

LAKE WISE

PORTLAND STATE
UNIVERSITY

February
1997

NEWSLETTER OF THE PSU LAKES AND RESERVOIRS PROGRAM
AND THE OREGON LAKES ASSOCIATION



Lake Watch News

by Mark Sytsma

Here in Portland at Lake Watch World Headquarters the sun is out and the sky is blue. What a change from the past few months. It is a reminder that the lakes are waking up from a cold winter – the days are getting longer, the water is warming, the weeds are growing....

It is also a reminder that an important season of lake watching is fast approaching. Although we will be facing some budget constraints this year, that shouldn't stop the Lake Watch crew from getting the boat in the water and dipping the ol' Secchi a few times.

The Lake Watch Program depends upon volunteers to collect information on the condition of Oregon's lakes. Many volunteers live on the lake they monitor, others adopt a favorite lake that they often visit. The program is a basic one, focusing on measurement of transparency as an indicator of lake condition.

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**OLA's home on the
WWW**

<http://www.esr.pdx.edu/ola/>

Weeding Out Unwanted Aquatic Plants

Established aquatic weeds in Washington & California threaten Oregon's waters

What's the best way to control problems with aquatic weeds in Oregon? Simply avoid having those weeds in the first place. That's the approach the Oregon Department of Agriculture's Noxious Weed Control Program is advocating as the state's neighbors to the north and south both struggle with at least two species of hard-to-get-rid-of aquatic weeds.

Spartina and hydrilla are two aquatic plants currently not a problem in Oregon. But if they ever get a toehold like they have in Washington and California, look out. "Because of their current distribution, we know it is quite likely they could be found in Oregon someday," says Dennis Isaacson, manager of ODA's Noxious Weed Control Program. "We would like to develop a program that would prevent them from becoming an established problem here."

Hydrilla poses a threat to Oregon's lakes, reservoirs and streams. The fast-growing aquatic weed has been found in 17 California counties and in Washington. Once established, hydrilla destroys fish habitat, degrades water quality,

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Non-indigenous Species People Coming to Oregon!

Portland State University will be the site of one, and possibly two, important meetings relating to aquatic non-indigenous species this spring. On March 10-12, the Western Zebra Mussel Task Force will hold an information and monitoring workshop; and on May 27-29, a proposal has been made for people from across the West (from Texas to Alaska to Guam and all points in between) to come to Portland State to discuss how to begin to address aquatic non-indigenous species management in the West under the federal Non-indigenous Species Act.

The Western Zebra Mussel Task Force was formed to prevent or slow the

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Lake Watch Volunteers

Citizen Lake Watch depends on dedicated volunteers, who measure basic water quality characteristics in Oregon lakes and reservoirs. Lake Watch provides training to measure water temperature, Secchi transparency, and dissolved oxygen. Volunteers in the Corps of Engineers, Fern Ridge monitoring program perform additional measurements. Volunteers also assist in the early detection of *Hydrilla*. Prospective volunteers may contact Mark Sytsma (503)725-3833.

Big Creek Reservoirs: Susan Gage

Blue Lake : Koren Marthaller

Clear Lake: Elmer Waite

Cullaby Lake: Janette Goolsby

Devils Lake: Barbara Hagerman, Al Rice, Bill and Lorretta Vaughan

Diamond Lake: Ross Roberts, Chris Strahl

Fern Ridge Lake: Clarebeth Loprinzi Kassel, Joseph Kassel, Natasha Okonoji, Richard Locke, Cindy Thieman, James Bruvold, Marnee Comer, Lee Eggers, Randy Wilson

Fishhawk Lake: Jack Jenkins

Garrison Lake: Don Martin

H. Hagg Reservoir: Wally Otto

Hosmer Lake: Chuck Munson, Max Peel

Jubilee Lake: Paul Doucett

Lake of the Woods: Catherine Hayes, Katherine Kelly

Loon Lake: Richard Kaufmann, Steve Kaufmann

Mercer Lake: Ron Boehi

Morgan Lake: Yuji Matsumoto, Melinda McKibben, Dara Decker

Mt. Hood Lakes: Roy Iwai, Matthew Wood (PSU students)

