WaterTalk

Alaska Idaho Oregon Washington

U.S. Environmental Protection Agency, Region 10 Bulletin - EPA 910/9-92-043 August 2003

EPA NEWS

Water Temperature Guidance to Protect NW Salmon, Trout

EPA recently released new **water temperature guidance** to protect Pacific Northwest salmon and trout. The guidance is intended to help Idaho, Oregon, Washington and Pacific Northwest tribes develop water temperature standards that meet Clean Water Act and Endangered Species Act requirements.

Development and population growth have contributed to the warming of northwest rivers over the last hundred-plus years. Elevated water temperature is the most widespread water quality problem in the Pacific Northwest, and partly to blame for the decline of threatened and endangered pacific salmon and bull trout. Warm waters can stunt fish growth, increase disease, and even kill cold-water fish. High water temperature that fostered disease was a major cause of last year's massive fish kill of over 30,000 adult fall chinook in the lower Klamath River. Nearly 1500 rivers and streams in Idaho, Oregon and Washington have been identified as "temperature impaired."

The Clean Water Act requires states and authorized tribes to adopt water quality standards. EPA must approve or disapprove the standards and consult with other agencies to ensure the standards do not jeopardize salmon and trout listed under the Endangered Species Act.

The states of Idaho, Oregon and Washington and several tribes are in the process of adopting new temperature water quality standards. "With the endorsement of the

(continued on page 2)

In This Issue...

(continued from page 1)

federal fish agencies," EPA Regional Administrator L. John Iani said, "this guidance will help states and tribes set standards and get them into place much more quickly than would otherwise be possible. Ultimately that means better protection for fish – and sooner."

The guidance is a product of a three-year collaborative effort involving the Idaho Department of Environmental Quality, Oregon Department of Environmental Quality, Washington Department of Ecology, NOAA Fisheries, U.S. Fish and Wildlife Service, Nez Perce Tribe, and the Columbia River Inter-Tribal Fish Commission.

Copies of the Temperature Guidance and technical issues papers are available at http://www.epa.gov/r10earth/temperature.htm. For more information, contact Druscilla Keenan, EPA, at 206/553-1219, or keenan.dru@epa.gov.

National Listing of Fish and Wildlife Advisories Released

EPA recently released the annual **National Listing of Fish and Wildlife Advisories**, which is designed to protect susceptible populations such as young children and women of child-bearing age. The report highlights a 93 percent increase in state safe-eating guidelines that inform the public that fish caught from specific waters have been tested and are safe to eat.

When the safe-eating guidelines began in 1993, only 20 were issued. The number increased slowly until 2002, when 164 new safe-eating guidelines were issued. Currently 3,084 miles of rivers and more than 4 million lake acres nationally have safe eating guidelines for at least one fish species. Although there are advisories for a total of 39 chemical contaminants, most of them involve five main contaminants: mercury, PCBs, dioxins, DDT, and chlordane.

Some advisories recommend no or limited consumption of some species caught during recreational fishing, while others may recommend certain preparation and cooking methods to reduce risks.

An advisory may be targeted to the population at large, or to specific groups such as pregnant women and/or children. It may be limited to certain sizes or species of fish, or it may apply to fish caught in a particular section of a waterway or to all waterways.

The National Listing of Fish and Wildlife Advisories and more information on fish consumption advisories can be found at www.epa.gov/waterscience/fish, or contact your local health department.

EPA Announces Annual Beach Survey

EPA has announced the results of its annual **Beach Survey**, which shows further increases in beach monitoring nationwide. The number of beaches participating in this national survey has grown from 1,021 in 1997 to 2,823 in 2003. About 25 percent of the beaches surveyed had at least one advisory or closing during the 2003 swimming season. Most advisories are issued to warn of elevated bacteria levels. Frequently identified reasons for elevated bacteria levels are storm water runoff, sewer overflows and failing or inadequately maintained septic tanks. For more information, visit www.epa.gov/waterscience/beaches.

