



The Kingfisher



Newsletter of the Yamhill Basin Council
Working to improve our watersheds
Volume 6, Issue 2

September
2008

Support the YBC!

Purchase a limited edition Kingfisher print (above), painted by local artist Terry Peasley.

Matted 11x14 cost \$30; 16x20 cost \$50. Framed prints available as well. Visit Hidden Treasures Gallery in McMinnville or call the YBC at (503) 474-1047 to order yours today!

Yamhill Basin Council

Officers

John Betonte *Co-Chair*
Stan Christensen *Co-Chair*

Staff

Jean Reiher *Watershed Coordinator*
Denise Schmit *Monitoring Technician*
Corissa Kunze *Monitoring Assistant*

Stakeholder Groups

Agriculture
Bureau of Land Management
Business/Community Development Assoc.
City Government
Confederated Tribes of Grand Ronde
Environmental Groups
Industrial Forestry
Natural Areas Parks & Recreation
Students
Small & Large Utilities
Small Woodlands Assoc.
Watershed Residents
Yamhill & Polk Counties
Yamhill SWCD

10 years of Water Quality Monitoring in the Yamhill Basin! What and Where are We Measuring and Why is it Important?

By YBC Water Quality Monitoring Technician, L. Denise Schmit

The Yamhill Basin Council began water quality monitoring in 1998 with annual placement of continuous temperature data loggers during the summer months in streams throughout the Yamhill River watershed. In 2003, we began more comprehensive water quality monitoring basin-wide to get baseline data. The parameters studied included temperature, dissolved oxygen, pH, turbidity, conductivity, E. coli, and flow. Stream habitat and aquatic insects were also measured during this project. The same parameters were measured in our 2005/2006 water quality study, focused only in the North Yamhill River subwatershed. During the spring of 2007 & 2008 we partnered with Oregon DEQ to collect samples for baseline data of pesticide levels in our watershed. Results are being summarized.

In our current study for 2008/2009, our monitoring is focused in the Lower Yamhill River Basin on Salt Creek, Ash Swale, Palmer Creek, and Cozine Creek, and a more in-depth E. coli study of Panther Creek in the North Yamhill River subwatershed. We are also analyzing samples for phosphorus and ammonia concentrations. All of the parameters can be indicators of the overall health of the stream and the watershed or subwatershed. It is a holistic system, of which one parameter interacts with and/or affects other parameters.

Below is a brief explanation of each parameter we are currently measuring and why it is important in assessing water quality.

Temperature: Colder temperatures ranges are very important for the survival of fish and other aquatic life. Warmer temperatures contribute to increased algae and plant growth, and decreased dissolved oxygen.

Dissolved Oxygen (DO): The amount of oxygen saturated in the water. DO is very important for the survival of fish and other aquatic life. Cold temperature and good flow contribute to higher DO levels. Increased algae and plant growth decrease available DO.

pH: Indicates the acidity of the water. Higher acidity allows nutrients (e.g., phosphorus) which may be present in the streams from run-off, to be more soluble/available to for algae and aquatic plant growth, which increases turbidity, and lowers dissolved oxygen.

Turbidity: The clarity of the water, i.e. "murkiness". Measured by the amount of fine sediment suspended in the water. Higher turbidity leads to warmer water as the light/heat is absorbed more readily than in clearer water. Turbidity can also clog gills of fish and other aquatic life.

Conductivity: Estimates the amount of total dissolved salts in the water. High levels are unhealthy for fish and other aquatic life. Some possible sources of increased conductivity include increased temperature, septic and sewage systems, agricultural runoff, and natural geology (e.g. limestone).

E. coli: Bacteria from human/animal waste. Can be harmful to humans in high concentrations. Some possible sources are livestock, wildlife, and faulty septic systems.

Flow: The volume of water in a stream system measured in cubic feet per second. If a stream is not flowing quickly or is stagnant, the dissolved oxygen is reduced and temperature tends to increase. Lower flow leads to less dilution of pollutants, e.g., higher concentrations of E. coli, phosphorus, ammonia, pesticides, etc.

Phosphorus: A nutrient commonly found in fertilizers. Can contribute to increased algae and aquatic plant growth.

