

4-H WILDLIFE STEWARDS

"Caring for Our Wildlife Heritage One School at a Time"

Volume 5, Issue 1

September-October 2001

4-H Wildlife Stewards is a Master Science Educators Program of Oregon State University Extension through funding of the National Science Foundation



4-H Wildlife Stewards Receives a \$740,000 National Science Foundation Grant

More native birds, butterflies and other wildlife are likely to visit more Oregon school grounds, thanks to a \$745,058 federal grant from the National Science Foundation. This NFS grant will allow us to expand our 4-H Wildlife Stewards program statewide and to develop it into a national model.

In the four years since we started the 4-H Wildlife Stewards Program, it has been adopted by 46 schools in the Portland area, 8 in Benton County and 2 in Linn County. The students, with help from their teachers and volunteers, have built natural areas ranging from simple birdbaths surrounded by native vegetation to complex enhancement of wetlands, "bioswales" that absorb pollution runoff from pavement and native plant gardens that are a tempting lure for birds, butterflies and other small wildlife.

The grant from the National Science Foundation will enable Oregon's landmark 4-H Wildlife Stewards program to plan three years' worth of training volunteers, provide training tapes and materials, set up a web page and promoting the program.

A national board advisory board will also be organized. Board members from Vermont, Illinois, Michigan, Virginia, California, the National 4-H Council and the U.S. Department of Agriculture will work together to establish 4-H Wildlife Stewards programs across the country.

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4-H Wildlife Stewards Member Schools

4-H Wildlife Stewards Program

The 4-H Wildlife Stewards Program is a 4-H Master Science Educators program of OSU Extension/ 4-H and supported by the National Science Foundation.

4-H Wildlife Stewards are volunteers in partnership with public and private organizations to assist students and teachers in the development and use of wildlife habitats on school grounds.

4-H WILDLIFE STEWARDS VOLUNTEER OFFICE

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Ainsworth Elementary

Portland

Arleta Elementary

Portland

Banks Elementary

Banks

Beach Elementary

Portland

Binnsmead MS

Portland

Bridger Elementary

Portland

Deer Creek Elementary

Tualatin

Deep Creek

Damascus

Eagle Creek Elementary

Clackamas

Eccles Elementary

Canby

Environmental MS

Portland

Fairplay Elementary

Corvallis

Findley Elementary

Beaverton

Franklin Elementary

Corvallis

George MS

Portland

Hayhurst Elementary

Portland

Hoover Elementary

Corvallis

Highland Elementary

Corvallis

Highland Elementary

Gresham

Jefferson Elementary

Corvallis

John McLoughlin Elem.

Oregon City

Kellogg MS

Portland

Lewis Elementary

Portland

Llewellyn Elementary

Portland

Marion County 4-H Wildlife Stewards

Salem

Madison HS

Portland

Mary Woodward Elementary

Tigard

Meek Elementary

Portland

Mt. View Elementary

Corvallis

Ocean Crest Elementary

Bandon

Oregon Episcopal School

Portland

Parkrose HS

Portland

Rose City Park

Portland

Sauvie Island Elementary

Sauvie Island

Seth Lewelling

Milwaukie

Sitton Elementary

Portland

Stephenson Elementary

Portland

Sunrise MS

Clackamas

West Gresham Elementary

Gresham

Wilcox Elementary

Portland

William Walker Elementary

Beaverton



PROGRAM UPDATE



4-H Junior Wildlife Stewards Camp A BIG SUCCESS!!

The first annual 4-H Junior Wildlife Stewards Camp was a resounding success! Eight 4-H Wildlife Stewards Adult volunteers, 4-H Wildlife Stewards Extension Staff, Beth Stout from National Wildlife Federation and eleven teen counselors worked with 46 Junior 4-H Wildlife Stewards Camp last month. The camp was held August 15-18th at the 4-H Education Center in northwest Salem.

Forty-six rambunctious boys and girls from Portland, Tualatin, Newport, Sisters, Gaston, Mill City, Tigard and points in between participated in the 4-H Junior Wildlife Stewards Summer Camp, August 15-18, 2001. Campers were 8-12 years of age. Camp was held at the Oregon 4-H Conference and Education Center, seven miles northwest of Salem. The campers learned about fish and aquatic life, trees and forestry, critters and creatures, and birds and bats. They also participated in swimming, fishing, hiking, canoeing, making nature crafts, attending evening campfires and much more.

4-H Wildlife Stewards volunteers who served on the adult camp staff included Arlan Madsen, Anita Leach, Nancy Allen Chuck Packard, and Celina Steiger. Multnomah County 4-Hers selected for counselor positions at camp included Jacob Beach, Alicia Bolster, Marie Hanawalt, Casey Roach, Kim Thomas, Michael Tiland, Zack Vance, and Mariah Van Garde. 4-H Wildlife Steward, Rachel Beebe, was also a counselor. If you couldn't make it to camp this year, call the 4-H Wildlife Stewards office NOW to get on the mailing list for next year's camp. Call 503-725-2048 and let us know if you want to be a camper or a counselor for CAMP 2002!