EPA NEWS

EPA's New Construction Permit Addresses Stormwater

EPA recently published a new **Construction General Permit** in the *Federal Register*, covering all construction activity on sites one acre or larger where EPA is the permitting authority. In Region 10, EPA is the permitting authority in Alaska and Idaho, in Indian country, and at federal facilities in Washington. The new permit implements Phase II of the NPDES **Stormwater Regulations** which contains new requirements for construction sites between one and five acres. (Sites that are five acres or larger are already regulated under Phase I of the program and earlier construction general permits.)

Under this permit, construction site operators will need to develop and implement stormwater pollution prevention plans and file a "Notice of Intent" form at least 7 days before disturbing any land. For more information, see www.epa.gov/npdes/stormwater/cgp or contact Jeanne O'dell, EPA, at 206/553-6919 or 1-800-424-4372, or e-mail odell.jeanne@epa.gov.

Learn How EPA Connects with Communities

EPA Region 10's unique approach to achieving environmental results is yielding positive outcomes, as shown in a new report called ***Connecting with Communities: Place-Based Approach Achieves Results***. Region 10 has stationed several EPA staff away from the regional hub in Seattle to manage projects at the grassroots community level. These "place-based" staffers work in cities and towns where critical environmental needs exist. Because these staff live and work in communities, they gain access and insight into local issues. Their placement allows them to more easily:

- work directly with citizens to achieve specific environmental results
- collaborate with tribes and state governments to develop realistic solutions
- develop long-term, trusting relationships
- visit residents, door-to-door, to talk about issues
- feed information to EPA program offices so well-informed decisions are made.

Learn more about this unique staffing approach, including a sampling of on-the-ground projects. Check out the report online at www.epa.gov/r10earth. Go to Index, and click C for Community Based Environmental Protection. For a hard copy of this 17-page booklet, call EPA at 206/553-1200 or 1-800-424-4372.

EPA Grant Funds Benefit Partners, Environment

A new report by EPA Region 10 provides an overview of the grant activities and accomplishments of its Office of Ecosystems and Communities. Called ***Working with Our Partners: Achieving Environmental Results***, the report discusses how an investment of almost 75 million dollars has achieved substantial protection of human health and the environment for the people of Alaska, Idaho, Oregon and Washington.

The 14-page report describes several grant programs. It covers where the money comes from, how it can be used, and where it goes. Actual project examples are featured. For a free copy, call EPA's Public Environmental Resource Center at 1-800-424-4372 or 206/553-1200.

Region 10 of the U.S. Environmental Protection Agency (EPA) covers the states of Alaska, Idaho, Oregon, and Washington.

Year of Clean Water Continues

Lakes Awareness

EPA, with the North American Lake Management Society and others, is celebrating **Lakes Awareness** as part of the Year of Clean Water. Boating, fishing and swimming are favorite recreational uses of our lakes and reservoirs. Lakes and reservoirs also play other vital, often under-appreciated, roles. They:

- *provide drinking water and irrigation water,*
- *are a source of electricity and power generation,*
- *serve the important function of absorbing rainfall and runoff from land,*
- *help prevent floods,*
- *provide homes for wildlife.*

Because lake pollution is caused by so many activities, no single approach is enough to prevent it. Education aimed at changing behaviors is key to any successful lake protection effort. Information about how to get free outreach materials such as door hangers, brochures, key chains and posters is available online. For information, visit: www.epa.gov/owow/lakes/month/. To find out what materials are available from EPA's regional office, call 206/553-1200 or 1-800-424-4372.

Coasts and Oceans

Coasts and Oceans is another theme highlighted by EPA for the Year of Clean Water, 2002-2003. Ocean and coastal waters are an integral part of our daily lives.

Despite their tremendous value, ocean and coastal waters are being degraded at an alarming rate. In order to restore and protect these resources, EPA has designed an array of programs to better define and control coastal pollution problems, develop research and monitoring plans, and initiate habitat restoration efforts.

However, challenges remain. Future successes will come from good science, working closely with our partners and stakeholders, focusing our efforts using a watershed approach, and effectively applying regulatory authority.

EPA offers educational resources to help spread the word about coasts and oceans, including brochures, posters, magnets, bookmarks, and so on. To learn more, go to http://www.epa.gov/water/yearofcleanwater/. To find out what materials are available from EPA's regional office, call 1-800-424-4372 or 206/553-1200.

CALENDAR

August

Water Conservation Month, www.epa.gov/water/yearofcleanwater.