Munsel Lake: Al Burhans, Roy Fisher

N. Tenmile Lake: Frank Gray, Dan Jordan, John Kelsey

Odell Lake: John Milandin and family

Penland Lake: Lee Bogle

Siltcoos Lake: Elizabeth and Dean Kelly, Dennis Simmons, Dave and Linda Lauck, Paul Cornett, Ron Salat

Sunset (Neacoxie) Lake: Lee Smith

Tenmile Lake: Dean Anderson, Diane and John Barrett

Thornton Lake: Philip McFaden, Henry Pollak, Jack White

Timothy Lake: Jon Honea, Steve Mrazik (PSU students)

Woahink Lake: Bob Anderson

Lake Watch Program Notes continued from page 1

When lakes are polluted with sediment and nutrients that wash in from the watershed, algae growth is stimulated and this causes water transparency to decrease. Water transparency is measured with a simple black and white disk (a Secchi disk) that is lowered into the water until it disappears. The depth of disappearance is called the "Secchi depth".

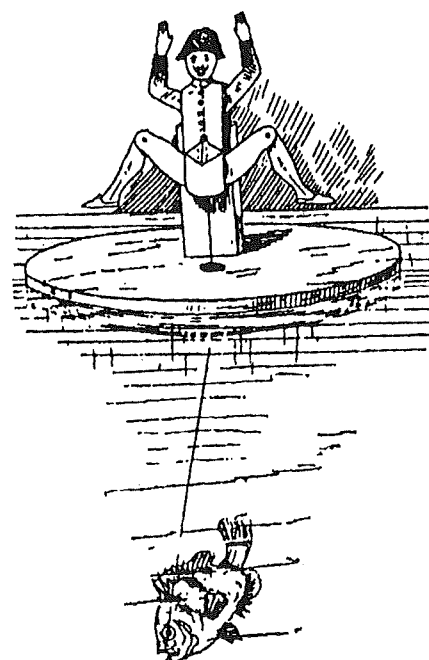
Although it is a simple instrument and measurement, Secchi depths have been measured thousands and thousands of times in many different lakes over the centuries since it was invented.

The depth of disappearance of this simple disk has been correlated with a number of specific characteris-

tics of lakes, like chlorophyll and nutrient concentrations. So measurement of the Secchi depth in a lake tells a limnologist (someone who studies lakes) a lot about the condition and biology of the lake.

Lake Watch volunteers also keep an eye on the lake's watershed and look for instances where activities in the watershed, like clearing and grading, may lead to water quality problems in their lake. They also watch for nasty, invasive weeds, like hydrilla, that could cause even more serious damage to their adopted lake.

If you would like to know more about what you can do to protect a lake that you enjoy, contact the Lake Watch Program Director at Portland State, Dr. Mark Sytsma (503-725-3833). ♦



Dancing Fisherman
From: LakeLine 16 (3)

Non-indigenous Species continued from page 1.

spread of zebra mussels into western North America through the cooperative efforts of State, Provincial, Federal, local, and private interests. The WZMTF met at Portland State last March in conjunction with a Symposium on Non-indigenous Species in Western Aquatic Ecosystems and a meeting of the Western Aquatic Plant Management Society.

The WZMTF will hold an information and monitoring workshop at PSU on March 10-12. The workshop will provide an introduction to the zebra mussel and discuss topics of concern to western states where zebra mussels have not yet been detected. For further information see the WZMTF homepage (<http://www.usbr.gov/zebra/wzmtf.html>).

The Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990 was passed by Congress to prevent and control infestations of inland waters of the United State by the zebra mussel and other non-indigenous aquatic nuisance species. As amended in 1996, the Act requires called for the formation of an Aquatic Nuisance Species (ANS) Task Force to develop and implement a program to prevent introduction and dispersal of aquatic nuisance species.

The Act requires that a Western Regional Panel be formed to identify priorities, make recommendations, and coordinate activities in the West. The ANS Task Force indicated that an expanded WZMTF should constitute the Western Regional Panel. The WZMTF has formed a working group to develop a proposal to expand to include other freshwater and marine organisms. A working group has been established to develop a proposal on how the Western Panel will be constituted. The proposal includes the meeting at Portland State. ♦

Weeding Out Plants continued from page 1.

clogs intake and fish screens, and fouls up recreation. Fishermen, water skiers, and boaters in general would find the green, leafy plant a big headache. Wildlife could find it even more undesirable since it takes over and displaces native vegetation.

