) Toilet Paper (2) Pans (2) Stove (2) Oven (2) Cook Supplies (2) Binoculars (2) Blanket (1) Sleeping Pad (1) Books (1) Garbage Bag (1) Shelter (1) Map (1) Wood (1) Hat (1) Air Mattress (1) I don't know (4)

UNO at Oxbow Park

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 1. What should you take with you when you go camping?	Sleeping bag (33) Clothes (26) Food (21) Tent (16) Flashlight (14) Pillow (11) Boots (6) Toothpaste (5) Book (3) Water (3) Blanket (2) First-Aid Kit (2) Sunscreen (2) Toothbrush (2) Cooking Supplies (1) Binoculars (1) Wood (1) Weapon (1) Fire (1) I don't know (2)	Sleeping bag (20) Clothes (19) Tent (12) Food (7) Flashlight (6) Cooking utensils (6) Pillow (5) Stove (3) Toothpaste (3) Shoes (2) Water (2) Fist-Aid Kit (2) Toothbrush (2) Pans (1) T.V. (1) Radio (1) Backpack (1)

Question 2. What do you need to bring to cook with when you go camping?

UNO at the Zoo:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	48% (89)	44% (82)	8% (14)	Yes
Control group (n=61)	70% (41)	30% (18)	0% (0)	

Zoo participants had significantly higher percent of correct and partially correct responses to this question than did the control group.

UNO at Oxbow Park:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	43% (13)	47% (14)	10% (3)	Yes
Control group (n=61)	70% (41)	30% (18)	0% (0)	

Oxbow participants had significantly higher percent of correct and partially correct responses to this question than did the control group.

UNO at the Zoo

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 2. What do you need to bring to cook with when you go camping?	Pots/Pans (44) Silverware(31) Food (24) Dishes (21) Matches (17) Stove (15) Water (9) Fire (8) Wood (8) Gas (7) Grill (7) Oil (6) Spatula (5) Cup (4) Measuring cup (2) Oven (2) Foil (2) Can Opener (1) Napkins (1) Knife (1) BBQ (1) I don't know (74)	Stove (73) Food (62) Pots/Pans (60) Silverware (45) Dishes (26) Matches/Lighter (15) Water (10) Plates (8) Gas (6) Spatula (5) Wood (5) Propane (4) Oven (3) Fire (3) Grill (3) Drink (1) Oil (1) I don't know (25)

UNO at Oxbow Park

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 2. What do you need to bring to cook with when you go camping?	Food (14) Pot/Pan (14) Stove (12) Silverware (7) Matches (5) Cooking stuff (4) Lighter (4) Dishes (3) Corn oil (3) Firewood (2) Spatula (1) Water (1) Rocks (1) Salt (1) Milk (1) Fire (1) I don't know (9)	Pots/Pans (13) Stove (11) Silverware (7) Food (6) Dishes (6) Gas (3) Cooking Stuff (3) Matches (2) Oil (2) Grill (1) Lighter (1) Spatula (1) Water (1) I Don't Know (6)

Question 3. Name some sounds that you would hear when you are camping.

UNO at the Zoo:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	48% (92)	30% (58)	22% (42)	No
Control group (n=61)	59% (35)	19% (11)	22% (13)	

The percent of not correct, partially correct and completely correct responses were statistically similar between the Zoo participants and the control group.

UNO at Oxbow Park:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	43% (13)	20% (6)	37% (11)	No
Control group (n=61)	59% (35)	19% (11)	22% (13)	

Even though some of the percent data was higher for the Oxbow Park participants, due to a small sample size, the percent of not correct, partially correct and completely correct responses were found to be statistically similar between the Oxbow Park participants and the control group.

UNO at the Zoo:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 3. Name some sounds you would hear when you are camping?	Bird (69) Owl (33) Rushing Water (31) Cricket (23) Monkey (16) Elephant (16) Bear (15) Bats (11) Wind (10) Wolf (10) Coyote (8) Lion (7) Trees (7) Snake (5) Frog (5) People (4) Roaring (4) Tiger (4) Deer (4) Insects (4) Fire (3) Growling (3) Raccoon (2) Fox (2) Shark (2) Campfire (2) Seal (2) Train (2) Dog (2) Chicken (1) Fish Jumping (1) Mosquitos (1) rain (1) Wild Rooster (1) Beavers (1) Goat (1) Squirrel (1) I don't know (35)	Bird (69) Crickets (31) Owl (26) Monkey (26) Peacock (20) Wind (19) Frog (18) Wolf (13) Elephants (9) People (8) Water (8) Bear (6) Deer (5) Bat (4) Fire (4) Plants/Leaves (4) Animals (4) Insects (4) Squirrel (4) Bushes (4) cars (4) Howls (3) Roars (3) Growls (2) Coyote (2) Rabbits (2) Trains (2) Crow (1) Hoot (1) Boys (1) Tents (1) Lion (1) Tiger (1) Tweet (1) Beavers (1) Airplanes (1) I don't know (21)

UNO at Oxbow Park:

QUESTION:	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 3. Name some sounds that you would hear when you are camping?	Bird (19) Wind (8) Water (8) Cricket (8) Deer (6) Owl (6) Wolves (5) Animals (4) Frog (4) Snake (3) Bear (3) People (3) Leaves (3) Beach (2) Bats (2) Fox (2) Dogs (2) Cats (1) Coyote (1) Mt. Lion (1) Horse (1) Donkey (1) Raccoon (1) Barking (1) Beavers (1) Squirrels (1) Buzz (1) Fish (1) Roaring (1) Monkey (1) Elephant (1) I don't know (6)	Bird (15) Crickets (7) Water (6) Wind (5) Deer (5) Owl (4) Leaves/Plants (2) Animals (2) Bats (2) Wolves (1) Beavers (1) Geckos (1) Howl (1) Fish (1) Frog (1) Cars (1) Squirrel (1) Woodpecker (1) I don't know (4)

Question 4. How can you tell the difference between two animals by looking at their tracks?

UNO at the Zoo:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	82% (147)	17% (30)	1% (1)	Yes
Control group (n=61)	96% (53)	4% (2)	0% (0)	

Zoo participants had significantly higher percent of partially correct responses to this question than did the control group.

