WAPMS NEWS- Summer/Fall 2002 Issue
Newsletter of the
Western Aquatic Plant Management Society

WAPMS NEWS

September 2002

Summertime in the West!

Is my calendar correct? Yes, the weather is heating up, the weeds are growing and the workdays are longer. Summertime in the industry of Aquatic Plant Management is always interesting and brings about new challenges each season. I hope all of you had a good Spring planning season and now are enjoying successful management and/or research projects as we head into the heart of summer. It seems like only a week or so ago we were on the shores of Lake Couer d' Alene, interacting with our fellow members: sharing the latest and greatest occurring in Western Aquatic Plant Management.

The 21st Annual WAPMS Meeting in Couer d' Alene , ID was a very informative program. First off, we could not have had a better setting than the Couer d' Alene Resort and the beautiful surroundings of the Idaho panhandle. Further, we had a total of 86 participants and 13 Corporate Sponsors attend the meeting this year. Although this year's turnout was not the highest in the meetings' history, it was more than expected and we had excellent regional support from our Pacific Northwest members!

I want to thank the APMS President, David Tarver, for leaving the tropics of Florida and joining our group with great discussion addressing the recent activities of APMS. As a reminder, WAPMS contributed $1,000 toward the APMS Educational Outreach Program and the educational book, Understanding Invasive Aquatic Weeds, is currently being distributed around the west. If you would like to receive a copy, please send your request to APMS , scott.aquarium@usm.edu. Additionally, WAPMS will contribute 250 t-shirts as the regional sponsor to this year's APMS meeting in Keystone, CO. I hope to see many of you in Colorado July 21-24th!

Looking back, the presenters who addressed the issues associated with NPDES permitting in the Ninth Circuit Court Jurisdiction, helped open our eyes to the ramifications of the court decision, and the additional barriers these regulations will impose on aquatic plant management. I am proud to say that WAPMS contributed $1,000 to the Aquatic Pesticide Coalition (APC) to help in the ongoing negotiations with the US EPA Clean Water Act legal counsel, aquatic pest managers and aquatic pesticide interest groups to work toward a reasonable solution to this issue. The WAPMS board has discussed holding a similar

workshop on the Monday prior to the 2003 WAPMS meeting, to provide updates on NPDES and the implications of one full year of compliance under these regulations. We welcome your thoughts and suggestions on NPDES topics and ideas for next year's workshop.

The 22nd Annual WAPMS meeting will be held March 4th & 5th of 2003 in Sacramento, CA. We are working on hotel and conference details at this time and will post on our web site once determined. We expect a record breaking turnout next year, so lets make sure it happens! I challenge our current members to make it their goal to bring in some new faces next year and actively spread the word to the various colleges and universities in the West. We need more students to become actively involved in WAPMS!

Please send any program related ideas to this year's Program Chair, Terry McNabb, rmiwa@aol.com, or you may contact me at shaun@sepro.com. you can also access our website at www.wapms for updates regarding WAPMS and the upcoming 2003 meeting.

I hope everyone takes some time to enjoy the summer and has a successful "plant management" season.
Shaun Hyde
WAPMS President

WAPMS awards two Student Scholarships

At the Annual WAPMS Board Meeting, board members decided to award two scholarships for $1,000. In past years, WAPMS has awarded one $1,000 scholarship. With this years high number of applicants and superb quality, WAPMS decided that two scholarships were appropriate. WAPMS will continue to award 2 annual scholarships subject to a minimum of five applicants and availability of funds. This years recipients are as follows:

Robin W. Switzer, who has entered a masters program at Western Washington University and had developed a a keen interest in biogeography and invasion ecology. Last year he worked a seasonal job with Dr. Fritzi Grevstad in Willapa Bay, Washington working on biocontrol of Spartina cordgrass and spent six months working in the salt marsh.

Mr. Switzer is devoted to the control of invasive exotics and preservation of the salt marsh environment. He is passionate about preservation of native biodiversity through management of exotics.

Mr. Switzer's proposed thesis research project is very practical and important. The "mowing experiment" seeks to learn if timely mowing of Spartina will enhance over winter survival of the bio control agent Prokelisia mariginata. If this proves true, the state of Washington has mowing machines capable of implementing this strategy on a large scale. Bio control is an important element of that strategy.