Spartina is a grassy weed that has invaded estuarine environments along the West Coast, with Oregon being a notable exception. Recreation, wildlife, and oyster production in 13 Oregon estuaries would be severely threatened by an invasion of spartina, or cordgrass as it is commonly called. "The oyster industry would be one of the first to be impacted by establishment of spartina because the weed helps the development of a marsh instead of a mud flat," says Isaacson. Oregon's fast growing oyster production capabilities thrive on the mud flats so common to the state's coastal estuaries. Change the mud flat into a marsh and you effectively destroy oyster production.

"We have only to go to Willapa Bay in Washington to observe the conflict between spartina and oyster production," adds Isaacson.

The only way to easily eradicate noxious aquatic weeds such as hydrilla and spartina is to detect it early. It may be too late for Washington and California, but Isaacson is convinced it's not too late for Oregon. Keeping on the lookout will be the key to saving Oregon from the fate of its neighbors.

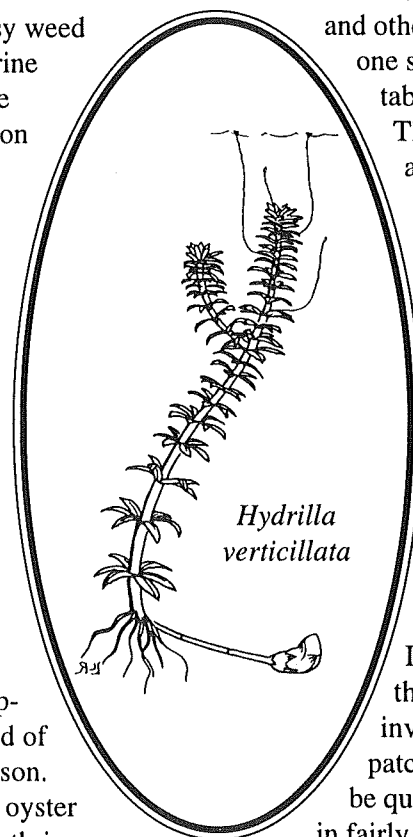
order to find hydrilla," he says. "It looks a lot like a couple of other weed species and it takes a good bit of training to develop the ability to distinguish it from other plant types."

Utilizing volunteers— many of them homeowners along lakes and other water bodies— is one strategy for keeping tabs on early infestations. Those same volunteers already conduct water quality measurements and readings and could be trained to look for submerged aquatic weeds.

Detecting spartina might not be as problematic. "We would be looking for a green contrast on a muddy background," says Isaacson, referring to the fact that spartina invades mud flats. "The patches of spartina tend to be quite circular. They grow in fairly distinct patterns. I think we could probably accomplish our detection almost exclusively with aerial observation."

A general public awareness campaign is also part of the plan. Brochures on hydrilla— warning against such things as dumping aquarium tanks into the state's water bodies— have already been developed, one on spartina is in the works.

Treating infestations of noxious aquatic weeds largely depends on how early they are detected. "If we caught a spartina infestation early on, we could control it simply by smothering it," says Isaacson. "There are some



"We have to be very diligent in

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Weeding Out Plants continued from page 3.

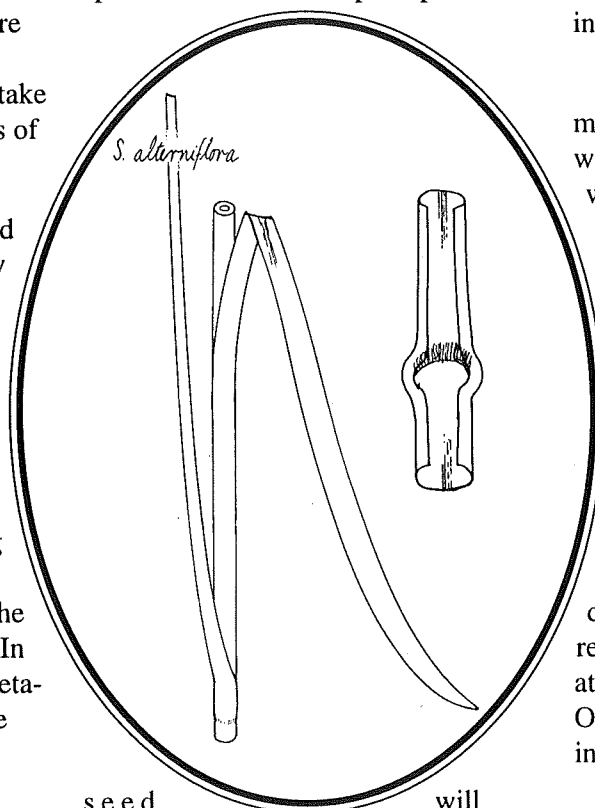
landscaping materials that can be used to cover an infestation. By leaving it covered for a year or so, the plant will die. So we don't think herbicides are necessarily the treatment that most often would be employed. We can take fairly benign and inexpensive ways of treating them."