UNO at Oxbow Park:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	65% (19)	21% (6)	14% (4)	Yes
Control group (n=61)	96% (53)	4% (2)	0% (0)	

Oxbow participants had a significantly higher percent of partially correct responses to this question than did the control group.

UNO at the Zoo:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 4. How can you tell the difference between two animals by looking at their tracks?	Size (37) Shape (25) Different Feet (14) Different Foot Prints (11) Claws/Toes (9) They look different (8) Number of Prints (5) Paws (3) Markings (2) Hoof (1) Depth (1) Webbed (1) Form (1) Smell (1) Color (1) Weight (1) I don't know (95)	Size (64) Shape (23) Claws/toes (12) They are different (11) Tracks are different (5) The Foot Print (5) Paws (4) Depth (2) Height (2) Length (2) Style (1) Book (1) Structure (1) Hooves (1) Look Closely (1) Features (1) Fingers (1) Weight (1) I don't know (56)

UNO at Oxbow Park:

Question 4. How can you tell the difference between two animals by looking at their tracks?	Size (16) Shape (11) Different tracks (8) Looks (3) Number of feet (1) Print (1) Claws (1) I don't know (11)	Size (16) Shape (10) Different tracks (4) Look (3) Number of Toes (1) Deepness (1) The foot print (1) I don't know (4)

Question 5. Name some animals that are nocturnal (they wake up and are active at night).

UNO at the Zoo:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	37% (68)	37% (68)	26% (50)	No
Control group (n=61)	44% (26)	36% (21)	20% (12)	

The percent of not correct, partially correct and completely correct responses were statistically similar between the Zoo participants and the control group.

UNO at Oxbow Park

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	30% (9)	40% (12)	30% (9)	No
Control group (n=61)	44% (26)	36% (21)	20% (12)	

Even though some of the percent data was higher for the Oxbow Park participants, due to a small sample size, the percent of not correct, partially correct and completely correct responses were found to be statistically similar between the Oxbow Park participants and the control group.

UNO at the Zoo:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 5. Name some animals that are nocturnal (they wake up and are active at night)?	Owl (95) Bat (91) Raccoon (18) Lion (15) Bear (13) Squirrel (11) Cat (10) Coyote (7) Monkey (7) Wolf (6) Cricket (5) Rodent (5) Cheetah (5) Fish (4) Bird (4) Leopard (4) Opossum (4) Insects (4) Hamster (3) Elephant (3) Dog (3) Fox (2) Koala (2) Gecko (2) Skunk (1) Rooster (1) Crocodile (1) Ocelot (1) Seal (1) Alligator (1) Panda (1) Mole (1) Hyena (1) People (1) Peacock (1) Otter (1) Snake (1) I don't know (38)	Owl (121) Bat (120) Cat (14) Bird (14) Rodent (11) Tiger (9) Leopard (7) Peacock (5) Insects (5) Bear (5) Lion (4) Crickets (4) Deer (4) Opossum (3) Fox (3) Jaguar (3) People (2) Elephant (2) Hippos (2) Coyote (2) Snakes (1) Rhino (1) Gecko (1) Mole (1) Hamster (1) Crocodile (1) I don't know (10)

UNO at Oxbow Park:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 5. Name some animals that are nocturnal(they wake up and are active at night)?	Owl (20) Bat (10) Raccoon (7) Bird (4) Frog (3) Bear (3) Wolf (3) Lion (3) Monkey (2) Cats (2) Snake (2) Deer (2) Cricket (1) Opossum (1) Alligators (1) Tigers (1) Cheetah (1) Peacock (1) Mice (1) I don't know (10)	Owl (19) Bat (18) Deer (7) Raccoon (6) Beaver (3) Cricket (2) Cat (2) Wolf (2) Fox (2) Frog (1) Opossum (1) Bears (1) Insects (1) Tiger (1) Birds (1) Earthworms (1) Don't Know (1)

Question 6. What is a habitat?

UNO at the Zoo:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	24% (43)	73% (130)	3% (6)	Yes
Control group (n=61)	41% (24)	54% (32)	5% (3)	

Zoo participants had significantly higher percent of correct and partially correct responses to this question than did the control group.

UNO at Oxbow Park:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	40% (12)	60% (18)	0% (0)	No
Control group (n=61)	41% (24)	54% (32)	5% (3)	

The percent of not correct, partially correct and completely correct responses were statistically similar between the Oxbow Park participants and the control group.

UNO at the Zoo:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 6. What is a habitat?	Home/house (107) Nest (4) Way you live (4) What they eat (3) Land (2) Tree (2) Look like (2) Something you do (1) Live in a zoo (1) Sleep (1) Hunt (1) Where they eat (1) Forest (1) A bat (1) Jungle (1) Hole (1) Attitude (1) I don't know (62)	Home/house (136) Food (9) Shelter (3) Water (3) Rainforest (3) Something you like to do (2) cave (2) Someone stays (1) Nest (1) In the water (1) Tree (1) Hole (1) I don't know (28)

UNO at Oxbow Park:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 6. What is a habitat?	Home/Where an animal lives(19) Where they sleep (2) Trees (1) Rocks (1) In a zoo (1) Ability to eat (1) Different kind of lands (1) Ponds (1) Have Water (1) I don't know (14)	Home (18) An Animal can get food and water (1) Don't Know (9)

Question 7. How do plants help animals and people?

UNO at the Zoo:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	28% (50)	52% (93)	20% (36)	Yes
Control group (n=61)	47% (27)	38% (22)	15% (9)	

Zoo participants had significantly higher percent of correct and partially correct responses to this question than did the control group.

UNO at Oxbow Park:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	30% (9)	43% (13)	27% (8)	No
Control group (n=61)	47% (27)	38% (22)	15% (9)	

Even though some of the percent data was higher for the Oxbow Park participants, due to a small sample size, the percent of not correct, partially correct and completely correct responses were found to be statistically similar between the Oxbow Park participants and the control group.