14-15: Northwest Power Supplies Conference, Seattle, WA. Law Seminars International, 1-800-854-8009 or http://www.clenews.com/LSI/03/03powa.htm.

September

Water Monitoring Month, www.epa.gov/water/yearofcleanwater.

7-9: Annual Biosolids Management Conference, Chelan, WA, 206/684-1145.

23-26: Pacific Northwest International Section of the Air and Waste Management Association Conference, Girdwood, AK, www.pnwis.org.

27: National Estuaries Day, www.estuaries.gov.

October

Water Monitoring Month continues, www.epa.gov/water/yearofcleanwater.

7-11: Thinking Globally While Acting Culturally, North American Association for Environmental Education Conference, Anchorage, AK, http://naaee.org/conferences/index.php.

18: World Water Monitoring Day, www.worldwatermonitoringday.org.

27-29: Brownfields 2003, Portland, OR. 1-877-343-5374, www.brownfields2003.org/index.aspx.

29-30: Getting It Done: The Role of TMDL Implementation In Watershed Restoration, Stevenson, WA. Washington Water Research Center, 509/335-5531, http://www.swwrc.wsu.edu/conference2003/index.html.

November

Source Water Protection Month, www.epa.gov/water/yearofcleanwater.

17-20: 2003 Joint Ventures: Partners in Stewardship Conference, Los Angeles, CA. Susan Alden, USDA Forest Service, 510/559-6342 http://www.partnerships2003.org/main.html.

EPA Issues Public Involvement Policy

EPA recently issued a new **Public Involvement Policy**. It gives clear guidance to EPA staff on effective ways to involve the public in the Agency's programs and activities. The policy recommends these steps for effective public involvement:

1. plan and budget
2. identify whom to involve
3. consider providing assistance
4. provide information
5. conduct involvement
6. review, use input and provide feedback
7. evaluate public involvement.

The policy recognizes: the public's changing needs, new laws and regulations; expanded public participation techniques and media (*e.g.* Internet); the importance of partnerships and technical assistance; and increased state, tribal and local government capacity to carry out programs. EPA also released the "Framework for Implementing EPA's Public Involvement Policy" and EPA's "Response to Public Comments on the Draft 2000 Public Involvement Policy." Materials are posted at http://www.epa.gov/publicinvolvement/policy2003/index.htm.

The policy is not a rule and is not legally enforceable. It supplements public involvement requirements under existing laws and regulations and helps EPA implement them in the most effective ways.

EPA's Report on Environment Available

EPA's ***Draft Report on the Environment*** is now available. This report presents the first-ever national picture of environmental quality and human health in the United States. The report and its corresponding Draft Technical Document can be found at www.epa.gov/indicators.

The report is a significant milestone in EPA's Indicators Initiative and will become the benchmark for future evaluations of our environment and human health. It uses available scientific data to answer questions about the nation's environmental quality and human health. It identifies significant progress made in cleaning up and safeguarding our nation's air, water and land, and in protecting human health during the past 30 years. It also illustrates what still needs to be done. For instance:

- Public health is generally good and still improving: people are living longer, and infant mortality has dropped to the lowest level ever recorded in the United States. We have much more to learn, though, about the links between environmental conditions and human disease trends;
- Air pollution has declined 25 percent over the past 30 years, yet in 2001, more than 133 million Americans lived in areas where air quality was unhealthy at times because of high levels of at least one air pollutant;
- More than 90 percent of Americans drink water served by systems that are meeting our health-based standards – up from 79 percent in 1993 – but the condition of our surface waters nationally is unknown, and our estuaries are in fair to poor condition nationwide; and
- Releases of more than 300 toxic chemicals have declined by 48 percent since 1988, and we have significantly improved the way we manage our wastes.

Get Healthy Environment News

Note! ***Healthy Environment News*** is still available from EPA. This 8-page newspaper came out last spring, but its content is still relevant and useful. It's in color and has loads of practical, timely information. Learn how to be sun-wise this summer. Find out about protecting children from environmental health risks. Get tips for using water wisely in the home. Read about safe handling of pesticides, and much more. Available in Spanish, too. For a free copy, call EPA at 206/553-1200 or 1-800-424-4372.