4-H Wildlife Stewards SCHOOL ADVANCEMENT PROGRAM

*4-H Wildlife Stewards create **sustainable** wildlife habitat sites on school grounds and promote stewardship among youth by inspiring, educating, and connecting communities, schools, natural resource agencies and organizations.*

The time has arrived for schools to assess their role in helping to create environmentally sustainable communities through wildlife habitat projects on school grounds. **“Sustainable” is a term used to mean “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”** The 4-H Wildlife Stewards Advancement Certification Program is a way of supporting 4-H Wildlife Stewards, teachers, students and communities to understand and address the physical limits that exist in our world and then stimulate their imagination to create programs and resources that are in line with that framework. 4-H Wildlife Stewards Habitat sites are a place for students to observe, study, and take action to protect their own environment. Wildlife Habitat sites on school grounds also provide an ecologically and aesthetically improved landscape; the creation of a chemical-free landscape; and a model for environmental rehabilitation and community building.

To learn how your school can develop wildlife habitats on school grounds and at the same time promote practices that are socially, environmentally, and economically sound, the 4-H Wildlife Stewards Advancement Certification Program brochure is included with this newsletter. 4-H Wildlife Stewards Member Schools complete a series of four advancement levels. At each level, training, support, and recognition for school wide efforts are provided by OSU Extension 4-H.

4-H Wildlife Stewards Welcomes LISA ALBERT TO THE 4-H EXTENSION STAFF

The 4-H Extension Staff is pleased to welcome 4-H Wildlife Steward Lisa Albert to the 4-H Wildlife Stewards Staff. Lisa will be working half-time as the 4-H Wildlife Steward School Coordinator. She will work closely with Joan Engeldinger, our 4-H Wildlife Stewards Volunteer Coordinator to ensure the our 4-H Wildlife Stewards School receive the support they need to conduct successful on-site projects. Lisa is a familiar face in the 4-H Wildlife Stewards Program. She has helped train several of the last 4-H Wildlife Stewards classes in the last few years. She has been a Wildlife Steward since 1998 and is also a OSU Extension Master Gardener.

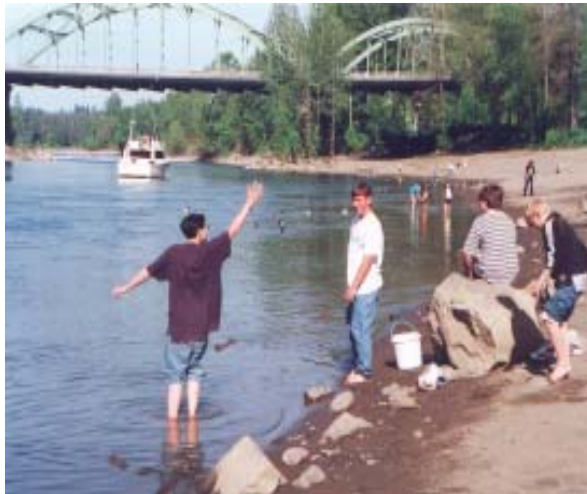
Specifically, Lisa will work closely with the schools to help them work toward sustainability of their project through the 4-H Wildlife Stewards Advancement Certification project outlined above.





There's something Fishy Going On

The 4-H Wildlife Stewards office is gearing up for the In-School 4-H Fish Stewards Program. Selected classrooms will be hatching and rearing salmon and trout eggs for release in approved Oregon streams and ponds. Fertilized fish eggs are supplied by Oregon Department of Fish and Wildlife in October and January to enrolled schools. 4-H will support teachers in elementary, middle and high schools with training, curriculum, loaning equipment and support personnel.



A training class for enrolled teachers and interested 4-H leaders was held September 12, 2001, after school. Curriculum was introduced and discussed. Equipment set-up and water monitoring will be demonstrated. For more information about the 4-H Fish Stewards program call Joan at 503-725-2048 or email joan.engeldinger@orst.edu

July 4-H Wildlife Stewards Training Held in Clackamas County

The July 4-H Wildlife Stewards training was held at the John Inskeep Environmental Learning Center on the beautiful campus of Clackamas Community College. Eighteen new Stewards from Multnomah, Clackamas, Washington and Benton Counties completed their initial three-day training.

Susan Walling will be utilizing her new skills to introduce the 4-H Wildlife Stewards program to Foster School in Foster, OR. Susan is a teacher at Foster and anxious to get started on their habitat.

Marybeth Angulo and **Jerika Spencer** are both teachers at Oak Heights Elementary School in Sweet Home. Marybeth teaches first grade and is eager to assist her students in creating the habitat at Oak Heights. Jerika has a second/third grade blended classroom and is anxious to utilize the 4-H Wildlife





Stewards curriculum with her students.

Polly Knox is a neighborhood volunteer who will be working at George Middle School in North Portland. Polly has volunteered at other elementary schools, but is looking forward to the interaction between adolescents and the habitat project.