UNO at the Zoo:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 7. How do plants help animals and people?	Food (73) Oxygen (45) Medicine (19) Shelter (5) Help to live (5) Vitamins (3) Shade (3) Water (3) Stay Healthy (3) Cosmetics (2) Paper (1) I don't know (23)	Food (80) Oxygen (54) Medicine (24) Homes (5) Healthy (4) Cosmetics (3) Shelter (3) Shade (2) To grow (2) Play on grass (1) Honey (1) Habitat (1) Provide stuff (1) Habitat is complete (1) Vitamins (1) I don't know (34)

UNO at Oxbow Park:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 7. How do plants help animals and people?	Food (16) Oxygen (11) Medicine (4) To grow (4) Strengths and weaknesses (1) Paper (1) Smell good (1) Keep dirt away (1) Where they sleep (1) Nutrients (1) I don't know (9)	Food (12) Medicine (10) Air (4) Shelter (3) Water (2) Nutrients (1) Cares for us (1) Their strength (1) Don't Know (8)

Question 8. What do birds eat?

UNO at the Zoo:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	11% (21)	47% (87)	42% (78)	Yes
Control group (n=61)	25% (15)	41% (24)	34% (20)	

Zoo participants had significantly higher percent of correct responses and significantly less "not correct responses" to this question than did the control group.

UNO at Oxbow Park:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	10% (3)	30% (9)	60% (18)	Yes
Control group (n=61)	25% (15)	41% (24)	34% (20)	

Oxbow participants had significantly higher percent of correct responses to this question than did the control group.

UNO at the Zoo:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 8. What do birds eat?	Worms (96) Seeds (67) Bugs (37) Fruit (13) Bread (13) Rodents (8) Plants (7) Nectar (6) Animals (6) Fish (4) Nuts (3) Bird feed (3) Popcorn/Corn (2) Rabbit (1) Snakes (1) Snails (1) I don't know (23)	Worms (97) Bird seed (83) Bugs (51) Rodents (18) Fruit (15) Bread (14) Fish (11) Bird Food (6) Meat (5) Plants (5) Nectar (3) Other birds (3) Popcorn/corn (3) Nuts (2) Mosquitos (2) Frogs (2) Water shrubs (1) Beans (1) Crumbs (1) I don't know (6)

UNO at Oxbow Park:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 8. What do birds eat?	Worms (25) Seeds (20) Insects (8) Rodents (4) Fish (2) Bread (2) Plants (2) Bird food (1) Fruit (1) Butterflies (1) Cats (1) Corn(1) I don't know (2)	Worms (19) Seeds (18) Insects (9) Fruit (3) Plants (2) Bread (2) Bird food (1) Fish (1) I don't Know (2)

Question 9. What kind of mammals live in the city?

UNO at the Zoo:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Zoo participants (n=194)	39% (72)	32% (58)	29% (54)	Yes
Control group (n=61)	72% (41)	16% (9)	12% (7)	

Zoo participants had significantly higher percent of correct and partially correct responses to this question than did the control group.

UNO at Oxbow Park:

Group	Not correct % (n)	Partially correct % (n)	Completely Correct % (n)	Statistically Significant Difference?
Oxbow participants (n=30)	50% (15)	27% (8)	23% (7)	No
Control group (n=61)	72% (41)	16% (9)	12% (7)	

Even though some of the percent data was higher for the Oxbow Park participants, due to a small sample size, the percent of not correct, partially correct and completely correct responses were found to be statistically similar between the Oxbow Park participants and the control group.

Comparison of Zoo Participants with the Oxbow Participants

A comparison of the Oxbow participants and the Zoo participants was also conducted. This comparison was somewhat hindered by the smaller size of the Oxbow group (N=30). Due to their smaller sample size the Oxbow group would have to show much higher scores than the Zoo participant group (N=194) to achieve a statistical signficant difference. Even so, the analysis found that in most cases the Oxbow group had higher percentages of correct responses than the Zoo participants and for one question area the Oxbow participants had statistically higher levels of correct responses than the Zoo participants. This area was: knowledge about how you tell the difference between two animals by looking at their tracks.

UNO at the Zoo:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 9. What kind of mammals live in the city?	Dog (78) Cat (72) People (41) Bird (38) Rodents (19) Raccoon (17) Rabbits (10) Bats (10) Fish (8) Elephant (6) Squirrels (6) Bear (4) Opossum (3) Whale (3) Hamster (3) Snake (3) Insects (3) Lion (2) Fox (2) Horses (2) Weasel (2) Sheep (1) Owl (1) Frog (1) Dragon (1) Seal (1) Crabs (1) Emu(1) Pig (1) Lizard (1) I don't know (58)	Dog (105) Cat (94) People (35) Bird (27) Rodents (24) Raccoons (18) Bat (9) Rabbit (9) Horses (7) Squirrels (7) Hamsters (6) Opossum (3) Cow (3) Bear (3) Fish (3) Owl (3) Deer (3) Elephant (2) Ferret (2) Wolves (2) Snake (2) Warm blooded animals (1) Whales (1) Moles (1) Guinea pigs (1) Otter (1) Lizard (1) Insects (1) Sheep (1) Monkeys (1) Chickens (1) Pig (1) Fox(1) I don't know (23)

UNO at Oxbow Park:

QUESTION	PRE-ASSESSMENT ANSWERS	POST-ASSESSMENT ANSWERS
Question 9. What kind of mammals live in the city?	Dogs (26) Cats (26) Birds (10) Rodents (8) People (7) Fish (4) Rabbits (4) Bugs (4) Raccoons (3) Spiders (2) Hamsters (2) Frog (1) Snake (1) Squirrel (1) Opossum (1) Worms (1) Gophers (1) Kangaroos (1) Seagulls (1) Dolphins (1) Moles (1) I don't know (4)	Dogs (21) Cats (20) Birds (9) People (7) Squirrel (5) Raccoon (3) Hamsters (3) Fish (2) Goat (1) Sheep (1) Cow (1) People (1) Rabbits (1) Turtles (1) Rodents (1) I don't Know (4)

POST ZOO EXPERIENCE

Participants were asked several questions following their experience with the UNO program at the Zoo. Participants answers were generally positive about the program. The following are a listing of their answers:

UNO at the Zoo:

Did you learn anything new while camping at the Zoo?	
Yes. (30)	To take care of animals. (1)
No. (20)	However big the owl, the age is one thing longer. (1)
I learned how to set up tents. (16)	When it is 10:00 you go to bed, and when it is 10:30 lights are out. (1)
How to cook on a stove. (12)	How to camp. (1)
Don't touch the animals. (10)	Don't smile at an orangutang. (1)
I learned about animals. (9)	I learned about bats. (1)
How to make a bat house. (9)	There are foot prints on the ground. (1)
I learned don't mess with the animals(be quite around them) and be nice. (4)	Fox walk. (1)
	Where more animals live. (1)
	Deer footprints. (1)
How to make pancakes. (4)	Tigers eat meat. (1)
Don't feed the animals. (2)	How to make a dream catcher. (1)
How to make a bird house. (2)	Screech owls live in trees. (1)
About bats. (2)	It's fun. (1)
New songs. (2)	Always bring a cushion mat. (1)
I learned what animals are like at night. (2)	Elephants stand on their tippy toes. (1)
New songs. (2)	I learned about owls. (1)
Some elephants don't have tusks. (1)	You can be safe in a tent (1)
What animals eat. (1)	I learned that monkeys say hey (1)
Don't walk past 10:00 at night. (1)	That peacocks say help when they see a gile (1)
The noise of peacocks. (1)	That if you see a animal don't get so close to it. (1)
That monkeys make noises at 6:15 a.m., because people go in their cages to feed them. (1)	Otters eat meat. (1)
	Beavers eat vegetables. (1)
	Some monkeys howl in the morning. (1)
Hippos give birth in the water. (1)	You could find animals are extinct and learn about them. (1)
Don't talk past 10:00. (1)	Be quite. (1)
That I heard animal sounds. (1)	Bats use ecolochacan. (1)
Don't scare the peacocks.(1)	That I am fond of sleep. (1)
Campfire. (1)	That an owl has 14 bones. (1)
Birds eat dead mice. (1)	Snake can swallow a person.(1)
You can hear better with your hands. (1)	Bats food reflect their scream. (1)
Sounds. (1)	I learned how to make tracks. (1)
Monkeys make a lot of noise. (1)	Elk are nocturnal. (1)
Polar bears have low white hair. (1)	The worlds smallest bear is the sun bear. (1)
I learned how to feed animals. (1)	When the zoo is closed it is a lot quieter. (1)
Elephants are very big. (1)	Owl can't turn their heads around. (1)
Otters live in rivers. (1)	I learned about otters. (1)
Hippos cheeks move when they drink water. (1)	
The worlds smallest bear is the sun bear. (1)	
When the zoo is closed it is a lot quieter. (1)	**I don't know. (42)**
Owl can't turn their heads around. (1)	
I learned about otters. (1)	

Uno at Oxbow Park:

Did you learn anything new while camping at the Oxbow Park?	
	Songs (1)
Plants (3)	Trees (1)
I can walk by myself into the forest in the dark with out a light (3)	I learned that it is 1000 acres (1)
	Deers eat sour grass (1)
Yes (2)	How to make your own food (1)
How to set up a tent (2)	They have gross bathrooms (1)
Tracks (2)	How to build a bird house (1)
It has a lot of animals (1)	New stories about tree coons (1)
There is a wild animal (1)	Climbing mountains (1)
Birds of the way (1)	How to fox walk (1)
There are things I can eat (1)	
I learned about Peacocks (1)	
I learned that the ancient forest is special (1)	
	I don't know (7)

Uno at the Zoo:

What was your favorite thing about staying overnight at the Zoo?	
Sleeping in the tents. (24) Roasting marshmallows/ s'mores. (15) Seeing the animals. (26) Cooking our food.. (12) Everything. (9) The night hike. (9) Set up the tent. (5) Games. (5) Campfire. (5) Playing. (4) The food. (4) Seeing the elephants. (4) met knew people. (3) Polar bear tag. (3) Camping. (2) We got flashlights and water bottles. (2) Dream catchers. (2) We got to play football. (2) You see more animals when the zoo is closed. (2) Scary stories (2) Getting to stay overnight at the zoo (2) Making the pancakes. (2) Laughing at Roman. (1) Friends. (1) Learning more things. (1) Hanging out with the most awesome counselor ever. (1) Seeing the owls. (1) The rhinos. (1) The night hunt. (1) You learn a lot of stuff. (1)	Seeing my relatives, the monkeys! (1) I talked to my friends and animals. (1) Hearing animals. (1) Singing songs. (1) The tigers. (1) Seeing the panther. (1) The projects. (1) Making bird houses. (1) It was really fun. (1) Changing clothes. (1) The dishes. (1) Looking at the turtle. (1) That I got sleep. (1) The polar bears. (1) Night. (1) The hole thing. (1) Seeing the animals at night. (1) You get to hear the monkeys in the morning. (1) I learned about animals. (1) Peacocks. (1) Doing the activities. (1) Water fights. (1) Making tracks. (1) Being with my friends. (1) Went to see the tigers. (1) Staying up till 10:30. (1) My favorite is a fish. (1) Afternoon hike. (1) The leopards. (1) Light up candy. (1) That I got to stay the night. (1) Bat house. (1) I don't know. (34)

UNO at Oxbow Park:

What was your favorite thing about staying overnight at Oxbow Park?	
The deer (6) Sleeping in nature (5) Food/Eating(3) Cooking (3) Hiking (2) We had fun (2) Going down the river (2) We got to stay up late (2) When we saw nothing (1) S'mores (1)	The night walk (1) Popcorn (1) Sitting near the river (1) Seeing the animals (1) Being with you all (1) Setting up tents (1) The ancient forest (1) Eating the Oxalas (1) Making the tent (1) everything (1) I don't know (3)

UNO at the Zoo:

What is something you wanted to do but didn't get to do at the zoo?	
Nothing. (22) Pet the animals. (10) Didn't get to see all the animals. (9) See the otters and the penguins. (6) Feed the animals. (5) Buy something. (5) Ride the train. (5) Go to the petting zoo. (5) See the wolves. (4) See the alligators. (4) Go to cold blooded kingdom. (3) Night hike. (2) Stay longer. (2) Going in the cage. (2) Stay up late! (2) Go to the Lorakeet landing (feeding). (2) See the birds. (2) See the spiders. (2) Make the animals food. (2) See bears. (2) Make cookies. (2) I wanted to play laser tag with the flashlight. (2) See the leopards. (2) Sleep more. (2) Play with the animals. (1) Run around. (1) Eat pizza. (1) Didn't get to play in the jeep.(1) Spend more time with big group. (1) See hummingbirds. (1) The jelly fish. (1) Go through the snakes. (1) See the monkey. (1) Get to hold the snake. (1) See the bugs. (1) Play more games. (1) Feed the monkeys. (1) Pet the owl. (1) See the rhinos. (1) I wanted to hold the snake at the cold blooded kingdom. (1) Pet a polar bear. (1) Get a ride on the elephants. (1)	See the tigers. (1) Swimming. (1) See the seals. (1) Talk at night. (1) Feed the penguins. (1) Slide down the neck of the giraffes. (1) Sleeping while looking at the stars. (1) I didn't get to sleep. (1) I wanted to go in the little white carousal. (1) Tell scary ghost stories. (1) Make a bat house. (1) Cascade exhibit. (1) Pull weeds. (1) Tell stories in the tent. (1) See birds of prey. (1) See the parrots (1) Hide and go seek. (1) See the naked mole rats.(1) I wanted nachos. (1) Cleaning the cages. (1) Roast two marshmallows (1) See the crocodiles. (1) Snow cones. (1) See all of the zoo. (1) Go hike in the night. (1) I didn't go camping with my big sister. (1) Make Chris sleep outside the tent. (1) See the great animals. (1) Water fight. (1) I would like to have a better look at the chimpanzees. (1) Play in the playground. (1) I would like to pet the rabbit (1) I didn't have much time to learn about all the animals (1) I didn't see any tracks. (1) See the elephants. (1) See the hippos. (1) See Polar bears. (1) See footprints. (1) See snakes. (1) I don't know. (44)

UNO at Oxbow Park:

What is something you wanted to do but didn't get to do at Oxbow Park?	
Nothing/ I did everything I wanted to (8) Swim (4) See more animals (2) Go exploring on my own in the forest (2) Play and sleep in a tent with my friend ___ (2) Look for Foxes (1) Go closer to the river (1) Eat more Oxalas (1)	Play in the playground (1) Play in the water (1) Horse back riding (1) Camp for a week (1) Hiking (1) See the sun by the Sandy River (1) Have a tent party (1) See Drea (1) More activities and less walking (1) I don't know (4)

UNO at Oxbow Park:

How is camping at Oxbow different from camping at the Zoo?	
I did not camp at the Zoo before (6) Animals aren't in cages (3) Deers live at Oxbow (2) It is kinda the same (1) In the park it smells like wood, the Zoo smells like elephants (1) It is a park not a Zoo (1)	Forest is an animals place (1) It has camp sites, and a river and a forest (1) It is more fun (1) Woods (1) Sounds (1) There is not a lot of animals (1) We were closer to the animals (1) I Don't Know (9)

ATTITUDES ABOUT THE ZOO EXPERIENCE:

Participants were asked to rate their Zoo or Oxbow experience. More than 90% of the participants either "liked or loved" their camping experience. Almost all participants want to go camping again. The following is a summary of their ratings.

Zoo Participants:

Post-Assessment Question:	% Hated it	% Didn't like it	% Liked it	% Loved it
12) How would you rate your camping experience?	0	1	33	66

Post-Assessment Questions:	% Yes	% No
13) Do you want to go camping again?	99	1
14) Do you want to come to the zoo again?	97	3

Oxbow Participants:

Post-Assessment Question:	% Hated it	% Didn't like it	% Liked it	% Loved it
12) How would you rate your camping experience?	0	10	43	47

Post-Assessment Questions:	% Yes	% No
13) Do you want to go camping again?	93	7

ADULT CHAPERONES RESPONSES:

Adult chaperones were generally positive about the UNO program. They listed many benefits to the program and felt the students learned basic teamwork skills and camping skills. Some chaperones also identified some recommended changes, such as more training for the youth leaders.

UNO at the Zoo: Chaperones Comments

What, if anything, did you feel the students learned during their camping experience at the zoo?	
They learned about various animals (13)	
They learned basic teamwork skills and how to work together (13)	They learned to have fun (1)
They learned to set up a tent (9)	They learned to stay out of the animals homes (1)
They learned how to cook on a stove (7)	They learned how to make s'mores (1)
They learned basic camping skills (7)	They learned that animals are just as scared of them as they are of the animals (1)
They learned to be responsible for themselves (7)	They learned about beavers (1)
They learned about habitats (6)	They learned about the sounds animals make (1)
They learned new camps songs (4)	They learned that some animals can be free while others need to be contained (1)
They learned how to build a bird house (2)	They learned about the row smallest owl (1)
They learned to stay quite (2)	They learned an appreciation for the zoo (1)
They learned about animal tracks (2)	They learned how to follow instructions (1)
They learned an understanding and appreciation of nature (2)	They learned how to conduct themselves in a group overnight setting (1)
They learned what they should take camping (2)	They learned about dish washing (1)
They learned how to make new friends (2)	They learned about owl legends (1)
They learned how to make bat houses (2)	They learned about contributing and leadership(1)
They learned cooperation and competency skills (2)	They learned about respect given to animals in captivity (1)
They learned to do things for themselves (1)	They learned how to nail (1)
They learned what a silk tree looks like (1)	They learned that they could walk alone in the dark (1)
They learned about the camping experience (1)	
They learned that it is good to care and respect animals (1)	

UNO at Oxbow Park: Chaperones comments:

What, if anything, did you feel the students learned during their camping experience?	
They learned how to set up tents. (3)	
They learned how to cook their food. (3)	
They learned how to build a bird house. (3)	They learned what it takes to survive on a camp ground. (1)
They learned the basics of camping. (2)	They learned what deer like to eat. (1)
They learned about plants. (2)	They learned about habitats. (1)
They learned how to work together. (2)	They learned that they can walk alone in the dark. (1)
They learned about different trees and what they offer to us and to the animals. (1)	They learned that their behavior effects the natural world. (1)
They learned to walk slow and listen to what's around them. (1)	They gained self-confidence and patience and a sense of their place. (1)
They learned about animal habits. (1)	They learned to respect the outdoors. (1)