EPA Wastewater Permits Online

EPA is making electronic copies of NPDES wastewater permits and fact sheets for major facilities available online. Permit documents are now available for about 450 facilities that have had NPDES permits issued or reissued since November 1, 2002. EPA will post copies of permits and fact sheets for major industrial and municipal facilities as existing permits are reissued and new permits are issued. For information about this project and access instructions, see www.epa.gov/npdes/permitdocuments.

Screening Tool Helps Assess Water Quality Trading

A ***Water Quality Trading Assessment Handbook*** is now available free online from Region 10 of the U.S. Environmental Protection Agency. EPA's water quality trading policy encourages market-based programs for improving water quality. This 90-page guide takes you beyond the introductory level and helps you assess your watershed's potential to benefit from this innovative policy.

Water quality trading is a businesslike way of focusing on cost-effective, local solutions to pollution problems. In a typical trade, a party with an expensive water quality problem would compensate another party to gain equivalent, less costly pollution reduction. For example, rather than install expensive phosphorus treatment technology to meet phosphorus reduction requirements, a discharger might pay a landowner to plant streamside vegetation to achieve the same, or better, results.

If you are familiar with your watershed's water quality conditions and how water quality trading works, this screening tool can help you investigate whether trading is right for your watershed. The handbook guides you through a structured, informal assessment of trading opportunities. It looks at the environmental, economic and technical factors in a watershed that influence your ability to create a water quality trading market.

To read the handbook, or learn about Northwest trading activities, go to: www.epa.gov/r10earth, click on Index, click on T for Trading, and go to Water Quality Trading. For a hard copy, call EPA at 206/553-1200 or 800-424-4372. To learn about trading on the national scene, go to http://www.epa.gov/owow/watershed/trading.htm. For more information, contact Claire Schary, EPA Region 10, at 206/553-8514 or 800-424-4372 x8514.

Environmental Justice Grants

EPA invites applications for the first **Environmental Justice Collaborative Problem-Solving Grant Program**. This program will provide financial assistance to community-based organizations that wish to engage in constructive problem-solving, using tools developed by EPA and others to solve environmental or public health concerns. Fifteen grants of $100,000 will be awarded by January 2004. Non-government, nonprofit, 501(c)(3) community-based organizations are eligible to apply. Applications are due by September 30. For details, call 1-800-962-6214 or visit www.epa.gov/compliance/recent/ej.html.

Oregon Loans Money for Sewage Treatment, Water Resources

Although Oregon has addressed many of its worst water quality problems, the state's best data show that nonpoint source runoff and habitat degradation are impeding future improvements and threatening past successes. To deal with this problem, Oregon's **Clean Water State Revolving Fund** (CWSRF) developed a new feature called a "Sponsorship Option" for protection or restoration of water resources. With this new option, a public agency (sponsoring community) may now apply for a CWSRF loan to finance a sewage collection or treatment system project combined with a water resource activity at little or no additional cost to the community. The sponsorship option offers communities very low interest rates on loans for wastewater treatment plant improvements if the communities also sponsor projects that protect or restore water resources.

To participate in the Sponsor Option, a community applies to the CWSRF program for a loan to support wastewater treatment system improvements. It also applies for assistance for water resource restoration activities such as acquiring wetlands and riparian lands or restoring habitat or in-stream flows. If the CWSRF program determines that the restoration action is eligible and the water resource project ranks well, the CWSRF provides financial support for the combined project. To reward the community for sponsoring the restoration project, the CWSRF reduces the community's interest rate on the total borrowed for both projects so that the repayment is equal to what the payment would have been with a standard CWSRF loan for only the wastewater treatment project. However, the interest rate on the combined loan is never reduced below one percent (*see example in the box, right*).

The community does not necessarily implement a restoration project itself. A community may enter into a sponsorship agreement with a partner, such as a nonprofit, land trust, or park district, that develops and implements a habitat protection and restoration plan. The agreement requires that the partner develop and implement this plan to restore watershed resources, but it does not require the partner to make any loan repayments. The sponsoring community makes all repayments to the CWSRF.

For details, contact Larry McAllister in Oregon at (503) 229-6412, mcallister.larry@deq.state.or.us.

How Does Oregon Set Interest Rates for a Joint Project?