Mr. Switzer stated he would use this award to support his graduate research project on biological control of the invasive salt marsh cordgrass Spartina alterniflora using the planthopper control species Prokelisia marginata in Willapa Bay, Washington. Funding from the WAPMS scholarship would be used to purchase chest waders and other equipment for use the field, as well to help with travel and lodging cost to and from his research sites located on the Long Beach Peninsula.

Shon S. Schooler is the second recipient of the WAPMS scholarship. Mr. Schooler is attending Oregon State University and his focus is ecologically oriented, exploring the relationships between organisms and their environment. He is currently interested in how exotic weed species impact the plant and animal communities of the ecosystems they invade and how different methods of management can moderate the effect. He is particularly interested in wetland ecosystems because of their ecological importance and fascinating complexity.

Mr. Schooler will study the impact of two harmful non-indigenous plants species on the species richness and diversity of native plants and moths in 24 wetlands in the Pacific Northwest. Preliminary results suggest that: 1) as density of the invasive plant species increases, the number of native plant species decreases, 2) as the number of native plant species decreases, the number of potential host plants species declines, thus locally decreasing the number of moth species. He has collected plant and moth community data during 20000 and 2001 at the 24 wetland sites.

Invasive species are causing a loss of biodiversity in the United States. Purple loosestrife and reed canarygrass are two introduced invasive plants that are currently degrading and simplifying many wetlands across the United States. Both species are known to form dense, monospecific strands that may harm local wetland plant and animal communities.

Mr. Schooler expects that an increase in the density of the introduced plants species will bring a decrease in the species richness and diversity of the local plants community. Because moth are often associated with specific hosts, he hypothesizes that as the specific richness and diversity of plant hosts declines, so will the species richness and diversity of the moth community. Funds from the WAPMS scholarship will be devoted to a half-time student salary and the additional money reserved for travel costs associated with sample collection.

As you can see, both recipients were well deserving and makes us really appreciated the hard work and commitment put forth from the WAPMS scholarship committee members. WAPMS would like to thank Mark Sytsma and the Scholarship Committee for a job well done. Thank You!

The effects of Endothall on Kress Lake, Washington

The Kress Lake project is a cooperative effort between the Washington Department of Ecology, the Washington Department of Fish and Wildlife and ElfAtochem (now Ceraxagri Corp). In 2000, Cerexagri representatives approached Department of Ecology with a proposal to treat a test lake in Washington with the contact aquatic herbicide Aquathol K (active ingredient endothall). The project is to demonstrate the ability of Aquathol K to control an exotic species Myriophyllum spicatum and to improve the fishery and lake access for anglers. Department of Ecology is monitoring the effects of the herbicide on the aquatic plant community. The Washington Department of Fish and Wildlife agreed to track the effects on the fish community. The herbicide treatment application was performed by a licensed applicator at the expense of the herbicide manufacturer.

Kress Lake in Cowlitz County was selected as the test site because it is both a popular fishing lake and has a nuisance population of Myriophyllum spicatum. It is attractive because the Washington State owns the lake and shoreline, so no lake front property owners would be impacted by the study.

Kress Lake is a 30 acre manmade lake located about 20 miles south of Kelso in southwest Washington State. It is more or less oval in outline with a maximum depth of 18 feet. The shoreline consists of a short steep bank with trees and shrubs. A walking trail circles the lake at the top of the embankment. The lake is managed by Washington Department of Fish and Wildlife for fishing from shore or small boats. No combustion engines are allowed.

Prior to initiation of this study the aquatic plan community extended throughout the lake. Myriophyllum spicatum was the dominant plant, and formed a ring of surfacing vegetation around the lake edge. Two pondweed species and macroalgae Chara made up the majority of the remaining species. Fish species present include rainbow trout, brown trout, cutthroat, steelhead, channel catfish, largemouth bass, bluegill, pumpkinseed, crappie and warmouth. It is a popular recreation area for anglers as well as recreational boaters, hikers and horseback riders.

The aquatic plant community has been assessed four times so far for this study; before the herbicide treatment (June 13, 2000), ten weeks after treatment (August 24, 2000), one year after treatment (June 21, 2001) and 1.3 years after treatment (September 6, 2001). Biomass and frequency data were gathered at points throughout the lake on all but the last sample date at which time only frequency data was collected. In addition to the quantitative data, a composite species and secchi depth data were collected on each sample date. Follow up studies to collect the same site of data are planned for June 2002.