UNO at the Zoo: Chaperones Comments

What was beneficial?	
Everything (7) Doing everything on their own(i.e. Setting up the tent, cleaning and cooking) the kids gained confidence and learned responsibility (6) Good host staff / counselors (6) The cooking (6) Learning the basics of camping (3) That they were in small groups (3) Group projects (2) Many and varied activities (2) Learning to set up tents (2) Storytelling (2) Having the place to ourselves (2) Snack time (2) Being in groups with kids they didn't know (1) Walking around the sites and playing games (1) Good and clear guidelines (1) Learning about the animals (1) Staying after hours gave kids sense of exclusiveness (1) Knowledge gained (1) Journal writing (1)	Support the students (1) That all our needs were pre thought out and met (1) Learning about animals and their habitats (1) The kids got more creative and willing to learn about the outdoors and animals (1) Getting to know each other (1) They can use these skills again (1) The organized schedule (1) The interactions between the counselors and the kids (1) The patience of the counselors (1) The campfire (1) Chrisite was very cool (1) Cleanup (1) Showed the kids that their community cares about them (1) Animal demos (1) Artemio was a great role model (1) Sleep over (1) The hikes (1)

UNO at Oxbow Park: Chaperones Comments

What was beneficial?	
The hikes. (2) How the children were responsible for themselves (cooking, cleaning, and setting up their own tents). (1) Breaking the groups up by apartment complexes. (1)	Everything.(1) Having them walk down the trail in the dark by themselves. (1) Learning how to walk quiet towards animals. (1) The journal writing. (1)

UNO at the Zoo: Chaperones Comments

What was unsuccessful or unnecessary?	
Everything was successful (11) Lack of training in the youth leaders(2) Need a flatter area for chaperone tents (2) The games and camp fire were boring (1) Activities could have been better planned (1) Night hike was not late enough, animals were doing the same thing they were doing earlier (1) The early bedtime (1) The helpers and counselors should have got shirts and flashlights (1) Need loud squeak with ventilation system fixed (1) The kids were told they could buy things and then they weren't allowed to (1) Counselors with the ZAP team need to slow down while looking at the animals (1) Not chasing the kids while looking at the animals (1)	Needed a little more space in the tents (1) Sing along was a bit flat (1) Needed more time for the kids to learn the answers to the questions in the journals (1) The dream catchers activity was too demanding at the end because the kids were tired (1) Wished we could have gone behind the scenes of the zoo (1) Kids shouldn't have been forced to go to sleep (1) For larger groups need a larger area (1) Journals were stupid and not needed (1) The first walk through the zoo was not necessary, an introductory game would have been better (1) The hike was unsuccessful, spent the whole time looking for a bathroom (1) Collages didn't seem to peak the kids interest (1)

UNO at Oxbow Park: Chaperones Comments;

What was unsuccessful or unnecessary?	
Nothing was unsuccessful. (2) Trying to get the groups together to do different stuff. Some groups were very slow getting ready. (1) We didn't get to write in our journals. (1) The counselors seemed uninterested in the kids for the most part. They were all on "break"at the same time.(1)	Learn some quiet camp songs. (1)

UNO at the Zoo: Chaperones Comments

Was the camping experience or the Zoo experience more memorable for the kids? Camping (16) Zoo (3) Both (9)	

UNO at Oxbow Park: Chaperones Comments:

What part of the experience was most memorable for the kids? I am sure this will leave a great impression on the kids. (2) When the deer came into the campground. (2) Cooking food. (1) Learning about the forest and what it offers to us. (1)	Building the song house. (1) Learning to overcome their fears by walking in the dark by themselves. (1) The closeness of the animals and the plants. (1)

UNO at the Zoo: Chaperones Comments

Other comments:	
Thought everything was wonderful/ kids had a great time/ thanks (10) They should have meat next time (for the burritos) (3) My councilor Lorin did a wonderful job with the kids (1) I am grateful my daughter was given this opportunity, the program was great for the kids and parent volunteers (1) Counselors should use whispers so kids will follow their lead (1) Staff and counselors were very good with the children and had a good knowledge of the zoo (1) Some of the girls had never cooked before and needed more instruction to cook the pancakes (1) Breakfast was not very nutritious (pancakes), this caused the kids to be more tired later in the morning.(1) The high school counselors were fabulous, they are great role models (1) The kids seemed to have a great time (1) Thank you for letting us be here, I hope you will schedule some time for the kids to buy things. (1)	It was not very well structured, the hand books were not used, but if they would have been the kids could have learned much more about the animals (1) Chaperones should have been able to go look at the animals at night (1) Staff was very helpful and energetic (1) This was a fun experience for me too (1) I think the kids really learned a lot and would want to return (1) A different breakfast (1) Staff needs to watch their language in front of the kids. Heard words like "damn, crap and sucks" (1) The youth leaders need to know what is open and what is not. Spent a lot of time looking for animals, and then walked to fast and missed a lot. (1) You have a great program, most of the Zap team was great, but had a problem with one ZAP person. (1)

UNO at Oxbow Park: Chaperones Comments

Other comments:	
Last year we were way too rushed and stressed. This year there was just the right amount. Thank you! (1) It was planned out very well, great program. (1) Some people need to figure out if they like this type of work. (1) Skits would be cool. (1) The staff was well prepared, pleasant, and in general very knowledgeable about everything.(1)	They made the experience wonderful for the kids and staff alike. (1) This was a lot of fun, I liked it better than the zoo. It offers a better sense of what real camping is like. (1) I would like to see this offered to 6 and 7 year olds. (1)

CONCLUSIONS:

The UNO program was successful for both the Zoo participants and the Oxbow participants. This evaluation was conducted with a large sample of subjects and showed that the program was very effective. The results clearly showed that participants enjoyed their experience and many learned some valuable information about camping, animals and nature. However, more emphasis may need to be placed on some knowledge areas for participants to completely understand some information presented.

An analysis of responses compared to a control group found the Zoo Overnight participants to have significantly more correct responses than the control group for 7 of 9 knowledge questions and the 4 of 9 knowledge questions for the Oxbow Park participants. The following are the knowledge areas the Zoo and Oxbow participants had statistically significant more correct responses than the control group.