Example: $1 million for a wastewater treatment project and $202,735 for a restoration project.

Given: If this community did not participate in the sponsorship option, the $1,000,000 wastewater treatment project would receive a 2.91% loan for 20 years. This scenario would result in a total loan repayment amount of $1,402,406 over the course of the repayment term.

However, if the community undertakes both projects, $1,000,000 for the wastewater treatment project and $202,735 for the restoration project, the CWSRF would reduce the interest rate to 1% so that the community would suffer no hardship and still repay only $1,402,406 over the course of the 20 year loan repayment term.

In this scenario, the community completes a wastewater treatment project AND supports a watershed restoration project, all at the same cost to the community!

Wastewater Management Tools for Communities

The National Small Flows Clearinghouse now offers a product series titled, ***Tools for Communities***. This onsite management kit consists of 12 products to help communities address onsite/decentralized wastewater management issues.

The kit includes videos (*see below*), a brochure, a booklet, CDs, and more. Materials are provided free or at low cost. To learn more about each of the products visit the NSFC Web site at www.nesc.wvu.edu/nsfc/NODP_products.htm, or call 1-800-624-8301.

NSFC is a nonprofit organization funded by EPA to provide free and low-cost information about small community wastewater treatment.

EPA loans the two videos for free. They are called *Community Onsite Options: Wastewater Management in the New Millennium* and *Approaches to Onsite Management: Community Perspectives*. The videos could be useful at community and local meetings. To borrow the videos, call EPA at 206/553-1200 or 1-800-424-4372.

ESTUARIES *where rivers meet the sea*

National Estuaries Day, Sep 27

September 27 is **National Estuaries Day** – an annual celebration of the magical places where fresh water from rivers mixes with salt water from the ocean. An estuary can be a bay, lagoon or slough. These important coastal habitats are used as spawning grounds and nurseries for at least two-thirds of the nation's commercial fish and shellfish. The wetlands associated with estuaries buffer uplands from flooding. Estuaries also provide many recreational opportunities, such as swimming, boating and bird watching.

EPA is a partner sponsoring National Estuaries Day. To learn more about estuaries and how to protect them, and for updates on National Estuaries Day and ways that you can participate, visit www.estuaries.gov.

Join World Water Monitoring Day, October 18

America's Clean Water Foundation and the International Water Association invite citizens and organizations from around the globe to share in the experience of water quality monitoring on **World Water Monitoring Day 2003**.

From September 18 to **October 18**, world citizens can monitor the quality of local watersheds and enter results into an international database. This initiative builds on last year's national water monitoring day, when thousands of people took part in local monitoring efforts as part of the Year of Clean Water.

This event will bring together water quality monitoring agencies, volunteer organizations, citizen monitors, and others to screen the health of local watersheds across the United States. Other countries will participate as well.

Monitoring Day will focus on the four basic parameters of temperature, acidity (pH), dissolved oxygen, and clarity/turbidity to introduce citizens to water monitoring and help them understand its importance in protecting our water resources.

For details, information about ways to increase local involvement in your watershed, to register sites, or order testing kits, visit www.worldwatermonitoringday.org. To borrow a free kit from EPA, call 206/553-1200 or 1-800-424-4372.

Region 10 Dive Team:
30 Years of Protecting Northwest Waterways

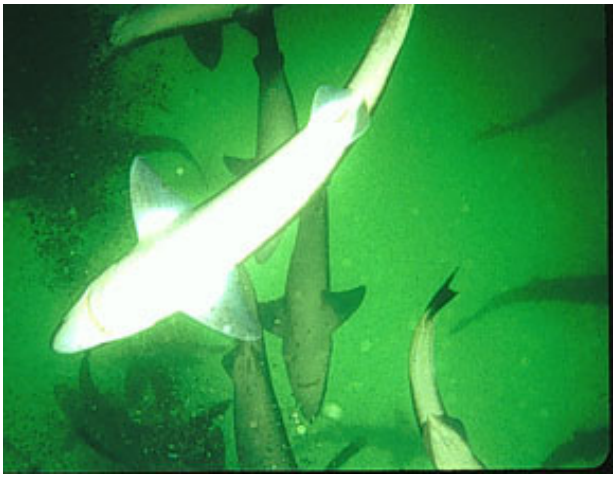
Some of our readers were interested to learn in May's **WaterTalk** *that EPA Region 10 has its own dive team. So, in this issue, we dive a little deeper into the topic.*

EPA has a number of dive teams throughout the country that perform scientific diving services for the Agency. The **Region 10 Dive Team** has been around since EPA's inception more than 30 years ago. The team covers a wide area, from cold, marine Alaskan waters, to warmer inland lakes and rivers in Washington, Idaho and Oregon.