Victoria Mead is excited to bring the 4-H Wildlife Stewards program to Wismer, a new elementary school in Beaverton. Victoria has extensive experience as a volunteer and enjoys working in her community.

Kim Christiansen, Terre Grisham, Danielle Foliard and **Kim State** will all be assisting

schools in the Oregon City School District. **Kim C.** is looking forward to working on a habitat restoration project with her daughter, Anne. Anne attended the Junior 4-H Wildlife Stewards Summer Camp in August. Terre is interested in combining her love of the arts with her enthusiasm for environmental education. Danielle brings her expertise in forestry and her interest in community education programs to this project. **Kim S.** will be sharing her education and knowledge in the horticulture field with her fellow volunteers and the students.

Sage High School students, **Michelle Ballard, Desirae Roseneau, Chris Tysinger, Kacie Sutherlend, Chris Kinne, Angela Prentice,** and **Ryan Clark** were selected by their school to attend the training. They will take their new skills to the elementary schools of Oregon City to assist **Amy Millikin** and **Savina Darzes** in targeting at risk children in an after-school program. Amy and Savina were hired by John Inskeep Environmental Learning Center to deliver environmental education through a recently acquired grant. Welcome to our newest graduating class of 4-H Wildlife Stewards!

National 4-H Week is October 7-13!

Help us Celebrate this special week . . . tell a friend about 4-H

The 4-H Pledge

**I pledge
My head to greater thinking,
My heart to greater loyalty,
My hands to larger service,
My health to better living,**



SCHOOL UPDATES



Welcome to Edwards Elementary School

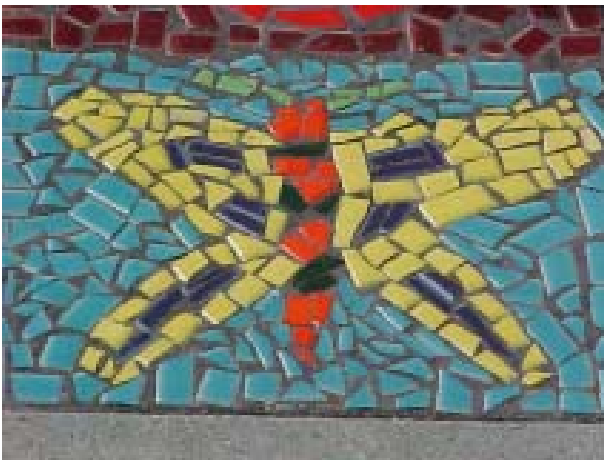
Edwards Elementary School in Southeast Portland has proudly named their garden area “Edwards Garden of Wonders.” The garden originally began with the help of the Community Gardens and the Chefs Collaborative. Several community

organizations have helped Edwards to establish their garden.

Two active parents, Jacque Schatz and Jim MacCloskey, attended the January 2001 4-H Wildlife Stewards training. They have introduced the available curriculum to the enthusiastic teachers of Edwards. Students are learning about the soil, insects, bats and birds in the wildlife habitat area of the garden.

Edwards Earth Day Celebration 2001 involved the entire school in various activities. Students enjoyed the stories of a Native American storyteller, a bread baking demonstration in a wood burning oven, and Haiku Earth wish flags.

The students at Edwards will continue to learn new skills as they explore worm bin composting, waste management systems, and wildlife habitat maintenance. “Edwards Garden of Wonders” has become an integral part of the educational program at Edwards Elementary School.



Edwards Elementary School 4-H Wildlife Stewards Art Project



TIPS FOR THE GARDEN

Creating a Garden Pond to Attract Wildlife (Part One)

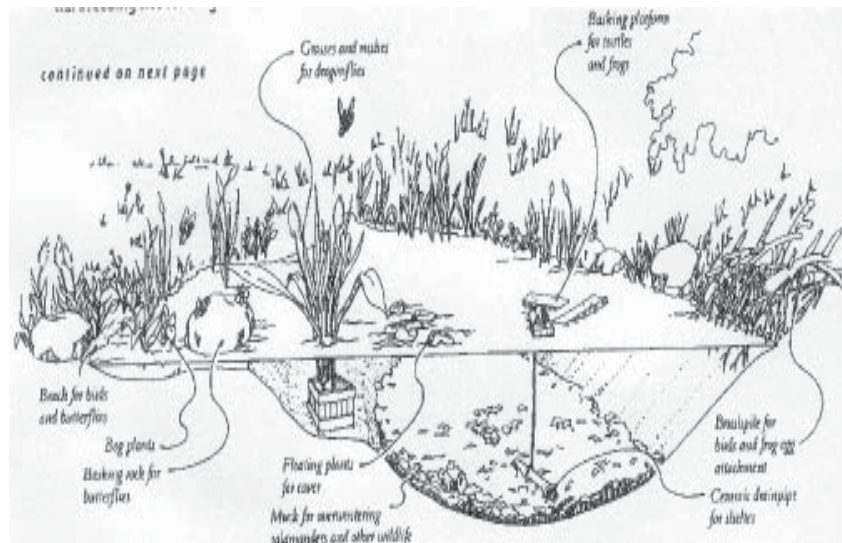
BY Nancy Allen

OSU Extension Wildlife Instructor and
4-H Wildlife Steward

The following article was adapted from Creating a Garden Pond to Attract Wildlife (draft), an OSU Extension publication