Washington State has embarked on an intensive program of literally mowing spartina, even though it is often underwater. Repeated mowing eventually kills the weed. But with the heavy infestation, that means a lot of manpower and expense.

That infestation is also causing new worries for Oregon. It is so well established to the north, that the spartina has actually gone to seed. In the past, it only reproduced by vegetative means—that is particles of the plant would break off and lodge someplace else. Now the seeds of despair can spread faster and farther.

"Our concern is that wildlife

populations— waterfowl in particular— will be visiting these sites of spartina and perhaps the



seed lodge in their feathers or in the mud on their feet," says Isaacson. "As

they travel up and down the Pacific flyway, the likelihood that we could see infestations in Oregon is greatly increased."

ODA is currently considering a modest aquatic weed program that would establish a monitoring effort as well as a coordinated approach to management before any problems arise. The lack of coordination in Washington resulted in a critical loss of time before a response to the bad weed could be made.

ODA's experience has been with terrestrial weeds. Now there is a very good reason to get involved with aquatic weeds. California annually spends millions of dollars trying to control hydrilla. A relatively small investment of time, attention, and dollars might prevent Oregon from having to pay a lot more in the future.

For more information, contact Dennis Isaacson at (503) 986-4621. ♦

Ask the Lake Doc....

Dear Lake Doc:

I have been hearing a lot lately about the threat of zebra mussels to Oregon's lakes and rivers. Now, I can understand how a hiker in the Cascades could be easily trampled by a herd of wild zebras if they were surprised while they were grazing in a meadow, but I fail to see how zebra mussels threaten water resources. As an avid hunter, I like to eat the muscles of many wild animals, and although I have never tried to eat a zebra, I imagine that it would taste at least as good as horse, which is considered a delicacy in France.

I have also heard some very enlightened and knowledgeable people in my community discussing how our local lake has been invaded by parrot feathers. I have never tried to eat one, and cannot testify as to their taste; however, I personally think parrots are beautiful, and that having more parrot feathers around would actually spruce up the place a bit, but I haven't seen any anywhere. All I have seen are some attractive, bright green plants growing in the lake.

Please explain why people are so upset about zebra mussels and parrot feathers.

— Dumbfounded in Drain

See Page 5 for the Lake Doc's answer

The Lake Doc Says...

Dear Dumbfounded:

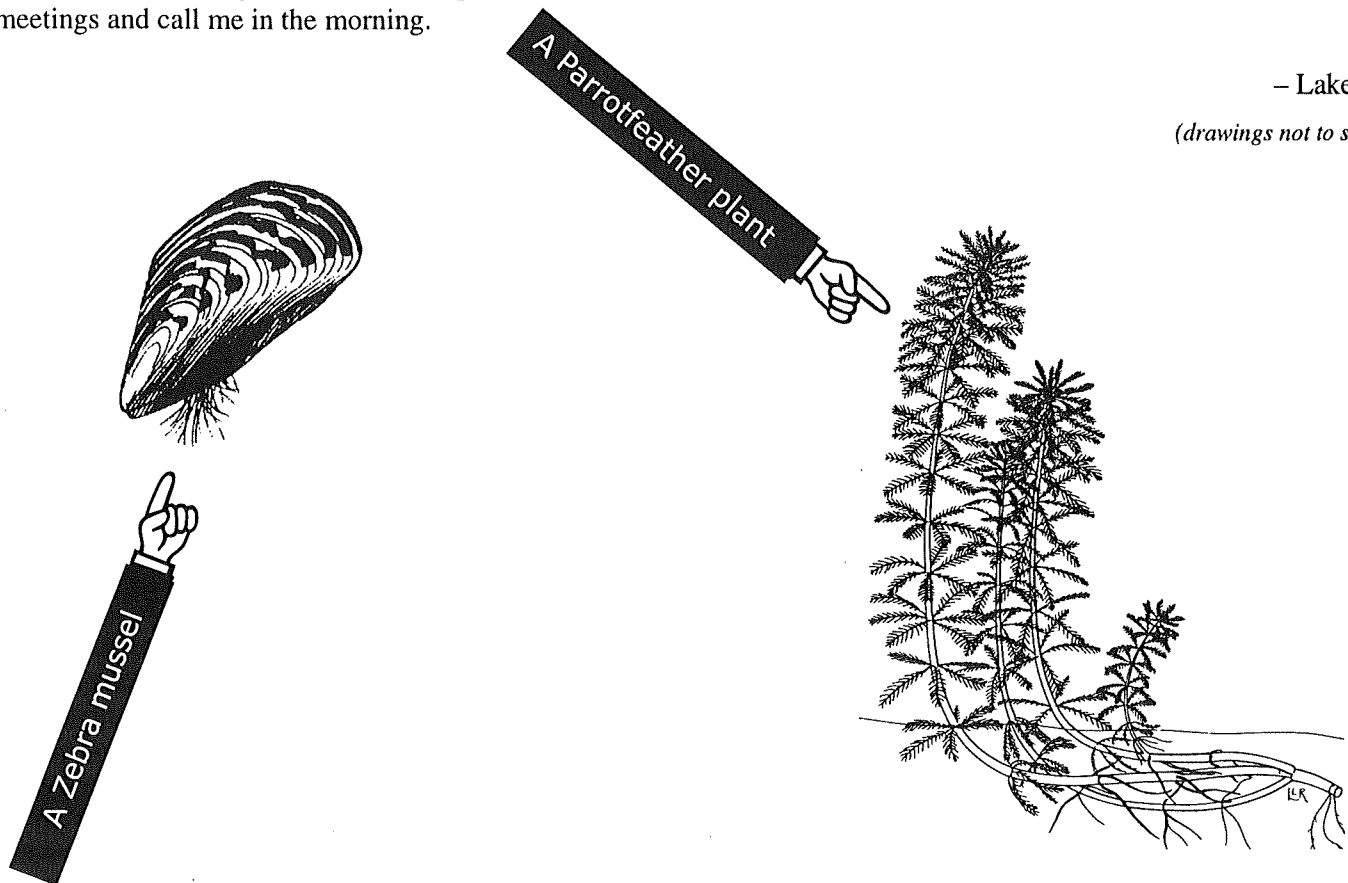
I have diagnosed this malady many times, and believe me you are not alone. You are suffering from a common affliction in Oregon – Nonindigenousspeciesnorecognizus, or failure to recognize the threat of non-indigenous species. The zebra "muscles" people are concerned about are actually a bivalve mollusk (a mussel) commonly known as *Dreissenia polymorpha*. These guys will do some serious damage to pipes, fish screens, and aquatic ecosystems once they find their way here from the Midwest. They are most likely to get here on a boat transported across the country by some flatland tourist.

The "parrot feathers" that people are talking about is an aquatic weed introduced from South America called *Myriophyllum aquaticum*, common name parrotfeather. When it invades a stream, irrigation or drainage ditch or lake, water quality and fish habitat are damaged. Parrotfeather is common along the coast and can also be found in many aquatic systems in the Willamette Valley. Those bright green stems emerging from the water are the parrotfeather everyone is talking about.

Wh the correct treatment, the prognosis for Nonindigenousspeciesnorecognizus is good. The treatment protocol has two parts. First, you must learn more about the world around you and develop an interest in maintaining the integrity of Oregon's ecosystems and native plant and animal communities. Second, you must attend three OLA Board meetings and call me in the morning.

– Lake Doc

(drawings not to scale)



Seriously, if you have questions about your lake, write to: Lake Doc, c/o Environmental Science and Resources, Portland State University, Portland OR 97207-0751.

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cerned with lake and watershed protection, restoration and management.

