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LAKE WISE

A Voice for Quiet Waters

The newsletter of the Oregon Lakes Association

OLA Announcements Include Crater Lake Conference

Since the last issue, there have been several OLA developments worthy of discussion. With respect to chronology, they are described here in the sequence of former to future.

The Harmful Algal Bloom workshop held on April 9th at OSU was attended by nearly three dozen participants. This total was less than the capacity class size but was sufficient to justify the undertaking, and the workshop did attract an audience with a wider range of job titles than normally respond to these classes. This was the second HAB workshop that OLA has had a role in since 2010. They tend to be organized on a short time frame, making it difficult to spread the news of the chosen time and place in a quarterly newsletter. Readers interested in future HAB sessions should browse the OLA website, www.oregonlakes.org, during February and March. Its unlimited space and up to date postings make the website the best source of information about OLA events.

The OLA website is undergoing a design change that reflects the maturation of OLA as an organization. When the new website is unveiled it will be hosted by a different server. The switch-over should be seamless for visitors as we will retain our present site name. The new server has been developed to attract non-profit organizations and provides them with the means to mange common administrative functions, such as membership renewals, mailing lists, electronic payments, bookkeeping, social media, event announcements and registration, *electronic newsletters*, a member only section of the website, plus technical features that webmasters appreciate. The list of features available at this new server is quite similar to the list of vexing problems that appear on Board meeting agendas, so the change is a welcome one.

The OLA Conference this year will be held at Crater Lake National Park, on Friday and Saturday, September 14-15. The only available meeting room with a view of the lake has been reserved at the Rim Cafe in Rim Village. Negotiations have begun about scheduling a Sunday boat trip. The boat is not a submersible but may be suitable for Secchi depth measurements. Researchers interested in summarizing their work at the meeting should submit abstracts to the OLA webmaster, or to Steve Wille at sawille1@gmail.com. Presentations focusing on Crater Lake or other remarkable southwest Oregon lakes will have priority, but any news of Oregon lakes is of interest. Space for posters will also be available.

Among the agenda items for the September conference is the awarding of a $750 scholarship to a prospective or a continuing limnology student engaged in the study of Oregon lakes. Application details are described on the insert enclosed in this newsletter. The deadline for applications is August 15, 2012. Note that the scholarship recipient need not attend the Crater Lake Conference to be considered. It would be beneficial for the winner to meet the OLA members there, but the scheduling of conflicting demands is a reality for us all. This notice comes as schools are breaking for summer, so do pass the word along if you know of a candidate scholar.

Oregon Sampling Sites for the 2012 National Lakes Assessment

water body	county	description
Agate Res	Jackson	Bur. Reclamation irrigation reservoir to east of White City OR.
Baca L	Harney	Irrigation reservoir draining to Donner & Blitzen R, 7 mi north of Frenchglen OR.
Beale L	Coos	Dune lake of multiple, connected basins, between Lakeside & North Bend.
Beulah Res	Malheur	Bur. Reclamation irrigation reservoir 12 mi north of Juntura OR.
Beyers L*[1]	Clackamas	Agriculture impoundment 5 mi east of Scotts Mills OR.
Carter L[1]	Douglas	Elongated dune lake immediately west of Hwy 101 & south of Lane Co. line.
Clemens Log Pond[1]	Benton	Derelict log pond just NE of Philomath OR.
Cooper Creek Res	Douglas	Soil Conservation Service reservoir 11 mi north of Roseburg OR.
Emigrant L	Jackson	Bur. Reclamation irrigation reservoir 5 mi SE of Ashland OR.
Fern Ridge L	Lane	USACE reservoir just west of Eugene OR.
Fish L[1]	Marion	Largest of Squirrel Ck lakes, 2 mi NW of Olallie Lake.
Johnson L**[1]	Multnomah	Pond at head of Columbia Slough tributary, near NE Killingsworth St. & Hwy 205.
Keene Creek Res[1]	Jackson	Diversion pond moving water from Hyatt Res to Emigrant L.
Lake Edna	Douglas	Water supply lake to east of Hwy 101 between Eel L & Clear L.
Link L[1]	Jefferson	Small lake at head of Link Ck, upstream of Suttle L.
Malheur Res	Malheur	Irrigation & flood control reservoir on Willow Ck, 20 mi west of Huntington OR.
Mann L	Harney	Shallow, playa lake on east slope of Steens Mtn, 22 mi ESE of Baca L.
Maxwell L[1]	Wallowa	Eagle Cap Wilderness lake at head of Lostine R tributary.
Moon Res	Harney	Irrigation reservoir upstream & 15 mi NW of Harney Lake.
Mowich L	Linn	Ultraoligotrophic, Mt. Jefferson Wilderness lake, between Marion L & Big L.
Odell L	Klamath	Large, glacial lake along Hwy 58 between Waldo L & Crescent L.
Phillips L	Baker	Bur. Reclamation reservoir on Powder R, 17 mi SW of Baker City OR.
Smith Res	Linn	Hydropower reservoir on Smith R, upstream of Trail Bridge Res.
Sparks L	Deschutes	Shallow, double basin lake, 20 mi west of Bend OR.
Ten Cent L[1]	Harney	Persistent, dammed lake on east slope of Steens Mtn, 20 mi NNE of Mann L.
Top L[1]	Lane	Three Sisters Wilderness lake, 2 mi south of Mink L.
Waldo L	Lane	Large, ultraoligotrophic lake at head of NF of Middle Fork Willamette R.
Willow L[1]	Marion	Willamette R oxbow lake, just NW of Keizer OR.
Yoncalla Log Pond[1]	Douglas	Log pond of former mill in Yoncalla OR.
		* 1st choice for final sample site. ** Backup sample site. [1] New to on-line *AOL*.