Zoo and Oxbow Participants had significantly more correct responses in the following areas:

* Knowledge about what you should take with you when you go camping.
* Knowledge about what you need to bring to cook with when you go camping.
* Knowledge about how you tell the difference between two animals by looking at their tracks.
* Knowledge about what birds eat.

Zoo participants (only) had significantly more correct responses in the following areas:

* Knowledge about the definition of a habitat.
* Knowledge about how plants help animals and people.
* Knowledge about what kind of mammals live in the city.

In general the Zoo and Oxbow participants knowledge was better than the control group, but their knowledge was not complete or always correct. Some of the participants still lacked knowledge about a few of the areas targeted by the UNO program. In three of the nine areas at least 40% of the Zoo and Oxbow participants incorrectly answered the knowledge questions. It is clear from these data that the questions asked in these three areas did not directly match the focus of the activities of the program. More work needs to be done by the program to increase the students knowledge level to be able to answer these questions correctly or the questions should be reworded to coordinate closer with the intent of the program.

A comparison of the Oxbow participants and the Zoo participants was also conducted. This comparison was somewhat hindered by the smaller size of the Oxbow group (N=30). Due to their smaller sample size the Oxbow group would have to show much higher scores than the Zoo participant group (N=194) to achieve a statistical signficant difference. Even so, the analysis found that in most cases the Oxbow group had higher percentages of correct responses than the Zoo participants and for one question area the Oxbow participants had statistically higher levels of correct responses than the Zoo participants. This area was: knowledge about how you tell the difference between two animals by looking at their tracks.

At the conclusion of their overnight experience students indicated that they learned many new things while camping at the Zoo and at Oxbow Park. Their favorite thing about staying at the zoo was seeing the animals, sleeping in tents and cooking food. Oxbow Park participants said

their favorite thing was seeing deer and sleeping in nature. **Ninety-nine percent of the Zoo participants and 93% of the Oxbow Park participants indicated that they wanted to go camping again and 90% or better of all participants said that they liked or loved their experience.** When asked if there was anything that they wanted to do but didn't get to do, the most common answer was that they "got to do everything they wanted." A few students indicated they wanted to "see more of the animals."

Adult chaperones were generally positive about the UNO program. The Zoo Overnight chaperones listed many benefits to the program and felt the students learned basic teamwork skills, camping skills and learned about various animals. Oxbow Park chaperones thought everything was wonderful and that the kids had a great time.

The evaluation included 90% of the UNO program participants. The evaluation found that the UNO program at the Zoo and at Oxbow Park was very successful. The participants indicated that they enjoyed their experience and they learned a lot about camping and nature. However, an analysis of the percent of incorrect responses found that for some knowledge areas more education of the participants is needed. The UNO program needs to decide if this knowledge information is important. If this information is important then a plan of action to teach the knowledge should be developed. Other suggestions for next year include: 1) expand the size of the off-site overnight experiences to determine the effectiveness of this experience compared with the Zoo experience; 2) target the evaluation questions to better determine the intent of the program and; 3) modify the scoring of the knowlege questions to include four possible points for each question, thus including "I don't know" as another point on the scale.

The evaluation was successful at documenting the effectiveness of the UNO overnight program. However, it should be noted that the evaluation was conducted by asking young children to complete answers to a survey. In general this procedure was effective, but in some cases individual children's responses may not be as accurate as they could be with an interview procedure. In comparison to the evaluation conducted last year it appears that the major problems with the orientation sessions and the evaluation procedures identified previously were addressed and the program has been improved. The UNO program has demonstrated that it is effective at providing a good experience for kids in the outdoors.

APPENDIX

PRE-POST AND CONTROL PARTICIPANT SURVEY

CHAPERONE INTERVIEW

SCORING/CRITERIA FOR KNOWLEDGE QUESTIONS

unopre2.wpd

UNO PRE-WRITTEN SURVEY

NAME OF STUDENT:_____ GENDER: Girl Boy AGE:_____

YOUR ADDRESS: _____

NAME OF ORGANIZATION (Group) YOU ARE WITH:_____

DATE:_____

Instructions: Circle or write in all responses for each question.

1) Have you camped at the Zoo before? 1. Yes 2. No

2) Have you ever gone camping before? 1. Yes 2. No

3) Have you ever been to the Zoo before? 1. Yes 2. No

If yes:

3a) Did you go to a camp at the zoo? 1. Yes 2. No

4) Have you ever planted anything in a garden? 1. Yes 2. No

5) Have you ever planted anything in a forest? 1. Yes 2. No

6) What should you take with you when you go camping?

Answer:_____

_____

Or I don't know

7) What do you need to bring to cook with when you go camping?

Answer:_____

_____

Or I don't know

8) Name some sounds that you would hear when you are camping.

Answer:_____

_____

Or I don't know

9) How can you tell the difference between two animals by looking at their tracks?

Answer:_____

_____

Or I don't know

10) Name some animals that are nocturnal (they wake up and are active at night)?

Answer:_____

_____

Or I don't know

11) What is a habitat?

Answer: _____

_____

OR I don't know

12) How do plants help animals and people?

Answer:_____

_____

OR I don't know

13) What do birds eat?

Answer: _____

OR I don't know

14) What kind of mammals live in the city?

Answer: _____

_____

OR I don't know

For Questions 15-17, Rate the following activities from 1-4: (circle the number below)

	I hate it	I dislike it	Like it	Love it	Don't Know
15) How much do you like going to the Zoo?	1	2	3	4	DK
16) How much do you like camping?	1	2	3	4	DK

17) Why do you want to go camping at the zoo? Write a few sentences.

_____

_____

_____

_____

_____

_____

UNO POST-SURVEY

(TO BE COMPLETED BY THE STUDENT OR COMPLETED THROUGH AN INTERVIEW AFTER OVERNIGHT AT THE ZOO)

NAME OF STUDENT:_____ GENDER: Girl Boy AGE:_____

YOUR ADDRESS: _____

NAME OF ORGANIZATION (Group) YOU ARE WITH:_____

DATE:_____

Instructions: Circle or write in all responses for each question.

1) What should you take with you when you go camping?

Answer:_____

_____

Or I don't know

2) What do you need to bring to cook with when you go camping?