Of all the habitat features you might consider for attracting wildlife, a pond may be the most rewarding. Most animals need water to drink

more natural features your pond has the more attractive it will be to wildlife. Many species are particularly attracted to moving water or fountains. Moving water also discourages mosquitoes. In general, the species you are likely to attract in the Pacific Northwest include amphibians, reptiles, raccoons, deer, dragonflies, songbirds, jays, some waterfowl, and great blue herons. While, many species may be attracted to your pond, some may be undesirable and you will have to decide how tolerant you will be of any negative impacts associated with their use or design your pond to reduce damage from undesirable species (see Wildlife section). This article describes the process of constructing a simple pond to attract wildlife, ideas to consider before you begin, and recommendations for



and many use water for feeding, bathing, reproduction, thermal regulation, resting, and cover. A pond is a great way to attract wildlife to your property and create natural beauty for your landscape. Ponds can be any shape or size, with or without running water or fountains. The

maintaining a safe, healthy pond for wildlife and for you.

PREPARATION

Constructing a pond can be expensive, but careful planning can prevent unnecessary expenses or damage to your yard. Before you begin construction of



your pond, check with your

local zoning or school district office to ensure that your pond will be safe and legal and if there are any permit requirements. It is possible that there are restrictions on the size, depth or even the actual location of your pond. If you would like professional help constructing your pond, look in the Yellow Pages under “Ponds” or “Landscape Contractors”. If you know people who have a pond, ask them for advice and inquire about any problems they encountered.

Choosing the size and location of your pond will be your next step. Consider all underground utilities, tree roots, and other potential obstacles. If the water table in your area is high, keep your pond above it to prevent damage to your liner. You can check the high water line in winter by digging a small hole the same depth as your proposed pond and observe it for 24 hours. If the hole fills with water on a no-rain day, your water table is high in this area and you should make sure your pond depth is above this line. Consider where your pond will drain when overflowing from rain or when cleaning. You can channel it to your school yard or down a hill or create a small wetland to collect the excess water. To see how your pond will look in different locations, you can use a garden hose or string to outline the pond. Make sure it is in an area that is visible from the school or wherever you want to view it from. Your pond should fit in with the natural landscape of the land and have a curved, irregular shape. For smaller school yards, a 3-by-5 foot pond is appropriate, whereas, a larger area could accommodate a 5-by-8 foot or larger pond.

Most ponds, unless they are very shallow, should have at least 5-6 hours of sunlight per day to allow enough sunlight for plants to grow but enough shade to help prevent excess growth of algae. You should avoid locating your pond directly under trees or over-hanging shrubbery; fallen leaves can make the water too acidic for aquatic life and decomposing leaves use up oxygen and can cause odors. Don't worry

about keeping the pond totally free of leaves; a 3-inch layer of debris settling on the bottom is desirable and gives wildlife a place to burrow in the winter. It is important that your pond can be safely accessed by wildlife and have suitable habitat such as tall grass surrounding or adjacent to it. Consider locating your pond near a water supply so filling and changing the water will be easier if needed. Finally, if you plan on having running water and/or a pump and filter, you will need to locate your pond close to an electric supply.

Pump and Filters

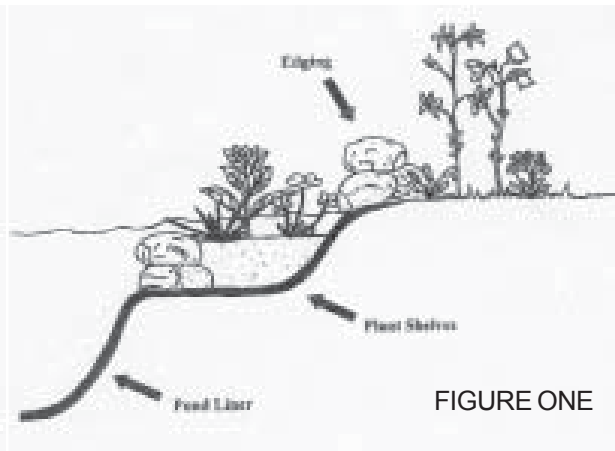
If you are going to have fish in your pond, it is recommended that you install a filter and pump. The pump oxygenates the water by “turning the water over” and filters help clean the water. If you want a waterfall or fountain, you will need a pump. There are two categories of electronic pumps: submersible or surface. Submersible pumps are less expensive and quieter but not as powerful as surface pumps. Larger ponds will require a surface pump. A commercial dealer for pumps will be able to help you decide which pump is best for your pond. Solar pumps and panels are a good choice but only function when there is ample sunlight. If using an electric pump, it is recommended that you choose a water-cooled pump rather than an oil-cooled one. Oil-cooled pumps may cause oil slicks in your pond if the seal on the motor leaks. Each pump has its specifications printed on the box, which will help you decide which pump is right for you. Pump capacity and filter will depend on the size of your pond. The location of your pump, whether it is located under water or on land, will depend on the type and brand of pump you purchase. It is best to follow the manufacturers' recommendations to ensure maximum performance of your pump and filter.