Portland National Water Quality Monitoring Conference Exceeds Expectations

It is convenient to have a major conference convened in your hometown. You can take in the bustle of the meeting and still attend to needed household errands. The National Water Quality Monitoring Conference that met in Portland from April 30 to May 4 also exceeded the expectations of the sponsors by attracting about 1100 registrants to the Oregon Convention Center, making the conference substantially larger than the typical annual meetings of NALMS. Many of the attendees were monitoring the water quality of systems other than lakes, but

there were still hard choices between pertinent discussions among the nine concurrent sessions, and plenty of common interests for unacquainted attendees to explore with one another.

The essence of the conference was perhaps best contained in the first conclusion of a poster produced by the Portland Water Bureau, which summarized their monitoring of the Dollar Lake fire on the north side of Mt Hood last summer. The fire did not reach the protected Bull Run watershed but was close enough to generate concern. The analysis of the sampling data relied on comparisons to historic data and showed no impact to the watershed from this fire. The poster conclusion recognized the value of baseline data to provide a perspective for current conditions. The Water Bureau has organized their decades of watershed monitoring data into time series standards that show the range of variability that can be expected during discrete periods of a given year, and quickly warn of an event that may be outside of normal limits. The Water Bureau has this useful tool available because they have conducted the water quality monitoring required to create it. The poster demonstrated how water quality monitoring can be a beneficial investment of limited funds.

About two dozen attendees broke away from the Wednesday afternoon sessions to tour the Durham Advanced Wastewater Treatment Facility. The unique feature of the treatment train there is the production of a phosphate fertilizer from the effluent being processed. This wastewater treatment option was discussed in the August 2009 *Lake Wise*. At the Durham plant, they estimate that one ton of slow release, 5-28-0, Crystal Green fertilizer pellets are extracted from each 13 million gallons of treated wastewater. The process has proved so successful that Clean Water Services, the owner/operator of the plant, has just installed larger chemical reactors to produce the fertilizer at their Rock Creek facility in Hillsboro. The payback for this latter $4.5 million investment is just six years.

Those of us who stayed for the final, Friday afternoon session were treated to a novel idea that would be welcome at any major conference. Attendees were directed to locations organized by geography. So groups of 8-10 people from the same region or state were each able to introduce themselves and describe what they could offer, and what they were looking for. The exercise had everyone reaching for their business cards and grabbing those being offered. The exchange was very much like the scenario seen each year at the OLA Conference, where people with a lot in common have an opportunity to become better acquainted. The value of these contacts can be estimated by the difficulty OLA Board members face when ending the breaks to resume the day's agenda.

Oregon Aviation Board to Tally Flights to Waldo Lake

The decision to ban the use of internal combustion engines on Waldo Lake has long been contentious, and continues to be so. On April 10th, the Oregon State Marine Board reaffirmed its decision to ban motor boats but reversed the former prohibition of seaplanes on the lake. The action was necessary to address procedural issues that had been raised about the previous ruling, which occurred in 2010. The exercise is of interest from several perspectives; technical questions about administrative procedures are most often lodged by a resolute opposition; the public commenting, which has become a required element for governmental agency decisions, is most informative when the nature of the comments, as well as their number are considered in their review; and revisiting the decision provides emphasis to the long-standing, high esteem given to Waldo Lake by Oregonians and their legislative representatives.