- To encourage, assist, and support the development of local, state, and national programs promoting lake and watershed protection, restoration and management.
- To encourage the development of legislation and the enforcement of laws designed to protect lakes and watersheds.
- To promote and foster the formation of local lake associations and encourage all interested organizations and individuals to become actively involved in the Association.

For additional information on OLA and to find out where you can be a help, contact Andy Schaedel (503-229-6121). ♦

Aquatic Plant Meeting in Seattle

The Western Aquatic Plant Management Society (WAPMS) will hold its 16th annual meeting in Seattle at the Crowne Plaze Hotel Hotel on March 27 and 28, 1997. The meeting will include presentations on the latest technologies in aquatic weed and algae control, aquatic plant biology, and aquatic ecology.

For meeting information and/or to make a presentation on any aspect of aquatic plants, contact Kathy Hamel, Program Chair (360-407-6562; kham461@ecy.wa.gov) or Mark Sytsma, President (503-725-3833; sytsmam@pdx.edu). ♦

Oregon Revised Statutes Relating to Weed Control Districts

Most of the aquatic weed problems in Oregon's lakes and reservoirs are caused by "B-listed" noxious weeds. Formation of a Weed Control District may be a viable method for developing and funding an aquatic weed control program.

Oregon Revised Statutes relating to Weed Control Districts:

570.505 Necessity of eradication of weeds; cooperation in control and eradication. Noxious weeds have become so thoroughly established and are spreading so rapidly on state, county and federally owned lands, as well as on property in individual ownership and in transition to county ownership through tax delinquency, that they hereby are declared a menace to the public welfare. While it is recognized that complete eradication may not be practicable, it hereby is established that steps leading to eradication and control are necessary and that responsibility rests not only on the individual landowner and operator but also on the county, state and Federal Government, and that the county, state and Federal Government should cooperate with individual owners in the control and eradication of noxious weed pests. <Amended by 1985 c.621 s1>

570.510 State and counties to control noxious weeds. The state and the respective counties shall control any weeds designated as noxious by the state or the respective counties in any such county on land under their respective ownerships. <Amended by 1985 c.621 s2>

570.515 County governing body may create weed control district; petition for special weed control district. (1) The county governing body of each county may declare the county, or any portion of the lands in a county, a weed control district for the purpose of destroying such weeds and of preventing the seeding and spread of such other weeds and plants as the governing body may for the purposes of ORS 570.515 to 570.600 declare noxious. (2) If the county is not made a weed control district or if the county weed control district does not include all such weeds or plants desired as included as noxious, interested parties may present a petition for a special weed control district. The petition shall describe the area to be included in the special weed control district and name the noxious weeds to be destroyed or prevented from blooming and producing seed within the district, and must be signed by more than half of the landowners in the area described in the petition who also own more than half of the acreage in the area. Upon presentation of such a petition, the county governing body shall declare such area a special weed control district and such weeds noxious within the district, in accordance with the petition. <Amended by 1985 c.621 s3>

Formation and funding of weed control districts are addressed in Chapter 198 of the Oregon Revised Statutes. ♦

OREGON LAKES ASSOCIATION NEWS

Conference Attendance Opportunity Announced

by Andy Schaedel, President

10th Annual National Conference on Enhancing the States' Lake Management

April 23-25, 1997

Chicago, Illinois

Every year, EPA and the North American Lake Management Society sponsors a conference in Chicago. The primary intent of this year's conference, as in the past, is to build coalitions and strengthen bonds between state agency lake programs and the statewide lake associations that these programs serve. As always, a broad range of presentations and interactive discussions are planned, and several sessions have been scheduled specifically with statewide lake associations issues in mind.

This conference's subtheme is "Integrating drinking water issues and lake management." Several conference sessions will explore the relationships between lake management, drinking water quality and watershed protection issues. Additional information on the conference will be available within a few weeks.

Funds have been set aside to support OLA's participation. The conference registration fee will be waived for two representatives from OLA (this includes breakfasts and luncheons on April 24 and 25 as well as dinner on April 24 and up to \$450 for travel/accommodation expenses for the conference will be reimbursed. If any members are interested in attending, they should contact Andy Schaedel (503-229-6121) by no later than Friday March 28 if they are interested in being considered for travel reimbursement.