INSTALLATION

The first step in installing your pond after you have chosen a suitable location is deciding on depth, shape,



and size. Though some school districts may limit the depth of a school pond to no more than 6 inches, if possible the hole should be at least 20 inches deep at the deepest part and have shallow water around the edge or at one end and include plant shelves. Plant shelves (see Figure 1) provide habitat for wildlife and a “shelf” for planting marginal plants. The shelves should be about 8-10 inches deep and 8-12 inches wide and as long as you want around the perimeter. Plan for a shelf 6 inches from the top around the perimeter for rocks to edge your pond. One side of your pond should have a gradual slope (a drop of 6 inches for every 3 horizontal feet). A muddy, beach-like area is important for many species of wildlife. Songbirds will drink and bathe in this shallow



area. Tadpoles, insects, and other aquatic creatures use this area for cover, basking, and nesting. Mud is used by some nesting birds and for obtaining moisture and nutrients by butterflies.

After determining the depth, the next step is deciding which type of liner to use. The following are types of liners that can be used for garden ponds: (for

attracting wildlife, the polyvinyl chloride liners are recommended. Other options are listed with reasons why they are not recommended).

Recommended

(1) Polyvinyl chloride (PVC): The most popular choice for ponds. This material is very flexible and durable, and will easily conform to any shape. If you do not buy a liner that is specifically made for ponds, make sure the words “fish friendly” appear on the packaging or the liner itself as other types of plastic may give off chemicals toxic to plants and animals. The thicker the liner, the longer it will last. A 45-mil liner will last up to 50 years, 32-mil will last 20 years, and a 20-mil liner will last for 7-10 years. Use a black or dark brown liner so that it is less visible when filled with water. Lighter-colored liners will give your pond the look of a swimming pool.

Not recommended

(2) Concrete: This type of lining is rigid, non-flexible and difficult to construct. Concrete will require on-going maintenance to repair any cracks and crumbling that may occur. It also must be leached before fish and plants can be introduced. This type of lining is generally not very practical.

(3) Molded Fiberglass: For most garden ponds this liner is impractical also. They are expensive, heavy and difficult to install.

(4) Prefabricated Polyethylene Shell: These liners are durable and easy to install. However, their slopes can be steep and slippery, making them inhospitable to wildlife. These are more expensive than PVC liners.

(5) Butyl rubber: Similar to PVC but more expensive.

(6) Kiddie pools: These are too shallow and may contain toxic chemicals. These are not recommended for ponds containing wildlife or fish.

Instructions for using PVC liner

To determine how much liner you need, use the following equation:

Multiply the depth of the pond by three and add it to the length and the width. This will allow enough room for an apron around the edge of your pond.

For example if you have a pond that is 15 feet long by



10 feet wide and 2 feet deep, the amount of liner needed would be:

$$15 + (2 \times 3) = 21 \text{ feet long}$$

$$10 + (2 \times 3) = 16 \text{ feet wide}$$

Excavation

Mark out the shape of your pond with stakes and string, paint, chalk or a garden hose. If your pond is small or you don't mind lots of physical labor you can dig the pond by hand; otherwise you can hire someone to dig it for you with a backhoe (look in the Yellow Pages under "Landscape Contractors"). You should consider the location of your pond and how accessible it is for machinery. Prior to breaking ground, determine where you want the excavated dirt to go. You can use it to landscape around your pond or somewhere else in your yard or haul it away. You can place the dirt on tarps to make transporting easier or if you want to protect grass.

Preparing the hole

After the hole is dug, make sure the perimeter is level. You can place a level on top of a straight board or use a water level if your pond is too wide. Remove any rocks or sharp objects that could puncture the liner, then add 1 – 2 inches of damp sand on the horizontal surfaces (plant shelves and bottom). Old carpet or newspaper on the vertical surfaces will also help to protect the liner.

Placing the liner

Spread the liner out in the sun prior to installation and it will be softer and easier to manipulate. It will be easier to place the liner with two people. Place the liner over the excavated pool with overlap equal on all edges and let it sag naturally into the bottom. Place bricks or rocks on the outside edges of the

liner to hold it in place. Have one person take their shoes off and get inside the pool while the other person adjusts the rocks holding down the liner to make sure the liner fits snugly against the ground.

Together, fold and tuck the liner to make it as smooth as possible and reduce the number of wrinkles. Don't worry about removing all the wrinkles; this will not harm the liner.