It was the Columbia Seaplane Pilots Association that filed suit in the Oregon Court of Appeals against the Marine Board's 2010 Waldo Lake decision. In response to the suit, the Marine Board initiated new rulemaking to address the complaint. A rereading of the Marine Board's authority to regulate "boats that are seaplanes" stressed cooperation with the State Aviation Board in rulemaking for this class of watercraft. The joint meetings between these two Boards produced interest in defining unaccepted operations, such as training flights or practice landings, unlimited hours of operation, and unrestricted use of the entire lake, so long as Waldo Lake remains accessible to seaplanes and for more than emergency landings. The Marine Board has no authority over seaplanes in flight, so defining seaplane access at Waldo Lake must come from the Aviation Board.

The call for comments that accompanied this new rulemaking was completed on April 10th, and produced more than 4500 responses. Both this number and the overwhelming support for the ban on internal combustion motors were noteworthy. Only 7% of the responses received favored a complete or partial repeal of the ban. Sierra Club members sent in 3105 responses and all but 150 of these came from Oregon addresses. The second largest group of responses came from the Experimental Aircraft Association, and all but 32 of these 237 comments came from an address outside of Oregon. But then with experimental aircraft, it would not take long for out of state pilots to reach Oregon airspace.

The total number of responses received is of interest because it does not reflect the accumulated boating data for Waldo Lake, although the usage numbers do swell considerably when the tally from the three USFS campgrounds on the lake's east shore is added. The Marine Board's 2008 Triennial Report ranks Waldo Lake 124th among Oregon boating destinations according to the criterion of Boat Use Days, or the number of people times the number of days that boating occurred per year. The chart below shows boating recreation at Waldo Lake in perspective:

Oregon Boating Recreation

rank	water body	county	boat use days	boat trips	activity days	fishing	sailing	cruising
59	Timothy L	Clackamas	7842	4654	8237	6706	472	1059
120	Haystack Res	Jefferson	929	772	929	917		12
123	Little Lava L	Deschutes	813	813	813	813		
124	Waldo L	Lane	758	171	758	108	508	69
125	Matheur Res	Harney	747	631	747	747		
126	Delintment Res	Malheur	734	198	734	734		

The statistics for this survey were compiled when motor boating was still permitted on Waldo Lake. The chart makes it readily apparent that Waldo Lake attracts a special class of recreationists. The 10 mph speed limit in place at the time of the survey ruled out water skiing. There have been no rainbow trout stocked since the ODFW stopped that program in 1991, and while there is a stable population of naturally reproducing brook trout, their numbers are insufficient to attract serious fishing. Mosquitoes, which thrive in wilderness conditions, dampen enthusiasm for shore based activities. The sailing numbers are significant, but not so much so in comparison to the estimated 20,000-30,000 boat use days that sailors log on all of Lane County lakes each year. It seems then that serenity does rank high among the attractions for this destination. And unlike other, true wilderness lakes, the roads leading to the east shore of the lake make this tranquility readily accessible.

The large size, low productivity, remarkable clarity, and distilled water chemistry of Waldo Lake have combine to make it one of the best studied lakes in Oregon. The June 2000 issue of *Lake and Reservoir Management*

was dedicated to the unique limnology of this ultraoligotrophic lake. The special character of Waldo Lake was recognized by Oregonians in 1983 when they voted to add the lake to the Oregon Scenic Waterways, a program approved by a citizen's initiative in 1970. Waldo Lake is the only lake included on this list of protected waterways. The stated purpose of this program is to "… protect and preserve the natural setting and water quality of the lake and [selected] rivers …" This mandate and the strong public support of keeping the ban on internal combustion motors in place justify the Marine Board decision on the matter.

The Oregon Aviation Board considered the question at a May 17th meeting and passed a temporary rule that seeks to better define seaplane use at Waldo Lake. The ruling prohibits pilot training exercises at the lake and limits seaplane use there to serving as an alternative mode of transportation to and from the lake. Arrivals and departures are limited to daylight hours, and are restricted to the eastern half of the lake. Pilots must screen and remove any invasive species from their seaplane prior to landing, must use best noise abatement procedures consistent with safe operating procedures, and must notify the Department of Aviation of their arrival and departure times within 48 hours of their departure from the lake.

This rule will be in effect for 180 days. The final rule will be set following formal rule-making protocols at the end of this period.

Fun in the Sun, at the Lake, this Summer

We all have fond memories of past lake outings, and these excursions continue to be a source of enjoyment. But without conscious scheduling of a lake visit, the summer may fly by and leave you wondering why there was no boating. Read on for a couple of reasons for a drive to the lake.