This conference has been excellent in the past and interested OLA members, particularly those that represent lake associations, are encouraged to attend. ♦

NALMS Strategic Plan

The parent organization of OLA, the North American Lake Management Society (NALMS) is currently preparing a strategic plan.

The Purpose of NALMS, according to the draft plan, is: **To promote the protection and improvement of lake and reservoir resources worldwide through forging effective partnerships with citizens, scientists, professionals, and organizations.**

The plan identifies three goals as a focus of NALM's effort:

- Improve service to members and chapters.
- Improve visibility and value/effectiveness of NALMS.
- Improve lake and reservoir management science and technology.

For additional information on NALMS, visit their web page (<http://www.nalms.org>) or contact the NALMS Region X Director, Jean Jacoby (206) 296-5526. ♦

OLA Strategic Plan

The OLA Board, led by President Andy Schaedel recently approved a revision of the OLA strategic plan. The OLA plan identifies OLA's goal and objectives, and specific activities that must be carried out to accomplish those objectives. OLA's goal is: **To promote the understanding, protection, and thoughtful management of lake and watershed ecosystems in Oregon.**

Objectives of OLA include:

- Monitor and assess the condition and use of Oregon lakes.
- Provide a means for education and dissemination of information related to lake and watershed ecosystem management.
- Foster communication and working relations among lake associations, local, state and national governmental agencies, organizations, universities, consultants, and individuals con-

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The Oregon Lakes Association is a nonprofit organization dedicated to lake protection and management in Oregon. For additional information on OLA, to get involved, or to obtain a membership application form write to:

OLA, PO Box 345, Portland, OR 97207

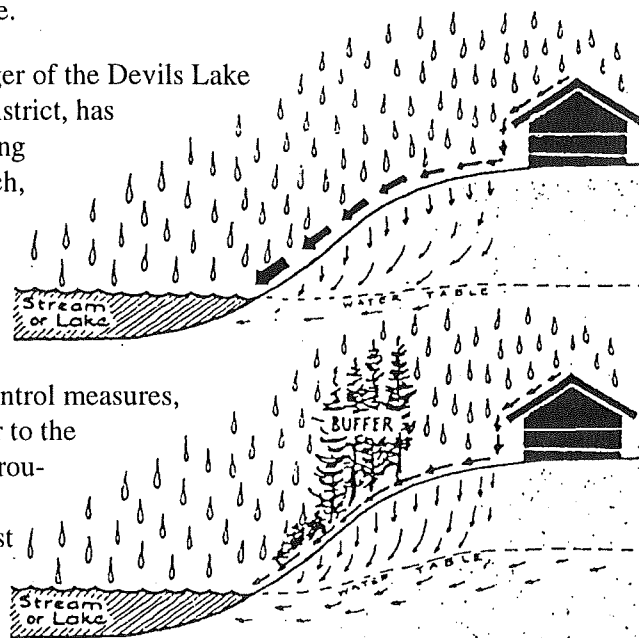
Storm Damages Devils Lake

A November storm was disastrous for Devils Lake. The watershed of the lake received 3.4 inches of precipitation in nine hours, and 5.00 inches in a 24-hour period. The resulting runoff from areas with exposed soil carried a huge load of sediment and nutrients into the lake, which provide substrate and nutrients for aquatic weeds and algae.

Turbidity (a measure of light scatter in water caused by suspended materials like algae and sediment) of 15 inflows to the lake was measured on November 19. Turbidity ranged from 1 to 730 ntu (nephelometric turbidity units - a standard way of measuring turbidity). A turbidity reading over 40 ntu is generally

considered a high value.

Bob Storer, Manager of the Devils Lake Water Improvement District, has pointed out that covering exposed soil with mulch, seed/matting, straw, plastic, or other materials can prevent the kind of erosion that damaged Devils Lake. Such erosion control measures, properly installed prior to the winter wet period and routinely monitored and maintained are the most effective ways to prevent erosion and damage to lakes and streams. ♦



This figure shows how buffer strips along lakes and streams protect water quality. A vegetated buffer strip retains and filters water, and transmits it to the lake as groundwater containing fewer non-point pollutants.

From *Currents*, the newsletter of the
Preservation Association of Devils Lake

Check out OLA's new web page
<http://www.esr.pdx.edu/ola/>

Many thanks to Nancy Bowers

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