In a given field season, the dive team may be asked to perform two or three projects a month. Projects include inspections of cleanup remedies, such as sediment caps, to ensure that they are not eroding away. Divers sometimes evaluate changes in local kelp beds and algal communities. Work also includes surveys used for design purposes. For example, at the Wyckoff former wood-treatment facility on Bainbridge Island, Washington, divers delineated the boundaries of creosote seeping into Eagle Harbor and sampled sediment to help characterize pollution.

The team also has conducted criminal investigation work. In recent years, Region 10 divers documented illegal harvesting of an ancient forest in Lake Washington. The forest slid into the lake during a massive earthquake some 800 years ago. Underwater photos, video and mapping helped lead to a criminal conviction.

Everyone on the team loves to dive, despite the conditions under which they are often called upon to do so. For example, tasks often must be accomplished in zero visibility, communicating with the diver's "buddy" only through line signals. Once divers complete their underwater task and climb up out of the water with their 100 pounds of gear, they commonly undergo extensive decontamination. While performing compliance inspections at seafood packing discharges, divers run the risk of being mistaken as a meal by passing sharks hoping for a choice piece of salmon to come down the pipe.



Divers work near sharks looking for seafood discharge meal.

Dive team members must perform a "day job" in their respective offices, diving for the Agency as a collateral duty often on their own time. Divers on the team come from varied backgrounds in biology, oceanography, engineering and marine ecology. Each one must pass fairly intensive physical and classroom training to become an EPA diver.

Region 10 divers, based in Seattle, work in Superfund, the Office of Water, Ecosystems and Communities, Pesticides, and the Office of Environmental Assessment. More information on the EPA Region 10 Dive Team may be found on their web site: yosemite.epa.gov/R10/OEA.NSF/webpage/Dive+Team.

EPA Announces Watershed Initiative Awards

Two regional efforts recently received major funding support from EPA's new **Watershed Initiative**. To support community-driven initiatives that protect habitat, improve water quality, and enhance outdoor recreation, EPA awarded nearly $15 million in grants to 20 watershed organizations across the country. The two winners in Region 10 are **Clark Fork–Pend Oreille**, in Montana, Idaho and Washington, and the **Lower Columbia River** in Oregon and Washington.

Nationally, the funds will go toward restoration and protection projects, such as stream stabilization and habitat enhancement, implementing agricultural best management practices, and working with local governments and homeowners to promote sustainable practices and strategies. The grants range from $600,000 to $1 million.

Regional and national experts selected the winners from more than 176 nominations. The winners were chosen because they best demonstrated the ability to achieve on-the-ground environmental results in a short time frame. Each of these watershed organizations exhibited strong partnerships with a wide variety of support, showed innovation, and demonstrated compatibility with existing governmental programs. They will serve as national models for other communities to follow. For more information log on to www.epa.gov/owow/watershed/initiative.

An announcement for EPA's 2004 Watershed Initiative will be published in the *Federal Register* and posted later this summer at www.epa.gov/owow/watershed/initiative/

Leaders Identify Northwest Air Priorities

Eight priorities for the future of air quality were recently identified by leaders from around the Northwest. At the **Northwest Air Summit**, nearly 200 delegates gathered to take stock of current air issues, and to explore actions to improve air quality and protect public health in the Pacific Northwest and Alaska. Participants represented business, non-profits, local, state, tribal and federal governments.

The priorities generated at the Summit included reducing emissions and greenhouse gases, increasing public education, reducing indoor air pollution, and others. The Summit also yielded a list of 18 "promising projects" to begin acting on those priorities. To learn more, visit the web site at www.epa.gov/region10/nwcapp.