Ammonia: Toxic to fish and other aquatic life at higher levels. Possible sources are household products, fertilizers, and sewage effluent.

If you would like to receive email announcements for water quality monitoring opportunities or future water quality presentations, please email ycb_coordinator@co.yamhill.or.us or call 503.474.1047.

WESTERN POND TURTLES BY LYNN WAHLE

The imperiled western pond turtle continues to make its presence known in our local watersheds. Most recently "Mac," whose picture appeared on the front page of the News Register, was found in a residential neighborhood in McMinnville. The medium sized male with minor shell damage, most likely caused by a dog, was estimated to be about 20 years old. Under favorable circumstances he could reach 30 or even 40 years. Turtles have growth marks on the scutes on their shell called annuli that can be used to assess age, similar to tree rings. Although these are often worn down and smooth in older turtles, Mac's were visible enough to estimate his age.

Most of the western pond turtles remaining in Yamhill County are older remnant individuals like Mac, with breeding populations now very small or lost altogether. With fewer young turtles surviving to replace the adults, the species could eventually vanish from our area unless steps are taken to improve or create nesting and hatchling habitat so they can successfully reproduce.

Local landowners are extremely important to the western pond turtle's future because the most desirable habitat is privately owned. According to the Oregon Department of Fish and Wildlife, the following habitat elements are considered vital to the western pond turtle's life cycle:

Water body: A permanent body of still or slow-moving water with emergent and submergent aquatic vegetation, and limited chemical application or runoff. Both shallow and deep areas will provide suitable habitat for turtles. Sizes of permanent wetlands range from small ¼ acre sites to hundreds of acres. Small ponds that dry in the summer may be used seasonally by turtles. However, ponds are most effective when located near other ponds or streams.

Hiding and basking sites: Habitat quality increases as the number of basking sites, especially those with underwater cover, increase. In addition to logs and rocks, vegetation and stream banks can provide good basking habitat.

Hatchling habitat: Hatchlings need shores with gentle gradients and water less than 12 inches deep to survive. At least 25 percent of the edge of a water body should contain shallow habitat for hatchlings to regulate their body temperature. Mats of vegetation and other structures are important for cover to hide from predators.

Nesting habitat: Quality nesting habitat consists of short, grassy or weedy areas in hard compacted, clay soil preferably on south or southwest-facing slopes. The nests must be undisturbed almost year-round. Nesting areas must be outside winter flood plains. (Keep in mind that although the eggs hatch in the fall, the hatchlings usually remain underground in the nest to hibernate until spring.)

Corridors: Rivers and streams are safer and quicker routes for turtles than land travel. Turtles may take several days to a few weeks to complete a dispersal or migration, thus food and cover provided by aquatic and riparian vegetation is critical.

The following websites have more information on turtles:

<http://www.oregonturtles.com>

http://www.dfw.state.or.us/wildlife/living_with/turtles.pdf



YBC Membership and Volunteers

Welcome new Council Member Steve Wegner!

We currently have openings for new Council Members representing Small Cities, Utilities, Students, Agriculture, and Watershed Residents. If you are interested in working to improve the Chehalem and Yamhill watersheds through a collaborative, consensus based group, please attend a Council meeting on the second Thursday of each month from 7-8:30pm at the McMinnville Water Reclamation Facility at 3500 NE Clearwater Drive, McMinnville. New Council Member Application forms are available at the YBC office or on our website.

We are also looking for volunteers to help with water quality monitoring, removing invasive plants, planting native species, mulching and watering plants, cleaning up streams, or doing event planning, fundraising, and office work. Please contact our office at 503.474.1047 and tell us your areas of interest. Thank you!



Camas (*Camassia quamash*)



Yamhill
Basin
Council

P.O. Box 1517
800 NE 2nd St
McMinnville, OR 97128-1517
Phone: 503.474.1047
Fax: 503.472.2459
www.co.yamhill.or.us/ybc

Comments, questions, submissions? Wish to be added to or removed from the mailing list?

Contact Jean at (503) 474-1047 or ybc_coordinator@co.yamhill.or.us.