Completion

Place the water hose on the liner so the center will fill first. As it fills, the water will begin pulling the sides down. Eventually the liner will "hit" the plant shelves and sink to the bottom, gradually filling in all the contours. While the pond is filling, keep checking the bricks or stones to make sure they are sliding evenly. After the pond is full, let it settle for a day and then install your edging and trim the apron. If you use chlorinated water, you should use a de-chlorinator or let the water sit for two or three days so the chlorine can evaporate before introducing wildlife or vegetation. Stirring vigorously with a stick helps speed up the evaporation process.

Rocks or stones can be used as edging to make your pond look more natural. They also serve the useful purposes of hiding the liner and keeping it in place as well as protecting the liner from ultraviolet deterioration. Sandstone, slate and granite are excellent choices for edging. Limestone should be avoided because lime can leach into the water and be hazardous to wildlife. You can vary the width and length of the rocks for a more natural look but make sure they will be heavy enough to stay in place. Put one stone slightly lower than the others in the area where water will runoff when overflowing. Place sand or small rocks in the shallow areas to provide footing for wildlife.

(next issue: Pond Vegetation)





NEWS FROM NATIONAL WILDLIFE FEDERATION

As you plan your habitat site this fall, remember to consider native plants that provide interest when students are in school! Here are some natives that will provide good fall color AND food for wildlife in all seasons in the years to come.*

Vine maple (*Acer circinatum*) Vine maples can grow to 15-30 feet and can take partial to full shade and moist to dry soil. Birds like woodpeckers, nuthatches and finches eat the seeds and bees use the nectar. The leaves turn orange, scarlet or yellow in the fall.

Serviceberry (*Amelanchier alnifolia*) Serviceberry can grow from 8-30 feet and can take full sun to partial shade. It needs good drainage in moist or dry soil. Serviceberries are eaten by a variety of birds including woodpeckers, chickadees, waxwings, goldfinches and juncos. Spring azure butterflies use the nectar and swallowtail larvae eat the leaves, which turn red and yellow in the fall.

Pacific Dogwood (*Cornus nuttallii*) Pacific dogwood can grow to 50' tall, so make sure your schoolyard has enough space for this beautiful tree. It will grow in full sun or partial shade and needs well-drained moist to dry soil. Be aware that dogwoods are susceptible to anthracnose disease which can

result in spotted leaves, stems, fruit or twigs and in leaf-drop. According to the Sunset Western Garden Book, it is caused by fungal spores that are spread by rain and garden sprinkling. To help avoid the disease and maintain healthy dogwoods in your habitat, avoid overhead watering and use mulch to reduce splashing. Birds like sapsuckers, woodpeckers and thrushes eat the red fruit which appears in the fall, when the leaves turn yellow, pink and red.

Red Osier Dogwood (*Cornus stolonifera*)

Growing from 4 - 12' tall, Red-Osier (also called red-twig) dogwood will grow in full sun or partial shade and likes moist to wet soil. Vireos, robins, flickers, and other birds eat the berries and the leaves, branches and twigs provide excellent fall and winter color. It is thicket-forming, so plant it where you'd like it to spread into a thicket - near a pond or in a meadow.

Western Crabapple (*Malus fusca*) This native crabapple can grow to 30' tall. It likes moist soil and can take full sun to partial shade. The fruits are eaten by evening grosbeaks, towhees, woodpeckers, waxwings and other birds. In the fall the leaves turn yellow-orange to red.

Viburnum Edule (*Highbush Cranberry*)

Growing from 6-10 feet tall, this native likes full sun to partial shade and moist soil. It keeps its berries into the winter and the leaves turn dark red in the fall. The berries are eaten by jays, thrushes, flickers, robins and more. Would be a good companion plant near Western crabapple and Red-Osier dogwood!

Sources: The Seed Lady's Book of Native Plant Lists by Laurie J. Hoffman (updated edition available from Bosky Dell Natives at 503-638-5945) and Russell Link's Landscaping for Wildlife in the Pacific Northwest.



TEACHERS!!!!

If you are looking for ways to encourage other teachers at your school to utilize the habitat site, why not work with the National Wildlife Federation to schedule a workshop? Our "Discovering Habitats" (K-8) Workshop includes activities addressing the role habitats play in an ecosystem, how students can identify habitats in Oregon, and other activities designed to incorporate your habitat site into the curriculum. Contact Beth Stout to schedule a workshop in your district.

NEW RESOURCES

Here are a few excellent resources I found while browsing the bookstores this summer!

Patricia K. Lichen's brand new "Uncommon Field Guide" series provides an excellent introduction to some of the Northwest's most interesting plants, animals and natural phenomena. With short (2-3 page) essays on each topic, this is a highly readable collection that focuses on lesser-known facts! For example, did you know that salal is the most common shrub in Pacific Northwest forests and that it could be found growing among blown-down trees and mudflows shortly after Mt. St. Helens erupted in 1980? Or that coyotes can run faster than 30 miles per hour and that they can be found throughout the Northwest - from forests to suburbs? The three books in the series are River-Walking Songbirds and Singing Coyotes: An Uncommon Field Guide to Northwest Mountains; Brittle Stars & Mudbugs: An Uncommon Field Guide to Northwest Shorelines & Wetlands; and Passionate Slugs & Hollywood Frogs: An Uncommon Field Guide to Northwest Backyards. The paperback series is available at bookstores from Sasquatch Books and each book is \$14.95.