Plant samples were gathered systematically at points on a 30.5 meter (100') grid for the frequency data analysis. The grid was developed using a Geographical Information System (GIS). However, in the field the point coordinates from the GIS did not correspond with the data the Global Positioning System (GPS) unit was providing. Due to the small size of the lake, the field personnel felt they could visually estimate the point locations with sufficient accuracy.

At each point samples were gathered from the port side of the boat. Samples were gathered using two metal leaf rakes bolted back to back with the handles removed and replaced with a 30 meter marked rope. The rake was thrown twice, and all recovered species were recorded. The depth of each sample site was also recorded.

Biomass data were gathered at points located throughout the lake. These points were randomly selected from the same point grid used for the frequency data collection. Samples were collected with metal rake attached to a long aluminum handle. The rake was lowered to the substrate and turned 360 degrees to collect the plants within the circle scribed by the rake tongs. The sample was brought to the surface and placed into a plastic bag labeled with the sample location and depth. The samples were transported to the lab where they were sorted by species and placed into pre-weighed and numbered paper bags. They were dried in a forced air oven at approximately 95 degrees C, until they reached a constant weight. They were then weighed to .01 gram accuracy and the bag weight was subtracted to give the macrophyte dry weight. These data were entered into a relational database and analyzed for differences among the three dates using one-way Analysis of Variance (ANOVA).

The first herbicide application took place on June 21, 2000. Ten acres were treated around the edge of the lake using Aquathol K. The application rate was 1.5ppm, using about 6 gallons per acre. The second treatment was a month later. Another 10 acres were treated out from the shoreline toward the center of the lake using the same applications rates and amount.

The species diversity was greatest in June 2001. A total of 12 different submersed taxa were present at the time, this almost double the number found before the herbicide treatment. The number of taxa observed decreased to 9 by September 2001 sampling event, either due to sampling variability or possibly the increasing dominance by a few species making locating rare species more difficult, or the seasonal die off of selected species. One species *Heteranthera dubia* (water star grass), was identified before treatment but not during any of the sampling events after treatment.

A total of 371 samples were collected on the four sample dates, 90 in June 2000, 95 in August 2000, 94 in June 2001 and 92 in September 2001. For the analysis the Potamogeton spp. (pondweeds) were grouped together due to difficulty in differentiating the species.

These results indicate that in the short term (3 months after treatment) the herbicide reduced the frequency with which the vascular plants were wound, while not affecting the macroalgae Chara. During this period vascular plants were being reduced to the point of eliminating plant cover completely in location throughout the lake. By one year after treatment and throughout the summer (June 2001 and September 2001) the frequency of Chara appeared to level off while some of the vascular plants increased (*Elodea, M. spicatum, Utricularia*). This recovery appears to be filling in areas left bare of plants from the previous summer. The Potamogeton sp. do not appear to be rebounding yet.

These results indicate that the herbicide endothall (Aquathol K) significantly reduced both the biomass and frequency of observation of the target plant, M. spicatum (Eurasian water milfoil), over the study period. However, by 1.3 years after treatment M. spicatum (Eurasian water milfoil) was showing a significant increase in frequency, so the duration of its control may be ending. The results also show an increase in overall submersed aquatic plant species diversity one year after treatment, likely the result of increased available habitat. The impact on other species included a reduction in Potamogeton spp. (pondweed), frequency likely a direct result of the herbicide, and increases in frequency and/or biomass of *E. canadesnsis* (common elodea), *Chara (*muskwort) and *Utricularia* sp. (bladderwort) one year after treatment, probably a result of increased available habitat and/or resistance to the herbicide.

Text By: Jenifer Parsons

Hydrilla Blamed for Drowning

Kurt Hedgepeth never realized how dangerous it was trying to swim through a patch of hydrilla without a lifejacket. Family members blame the weed for the drowning of the 47 year old soccer coach and avid swimmer in Lake Austin, Texas, a 1,600 acre lake covered with 350 acres of hydrilla. Hedgepeth handed his life vest to his daughter after freeing her watercraft rudder from hydrilla then attempted to swim ashore through an area infested with the thick vegetation.