Cabala's "Wanna Go Fishing for Millions": Cabala's is a national outdoor outfitters retailer that opened their first Oregon store in Springfield in May 2011. They offer this contest annually to spur interest in fishing and to add a little zing for anglers who are normally content to just cook and consume their catch. It is the second year that Oregon has participated in the contest.

For this year, 1060 fish have been tagged and divided among the 19 states engaged in the annual derby. The Oregon quota of the fish has been divided between Crane Prairie Reservoir, Blue River Reservoir, and Dexter Reservoir. The fish being tagged can be largemouth, smallmouth, spotted, striped, and white bass; cutthroat, rainbow, brown, and lake trout; and walleye, perch, wiper, crappie, bluegill, and channel catfish. Individual anglers 18 or older, who are not residents of New York or Florida, are eligible to register, and only registered anglers can win. Participants are encouraged to pre-register so they will be in contention when the contest begins.

Only tagged fish caught between May 5th and July 8th will produce a prize. The lucky money fish is worth $1,000,000 only if it is one of the first 10 fish caught. If it is the 11th to the 100th fish caught, the prize is reduced to $100,000, and if it is the 101st to the 1060th, the prize is $10,000. There is a doubler registration for the money fish, and there are lots of other prizes for the other tagged fish. The contest has been carefully devised by lawyers so be sure to read the rules when you register. Details and registration information is available at www.cabelas.com.

ODFW reports that 7000 Oregon anglers registered for the derby last year and they caught 17 tagged fish. Those numbers are equivalent to 1 in 412, or orders of magnitude better than the Lottery odds. And you get to dream of Easy Street while you are fishing.

Dragonfly research for the Xerces Society: This idea is not as exotic as it sounds. All that is required is to look once a month for two common species of dragonflies at your favorite lake. Shallow areas with emergent vegetation are the best sites to look for dragonflies, but they are apt to be in almost any aquatic setting. The research is meant to investigate the migratory habits of dragonflies. You register for this program at www.xerces.org.

The two dragonflies are the Common Green Darner, *Anax junius*, and Black Saddlebags, *Tramea lacerate*. Descriptions showing their key features are readily available, and after a bit of field work, they can be readily identified in flight. Low power binoculars that can be focused on nearby objects are helpful and make watching dragon- and damselflies more enjoyable by revealing greater detail. Dragonflies can be found equally well from a canoe or on shore. A lake trip in this program just asks whether the two species were present or not, their behavior and a population estimate if they are spotted, and the time you spent looking. The sexes of the species have a slightly different appearance so that is another pertinent observation that can be recorded, and you may be able to determine how long it has been since the adults have emerged.

Adults of these two species have been seen at ponds in the spring before the larvae have emerged and so they are thought to be returning to their birthplace. Observations from spring to late summer are of value. It is logical that the Xerces Society would be interested in this question because they are a non-profit, international organization that protects wildlife through conservation of invertebrates and their habitat. The Society was established in 1971 and is based in Portland.

The Value of Mandatory Boat Inspections is Quickly Proven

In May, ODFW began stopping boats at highway inspection stations near La Grande, Central Point, Ashland, and Baker City, to verify that boats passing by were free of aquatic invasive species. By the end of the first Tuesday through Saturday session, the La Grande team had discovered zebra mussels on a pontoon boat coming from Saginaw Bay, in Lake Huron, and quagga mussels were discovered at the Central Point station on a boat coming from Lake Havasu, Arizona. Since then, the La Grande station has found an additional boat with zebra mussels coming from the Mississippi River system. All of these boats were decontaminated.

All vehicles transporting kayaks, canoes, paddleboats, sailboats, as well as registered watercraft, motorized or not, are now required to stop at the inspection stations. The Legislature made the previously voluntary inspections mandatory last year to increase the efficiency of the program, and to add greater emphasis to the importance of minimizing the spread of aquatic invasive species. These latest discoveries are proof that the topic is still not well understood in the boating community.

There are no known infestations of *Dreissena* mussels in Oregon, but numerous water bodies here do have Eurasian milfoil, New Zealand mud snails, and/or other aquatic pests that could be spread beyond their present distribution. There is nothing wrong about boating at these locations, but boat owners should be made aware of the need to decontaminate their vessels when the voyage is done. Signage at the boat ramp, if it is not already posted, would help ensure that any infestation would not be moved to a different site. Decontamination is best

done within the contaminated basin because all runoff from the treatment is contained. Earning a certificate of decontamination when departing a contaminated location could speed the trip home or the next launching, and so provide an incentive for completing this extra step.