Two other recent finds are Hands-On Nature: Information and Activities for Exploring the Environment with Children, from the Vermont Institute of Natural Science and edited by Jenepher Lingelbach and Lisa Purcell; and Stories from Where We Live: The Great North American Prairie, edited by Sara St. Antoine. Hands-On Nature is a treasure house of activities for K-6 (with adaptations for upper and lower grades) on habitats, adaptations, cycles, designs of nature and more. It is available in bookstores for \$24.95 from the University Press of New England. Prairie is a terrific resource for students age 9 and up and for teachers who want to incorporate literature into their studies of habitat. The book includes essays, poems, short stories and memoirs about the prairie states and will give the reader a well-rounded appreciation of both history and nature in that ecoregion and encourage readers to explore the literature of their own ecoregion. It's \$19.95 hardcover from Milkweed Editions and available in bookstores.

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RESOURCES

New Videos from OSU Extension

Master Recycler Videos

The Master Recycler program in Multnomah County has produced three new videos on reducing, reusing, and recycling waste materials. Each tape is approximately 15 minutes. One focuses on manufacturers, another addresses office waste with a focus on reducing paper waste, and the third is a motivational tape "Why should I bother". If you think you would use one or all of these tapes in your programming or that clientele in your county might be interested, please contact Megan Cogswell in the Extension Multnomah County office. She is also the best contact for questions.

Invasive Aquatic Species

A new video from Oregon Sea Grant at Oregon State University aims to help stop the spread of aquatic invasive species by promoting early detection and quick response. "You Ought To Tell Somebody! - Dealing with Aquatic Invasive species" particularly targets aquatic monitoring staff and volunteers, field educators, aquaculture operators and others who spend times in lakes, rivers, and estuaries.

This 23 minute video presents an overview of the problem of invasive aquatic plants and animals, and provides identification and information about one significant West Coast threat - the Chinese mitten crab.

"You Ought to Tell Somebody!" catalog number ORESU-V-01-002, is available from Oregon Sea

Grant for \$18.95 plus shipping and handling; bulk discounts are available. For ordering information contact Oregon Sea Grant 541-737-2716 or (within Oregon and Washington) toll-free at 1-800-375-

OSU Offers a Waterwise Website

In the kitchen, in the garden or in the field - every drop of water is precious this year. To help deal with this year's growing water shortage, Oregon State University has created a "best advice" web site on water conservation.

The site includes a list of Extension's drought and water conservation publications, many available at no charge on-line. Dozens of publications are available which include tips for:

- Conserving water in the kitchen and with washing clothes
- Maintaining a water-efficient lawn and garden
- Managing livestock during a drought
- Measuring well water levels and estimating flow rates
- Strategies to reduce irrigation use in crops and orchards

New publications are added regularly. Find them at OSU's Extension and Experiment Station Communication Web site at: <http://eesc.orst.edu/waterwise>.



HATE THROWING ANYTHING AWAY?

Become a Master Recycler!

The next OSU Extension Service Master Recycler class begins October 9, 2001 from 6:30-9:00 pm, at the Clackamas County Sunnybrook Service Center. Advanced registration is required.

Course fee \$50 (scholarships are available) which includes
8 classes, materials, and 2 Saturday field trips

*Participants are expected to volunteer 30 hours in the
community after taking the course.*

INTERESTED? CALL 503-725-2035

OSU EXTENSION SERVICE OFFERS EDUCATIONAL PROGRAMS, ACTIVITIES, AND MATERIALS WITHOUT DISCRIMINATION BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, NATIONAL ORIGIN, AGE, MARITAL STATUS, DISABILITY, OR DISABLED VETERAN OR VIETNAM-ERA VETERAN STATUS. OSU EXTENSION SERVICE IS AN EQUAL OPPORTUNITY EMPLOYER.

Oregon's Watershed Week

Get ready for Oregon's third annual Watershed Weeks. Between September 15 and October 21, watershed councils and other groups will host over 120 water resource education and stewardship events around the state. The 2001 Watershed Weeks Event Guide has hit the streets; copies can be ordered toll-free by calling 1-888-854-8377. The event guide and other Watershed Weeks information are also available on-line at <http://eagrnt.orst.edu/watershedweeks.html>.

Native Plant Website

If anyone is looking for a retail source of NW native plants or basic info on stuff like what to plant to attract birds and butterflies, botany for gardeners and lists of plants for sell, check out this website:

www.teleport.com/~nwplants/

The website has some cool information and is



GRANTS

The HJ Weddle Environment Education Foundation

The H.J. Weddle Environmental Education Foundation awards grants to schools in Oregon for environmental education projects. The maximum amount is \$500.00 and the deadline is November 30. Interested teachers, parents or students can email me Mike Weddle at mkweddle@home.com or call at (503) 363-6983 for guidelines and an application.