Residents and business surrounding Lake Austin asked city officials a second year to continue efforts to halt the spread of the aquatic weed. The Lower Colorado River Authority, which operates the lake, dropped water levels in winter 2001 to allow for mechanical tillage to expose roots and tubers to winter freezing. By last fall, hydrilla had reinfested most of the treated area. The Authority will lower the lake once again in winter 2002 in another attempt to control weed mechanically.

Produced by RISE
Responsible Industry for a Sound Environment
www.pestfacts.org

Invasive Snail Species detected at Lees Ferry in **Glen Canyon National Recreation Area**

New Zealand Mudsnails, an aquatic nuisance and invasive species, have been detected at Lees Ferry in Glen National Recreation Area. The snails are not native to North America and may have harmful effects on the river ecosystem. Mudsnails were unintentionally introduced into North America and over the past two years have emerged as a serious concern in the Western United States. New Zealand Mudsanils are very small, about one-eighth of an inch in diameter and can be very hard to detect when they first arrive. They can reach very high densities, as many as half a million per square meter. They provide very little or no food value to fishes and other aquatic life and can compete with other animals for nutrients, food and space.

Lees Ferry is a popular trout fishery located on the Colorado River in the Glen Canyon National Recreation Area in Northern Arizona. Lees Ferry is located just below the Glen Canyon Dam that forms Lake Powell and above the Grand Canyon National Park.

Snail populations have been on the rise over the past several years. Observations of scientists, anglers, and fishing guides have suggested that the snail populations have been increasing. Concern has been expressed that snail community at Lees Ferry might include New Zealand Mudsnails. Samples collected earlier this year were submitted to experts in Montana for identification. This evaluation confirmed that Mudsnails are present.

New Zealand Mudsnails arrived in the Western United States during the1980's, where they were detected in the Snake River in Idaho and the Madison River in Montana . They have subsequently spread to Yellowstone National Park and in 2001 were detected in the Owens River in California. There are potentially other infested sites that have not yet been detected and identified.

Mudsnails are very small but are very tough. They tolerate temperatures ranging from near freezing to about 78 degrees F. While they are aquatic, they are well adapted to surviving some period out of water. The shell comes equipped with an operculum or "hatch" that can seal the snail inside and protect it from drying and from predators. In a moist environment, the mudsnail can survive out of water for several days. There is evidence that they can pass through the digestive tracts of fish and potentially other possible predators. This make them very effective "hitch hikers".

It is not known exactly how or when Mudsnails first arrived at Lees Ferry. Work with scientists with the Grand Canyon Monitoring and Research Center is underway to see if it is possible to identify about when they first arrive. They likely arrived as a "hitchhiker". The most likely pathways for travel to Lees Ferry were on boats or gear used by anglers that had visited infested sites, on equipment used by scientists at infested sites, or potentially even with migratory birds that had visited infested sites. Because the snails are so small, they can "hitchhike" along the seams of waders or in the soles of wading boots.

The New Zealand Mudsnail does not require a partner to reproduce. The snails can reproduce asexually, through a process referred to as parthenogenesis. A single living snail can apparently start a new population.

There is no method for removing these snails from the Colorado River at this point. The best approach is to minimize the possibility that they are transported to other locations. Signs and information are being place at the Lees Ferry boat ramp to inform the angling and boating public, and asking them to make sure they do not unwittingly transport mudsnails to other locations. Anglers and boaters are encouraged to do the following:

1. Inspect and clean fishing gear (waders, boots, nets, etc..) and boats and trailers before leaving a fishing or boating site. Remove any vegetation, mud, or foreign material that may be attached. Drain water from your boats bilge before you pull away from the site.
2. Remove the stomach and digestive tract from any harvested fish at the site you catch them, mudsnails can be transported in the guts of fish. Dispose of that material in receptacles on site if at all possible.
3. Dry your gear thoroughly between uses at different sites. The hot Arizona sunshine is an asset. Cleaning and thoroughly drying equipment in the hot sun for several hours can kill mudsnails. Washing equipment with a strong soap solution, rinsing with tap water that drains onto the ground, and drying in the sun should do the trick.

This is a serious threat to Arizona ’s wildlife resources, and it will take a combined effort of all of Arizona’s citizens and those who visit to keep it from spreading.