It is unlikely that the inspection stations are catching all the invasive species moving on Oregon highways. The inspections are still beneficial, even if they just delay the introduction of alien species, because of the on-going research for ways to manage these pests. In March, the EPA approved the use of a dry formulation of Zequanox®, a biological product for controlling zebra and quagga mussels, within enclosed systems and infrastructures. This pesticide is marketed as a powder composed of a specific strain of dead, *Pseudomonas fluorescens* bacteria. The filter-feeding mussels readily ingest Zequanox but are known to clam up if they detect unnatural chemical formulations. North American trials have demonstrated 80% efficacies in controlling adult mussels and even better effectiveness with juvenile stages, without harm to humans, infrastructure, non-target species, or the environment. Whole lake trials are now underway.

The Sockeye are Coming, the Sockeye are Coming!

The first sockeye salmon of the Columbia River run was detected at the Bonneville Dam fish ladder on May 25. This is a regular occurrence so it was not a surprise that the run is underway, but the run is highly anticipated this year as it may provide an additional demonstration of the successful changes that have been made at the outlet of Lake Billy Chinook. You may recall that the Bonneville sockeye count in 2010 was greater than 380,000, but almost all of these fish continued swimming up the Columbia to Washington and Canada. A substantial number of sockeye this year may take the Deschutes River exit to the Pelton/Round Butte Dam complex. Fish sorters at this joint PGE/Confederated Tribes of Warm Springs project counted 50,000 sockeye smolts moving downstream in 2010, and their return is expected to begin this year.

PGE and the Tribes have been seeding the streams above Lake Billy Chinook with spring Chinook and summer steelhead fry since 2007, and these fish are also beginning to bolster their annual spawning runs. The sockeye run however is based on the long term presence of kokanee, or land locked sockeye salmon, in Lake Billy Chinook. There has been little effort expended on re-establishing this historic run, which is what makes it so exciting if they do begin a spawning run up the Deschutes. All aspects of this restoration project are described at the PGE website, www.deschutespassage.com.

A Setback for Magone Lake Crayfish

Readers may want to refresh their memories about Magone Lake at the on-line *Atlas of Oregon Lakes*, at http://aol.research.pdx.edu. There you will find that this natural, 30 acre landslide lake in Grant County is at 5000' elevation, and supports a popular ice fishing season in the winter. Magone Lake (locally pronounced as "Magoon") lies in a narrow valley, has an average depth of 30', and a maximum depth of 98'. It becomes highly stratified and the deeper regions turn anoxic in late summer. The State Marine Board ranks the lake at 188th among Oregon boating destinations, with 103 boat use days. All of these expeditions were for fishing.

Visitors began reporting dead crayfish at the lake in early May and a Malheur National Forest investigation estimated the kill in the tens of thousands. The kill was contained in an off-shore band at a depth between 3 to 6

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OLA Mission: The Oregon Lakes Association, a non-profit organization founded in 1990, promotes understanding, protection, and thoughtful management of lake and watershed ecosystems in Oregon. For additional information on OLA, write to the address above, or visit our website.

OLA welcomes submissions of material that furthers our goals of education and thoughtful lake management in Oregon, and is grateful for the corporate support that helps sustain the organization. Corporate members are offered a one-time opportunity to describe their product or service to Lake Wise readers. These descriptions are not endorsements, and opinions appearing in Lake Wise are not OLA policy statements.

Visit our website: www.oregonlakes.org

Magone Lake Crayfish … (cont.)

feet, and included a cross section of the crayfish population. Carcasses of both, the signal crayfish, *Pacifastacus leniusculus*, and another crayfish species were found. The dead appeared to all have been killed within a short time span.

Aquatic die-offs of any sort raise questions about adequate dissolved oxygen concentration. Low oxygen levels are a recognized problem at Magone Lake. The lake contains numerous submerged trees that contribute to oxygen depletion year round. Prolonged ice cover at high elevation lakes blocks air contact, sunlight, and hence photosynthesis, and so is another factor in the dissolved oxygen cycle that occurs over a year. But in springtime, these lakes gain oxygen as winds blow across their ice free surface and cause the water to churn and mix. The timing of ice-out this year at Magone Lake has not been stated, but the lake was likely experiencing turn-over after ice-out when the die-off occurred.

Subsequent investigations have ruled out hypoxia as a cause in this instance. No fish were included in the kill, and mayflies and other oxygen sensitive species are still abundant in the lake. A good portion of the crayfish population also survived. The unfortunate individuals that died may just have been at a spot in the lake where they were trapped somehow during ice-out. The die-off may be a recurrent event.

Determining the cause of the die-off would be easier if more was known about Magone Lake. The incident has spurred an official inquiry so the lake is undergoing added scrutiny. Perhaps some of these new observations will find their way to the on-line *AOL*.