4-H 2002 Youth in Action/ Community Service Grants

Funding provided by: MetLife Foundation

4-H Community service project grants of \$500 to \$1,500 are available to youth who take leadership roles and partner with other youth and adults in their communities.

Grants require youth teams to identify critical issues in their communities, develop activities to address these issues, and educate other young people and adults about ways to engage in community service. Youth must be actively involved in writing proposals and implementing projects. Collaborative efforts reflecting the diversity of the

community are encouraged. Grant award funds are not to be used to establish new 4-H clubs or fund leadership trainings. For information and the application, click on the National 4-H Council Youth Grants Program Web site at <http://www.fourhcouncil.edu/ycc/grantinfo.htm>.

Grant proposals need to be only two pages in length, but must address the specifications detailed in the grant two pages in length, but must address the specifications detailed in the grant application. The proposal deadline is November 2, 2001.

Funding Available for Service-Learning Projects

For eight years, CRF's Robinson Mini-Grant Program has awarded grants of \$100 to \$1000 as seed money to teacher-student teams and community organizations for service-learning projects that address serious community problems. The grant program honors the late Maurice R. Robinson, founder of Scholastic, Inc., a champion of innovative education, and longtime supporter of effective citizenship education.

THE DEADLINE FOR THIS YEAR'S GRANT APPLICATION IS OCTOBER 15, 2001.

Please visit the NEW or PROGRAMS section of their web site for a list of selected winning service projects from the 2000-01 Robinson Mini-Grants Awards and to download the guidelines/application for the 2001-02 competition. Visit their web site at: <http://www.crf-usa.org>



CURRICULUM

Here is a sample lesson from the [4-H Wildlife Stewards Classroom Curriculum for Grades 4-5](#). This curriculum contains 30 lessons that can be used with your students in your wildlife habitat project. If you are interested in a copy of this curriculum or the [4-H Wildlife Stewards Curriculum for Grades 3-6](#) contact Joan Engeldinger, 4-H Wildlife Stewards Volunteer Coordinator at (503) 725-2048 or Joan.Engeldinger@orst.edu.

HOW TALL IS THAT TREE

EDUCATION BENCHMARKS

- Select and use appropriate math strategies.
- Apply graphic and/or numeric models to solve problem.

SUPPLIES NEEDED

- Pencil
- Measuring Tape

PREPARATION

Have the students discuss ways they would measure how high a tree is.

LOCATION: Outside

TIME NEEDED: 20 minutes

METHODS

1. Take the group outside and have them find a tall tree.

2. Ask the students to guess how tall it is from the base to its top leaves. Have them take turns measuring each other and ask them how they think they might measure something as tall as a large tree. Pick two volunteers from the group to demonstrate an easy way to measure a tree's height.
3. Stand at a point where you can see the entire height of a tree, and have one of the students hold a pencil at arm's length and look at the tree behind the pencil. The pencil should be pointing up and the tip of the pencil should "touch" the tip top of the tree. The student can then slide his or her thumb down the pencil until it "touches" the base of the trunk.
4. Keeping the arm straight, the student should rotate his or her wrist so the pencil becomes horizontal and the student's thumb is still touching the tree's base. A second volunteer should now stand in the distance so that the point of the pencil is right on his or her toes. This student is now the same distance from the tree as the tree is tall! Using a tape measure, the group can measure the distance from the tree to the student standing at the pencil point. This measurement is the height of the tree. Have the group choose partners and estimate and measure the heights of other trees. The group can then rank the trees from short to tall.

EVALUATION

Pose the following word problems for the students to solve using the data they collected about trees in your area. Have them create additional problems for each other.

- What is the difference between the height of the tallest and shortest trees?
- How many trees are more than 20 feet tall?
- What is the sum of the heights of the three tallest trees?





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Helpful Websites for Seeking Grants

- The Foundation Center (<http://www.fdncenter.org/>) has lots of information on grant givers and guidance on how to research and prepare proposals. The website has lists of foundations and their websites.
- Philanthropy NW — previously PNW Grantmakers Forum — (<http://www.philanthropynw.org/>) is a useful site with information about foundations, etc. based in the NW.
- GuideStar (<http://www.guidestar.org/index.stm>) has tax returns and other information about both foundations and nonprofits. You can list your own organization on this as it is used by grantgivers in their background research on applicants (even by foundations that don't solicit proposals, choosing instead to approach organizations who do work closely allied to their own priorities).
- ChangingOurWorld.com (<http://www.changingourworld.com/index.html>) is an on-line service that offers advice and analysis of philanthropy and grant getting, including free monthly e-mail newsletters.
- Environmental Grantmaking Foundations is an annually updated guide that, believe it or not, lists foundations that make grants for environmental work. It is not 100% comprehensive as some of the smaller, family foundations are not included, but it does list hundreds of potential funders with a break down of recent grantees and amounts given, funding priorities, etc. There is also a CD-ROM version, which is the swiftest way to make a search for potential granters.