Don't Miss Brownfields Revitalization Conference

Mark your calendars for ***Brownfields 2003: Growing a Greener America***. Taking place October 27-29 in Portland, Oregon, this national conference is considered the premier event for anyone interested in redevelopment, revitalization, reuse, assessment and cleanup of contaminated properties. This comprehensive conference also covers smart growth, sustainability, green building, and more.

Go to www.brownfields2003.org to register now for this free event, learn about education credits, travel information, and so on. By registering you will get up-to-date agenda information to help you decide which portions of the conference to attend. For details, contact Marianne Deppman, 206/553-1237 or 1-800-424-4372 x1237, e-mail deppman.marianne@epa.gov.

Fact: *This year nearly $130 million in grants will be available to states, tribes and communities for Brownfields assessment, cleanup, and redevelopment.*

Beneficial Landscaping

Downed Wood – A Many Splendored Thing

One of the most interesting and beneficial features you can incorporate into your natural landscape is downed wood.

Downed wood comes in all sizes and shapes – twigs, branches, logs, and even root wads. Large downed logs are often termed "nurse logs" because, as they decay, they serve as the host for growth of new vegetation.

Nurse logs can add visual interest with their contrasting form, texture, color, and the diversity of life they support – mosses, lichens, fungi, seedling plants, insects, and more. More than "just a pretty face," a nurse log offers a matchless multitude of helpful, protective and life sustaining functions. Here are a few:

- Logs absorb, retain, and slowly release water – if you have a puddled wet area in winter, the log can absorb it, and provide a source of moisture in the dry summer months.
- Logs on hillslopes, especially parallel to the slope, help to reduce erosion, trap sediment, control runoff, and create a nursery for new plants that will help to stabilize the soil.
- Logs are a storehouse of nutrients and energy. Like a long-term "slow release" fertilizer, they return nutrients to the soil and release energy to organisms.
- If you have a water feature or stream on your property, logs can be used as bridges for mammals, or as partially submerged platforms for resting, feeding, or preening wildlife.

Russell Link explains in his book, *Landscaping for Wildlife*, that as a log advances through different stages of decay, it provides amenities for different species of wildlife. Early decay offers a perch, lookout, or sunbasking site for birds, squirrels, chipmunks and lizards.

Later, when the log settles into the ground and the bark loosens, beetles and salamanders move in and the moisture attracts frogs, voles and mice. Insect residents provide food for birds and small mammals.

When the log softens, animals burrow into it for shelter and food. The resulting burrows and tunnels offer safe haven for amphibians, reptiles and small mammals; a hollow log can house a racoon or fox.

In its final stages of decay, the log becomes soft and crumbly. Insects and insect eating animals increase, and the soft substrate can offer moisture for fungi, a place for squirrels to bury nuts and seeds, a dry dust bath for forest birds, or a soft bed for larger animals.

Finally, the entire log re-enters and enriches the soil.

The easiest way to incorporate downed wood into your landscape is to leave it where it naturally falls. If you want to add a log or move it, it's best to place it in partial shade, and excavate a depression in the ground for it that is about a fourth of the log's diameter. Piles of twigs, branches, or a root wad can also be placed for desired effects. Plant your wood – and watch what happens!

For more information about beneficial landscaping, contact Elaine Somers at 206/553-2966, somers.elaine@epa.gov, or visit the website at www.epa.gov/r10earth/bl.htm.

Reference: Link, Russell. *Landscaping for Wildlife in the Pacific Northwest*. University of Washington Press, 1999.

WaterTalk

Alaska Idaho Oregon Washington

WaterTalk is published each February, May, August and November by the U.S. Environmental Protection Agency, Region 10. *WaterTalk* seeks to be a useful tool for those who protect water resources and ecosystems in communities of the Greater Pacific Northwest, by providing practical resources and relevant agency news.

You are invited to contribute items for publication. Submittal deadline is the 15th day of the month before publication. *WaterTalk* articles can be used in other publications. Please give credit to *WaterTalk*.

For mailing changes, or to contact the editor, call Andrea Lindsay at 206/553-1896 or 1-800-424-4EPA x1896, or email lindsay.andrea@epa.gov.

Accessibility information: To request services to accommodate persons with disabilities, contact EPA at 206/553-1200 or 1-800-424-4EPA.

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In This Issue