Answer:_____

_____

Or I don't know

3) Name some sounds that you would hear when you are camping.

Answer:_____

_____

Or I don't know

4) How can you tell the difference between two animals by looking at their tracks?

Answer:_____

_____

Or I don't know

5) Name some animals that are nocturnal (they wake up and are active at night)?

Answer:_____

_____

Or I don't know

6) What is a habitat?

Answer: _____

_____

OR I don't know

7) How do plants help animals and people?

Answer:_____

_____

OR I don't know

8) What do birds eat?

Answer: _____

OR I don't know

9) What kind of mammals live in the city?

Answer: _____

_____

OR I don't know

10) Did you learn anything new while camping at the Zoo?

Answer: _____

_____

OR I don't know

11) What was your favorite thing about staying overnight at the Zoo?

Answer: _____

_____

OR I don't know

12) How would you rate your camping experience at the Zoo?

1. Hated it	2. Didn't like it	3. Liked it	4. Loved it

13) Do you want to go camping again? 1. Yes 2. No

14) Do you want to come to the zoo again? 1. Yes 2. No

15) What is something that you wanted to do but didn't get to do?

_____

_____

Zoo Story

UNO POST-SURVEY (OXBOW PARK)

(TO BE COMPLETED BY THE STUDENT OR COMPLETED THROUGH AN INTERVIEW AFTER OVERNIGHT AT OXBOW PARK)

NAME OF STUDENT:_____ GENDER: Girl Boy AGE:_____

YOUR ADDRESS: _____

NAME OF ORGANIZATION (Group) YOU ARE WITH:_____

DATE:_____

Instructions: Circle or write in all responses for each question.

1) What should you take with you when you go camping?

Answer:_____

_____

Or I don't know

2) What do you need to bring to cook with when you go camping?

Answer:_____

_____

Or I don't know

3) Name some sounds that you would hear when you are camping.

Answer:_____

_____

Or I don't know

4) How can you tell the difference between two animals by looking at their tracks?

Answer:_____

_____

Or I don't know

5) Name some animals that are nocturnal (they wake up and are active at night)?

Answer:_____

_____

Or I don't know

6) What is a habitat?

Answer: _____

_____

OR I don't know

7) How do plants help animals and people?

Answer:_____

_____

OR I don't know

8) What do birds eat?

Answer: _____

OR I don't know

9) What kind of mammals live in the city?

Answer: _____

_____

OR I don't know

10) Did you learn anything new while camping at the Oxbow Park?

Answer: _____

_____

OR I don't know

11) What was your favorite thing about staying overnight at Oxbow Park?

Answer: _____

_____

OR I don't know

12) How would you rate your camping experience at Oxbow Park?

1. Hated it	2. Didn't like it	3. Liked it	4. Loved it

13) Do you want to go camping again? 1. Yes 2. No

14) How is camping at Oxbow Park different from camping at the Zoo?

_____

_____

15) What is something that you wanted to do but didn't get to do?

_____

_____

UNO CHAPERONES SURVEY

Name of organization (group) you are with: _____

DATE OF OVERNIGHT:_____

1) What, if anything, did you feel the students learned during their camping experience at the Zoo?

_____

_____

_____

_____

_____

_____

2) What was beneficial?

_____

_____

_____

_____

_____

_____

3) What was unsuccesful or unnecesary?

_____

_____

_____

_____

_____

_____

4) Was the camping experience or the zoo experience more memorable for the kids?

5) Other comments:

UNO CHAPERONES INTERVIEW (Oxbow Park):

Name of organization (group) you are with: _____

DATE OF OVERNIGHT:_____

1) What, if anything, did you feel the students learned during their camping experience?

_____

_____

_____

_____

_____

_____

2) What was beneficial?

_____

_____

_____

_____

_____

_____

3) What was unsuccesful or unnecesary?

_____

_____

_____

_____

_____

_____

4) What part of the experience was most memorable for the kids?

5) Other comments:

SCORING/CRITERIA FOR KNOWLEDGE QUESTIONS

Question 1. What should you take with you when you go camping?

POINTS	ANSWER	CONDITION
2	food, tent, sleeping bag	all three must be listed
1	one of the above or water; plus: must list at least one other appropriate item	
0	all other response or "I don't know"	

Question 2. What do you need to bring to cook with when you go camping?

POINTS	ANSWER	CONDITION
2	stove, pots/pans, food	all three must be listed
1	one of the above; plus: one other appropriate item	
0	all other responses or "I don't know"	

Question 3. Name some sounds that you would hear when you are camping?

POINTS	ANSWER	CONDITION
2	3 animals you would find in Oregon camping or appropriate camping sounds	all three must be listed
1	at least 1 animal or appropriate camping sound and one other Zoo animal or another appropriate camping sound	
0	all other response or "I don't know"	

Question 4. How do you tell the difference between two animals by looking at their tracks?

POINTS	ANSWER	CONDITION
2	Size, specific characteristics of each (number of toes....), walking pattern (shape may substitute for one of these).	all three must be listed
1	one of the above plus one other appropriate	
0	all other responses or "I don't know"	

Question 5. Name some animals that are nocturnal (they wake up and are active at night)?

POINTS	ANSWER	CONDITION
2	names 3 nocturnal animals	all three must be listed
1	names 2 nocturnal animals	
0	all other responses or "I don't know"	

Question 6. What is a habitat?

POINTS	ANSWER	CONDITION
2	home/house (place you live); plus name at least one of the needs (food, water, shelter, place to raise young)	both must be listed
1	only home or names 2 needs	
0	all other responses or "I don't know"	

Question 7. How do plants help animals and people?

POINTS	ANSWER	CONDITION
2	2 of the following: food medicine, tools, shelter, clothes, carbon dioxide or other appropriate answer	2 answers must be listed
1	1 of the above answers	
0	all other responses or "I don't know"	

Question 8. What do birds eat?

POINTS	ANSWER	CONDITION
2	2 appropriate answers	2 answers must be listed
1	1 answer	
0	all other answers or "I don't know"	

Question 9. What kind of mammals live in the city?

POINTS	ANSWER	CONDITION
2	3 mammals and all animals listed are mammals	all three must be listed
1	at least 1 mammal, but all animals listed are mammals	
0	all other response or "I don't know"	