



JAN 3 2008

Depository
Dallas Public Library

CRWN hosts annual Summer Stewardship Workshop

By Theresa Murray, CRWN volunteer coordinator



Monitor Chris Pasch volunteers as monitor and educator. Learn more by reading the Monitor Spotlight on page 7.

CRWN hosts annual summer stewardship workshop....1
Letter from the editor,
New monitors, CRWN intern.....2
Water Column: Invasive aquatic plants impact water bodies,
Upcoming events.....3
Clean Rivers Quarterly:
LCRA conducts fish tissue study....4
Q and A: Is it safe to swim?,
Hot Topic.....5
Technical Corner:
Whirl-Pak sampling for the *E.coli* test.....6
Monitor Spotlight:
Volunteer Monitor hosts water quality demonstrations.....7

CRWN volunteers gathered at Lake Buchanan the first weekend of June to learn about water quality and to network with each other. Participants enjoyed a full day of events including presentations and hands-on learning sessions by LCRA and City of Austin staff.

Environmental Scientist Mary Gilroy, with the City of Austin Watershed Protection and Development Review, opened the morning with an update on the hydrilla infestation in Lake Austin. Mary outlined the history of hydrilla control efforts on Lake Austin and the current status of this invasive plant as well as other native and non-native plants on the lake.



At the annual CRWN Stewardship Workshop, Volunteer Monitors examined specimens of the different watermilfoils. Clockwise from left: Steve Box, Mary Gilroy; City of Austin, Diane Nousanen, Remigio Mejia, Les White, Betty and Jon Rodgers, Robin Berry; LCRA, Sue and Mike Kersey.

John Wedig, senior aquatic scientist with LCRA, discussed the current status of invasive and non-native aquatic plants across the Lower Colorado River watershed. John also informed participants about threats on the horizon in Texas that have not yet reached the Colorado River basin.

Returning to the CRWN workshop this year for another entertaining and informative presentation was Elizabeth Drozda-Freeman, conservation landscape specialist with LCRA. Elizabeth described how invasive plants in the landscape can affect water quality and quantity. Elizabeth then informed participants about alternatives to invasive and non-native plants.

Rounding out the afternoon was the monitor spotlight during which volunteers shared pertinent information about their site. Monitor Phyllis Muska's presentation encouraged volunteers to add "weed watching" to their protocol and Kathy McCormack offered a GIS comparison of Post Oak Creek and Cow Creek. Also describing the unique situations at their sites were monitors Steve Box, Roger Kew, Jon Rodgers, Pete and Fay Jones, and David Buzan.

To close, concurrent mini-workshops allowed monitors to choose from among sessions on *E.coli*, macroinvertebrates and pH. The CRWN team thanks all the presenters, staff and participants for making the workshop a success.

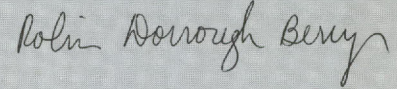
Aqua Vitae is a newsletter published by LCRA for Colorado River Watch Network volunteers, Clean Rivers Program steering committee members and citizens concerned with the environmental quality of the Colorado River and its tributaries. If you want to be added to our mailing list, or if you do not want to continue receiving this publication, please contact Robin Darrough Berry, editor, at 1-800-776-5272, Ext. 2416, or in Austin at 473-3333, Ext. 2416 (e-mail robin.berry@lcra.org). Visit LCRA's Web page at <http://www.lcra.org/water/crwn.html>.

LETTER FROM THE EDITOR

Summertime.... Personally, it's the time of year I love best; when blue skies beckon outside, the sun shines warm and the water is cool. I derive such joy and peace from being in, on and near the water. Professionally, I am motivated by a feeling of responsibility to preserve, protect and ensure that this life-giving substance remain pure and plentiful.

Threats are numerous: invasive plants, bacteria and metals, nonpoint source pollution. Volunteer monitors can and do make a difference in the detection of and control of some of these concerns. Several CRWN monitors report aquatic plant findings, and many run bacteria tests. If you are

a volunteer monitor and would like to know how you can be involved in testing and reporting optional water quality parameters, please contact your support staff.



Robin Dorrrough Berry, editor
1-800-776-5272 or in Austin
at (512) 473-3333, Ext. 2416
robin.berry@lcra.org

The River Watch Welcomes New Monitors

These newly certified monitors will collect data for LCRA's water quality index report:

Jennifer Threatt, Meggan Georgas, Lochen Wood, LCRA employeesLake Austin above Tom Miller Dam
Sandy Shaw, Sheryl and Robert Yantis..... Llano River at RR 3404

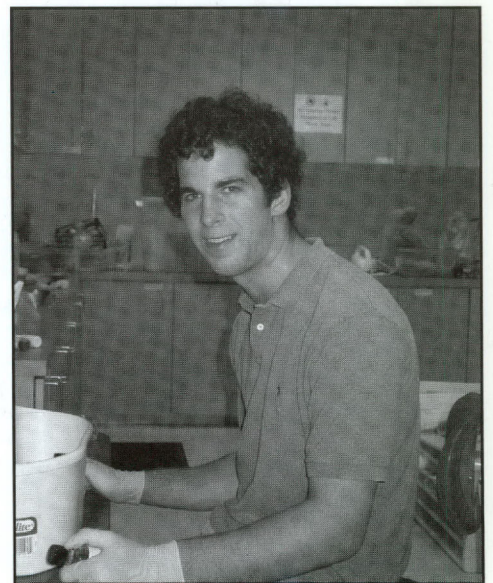
Students Win Awards

Congratulations to the following student monitoring teams who won awards for the 2005-2006 school year. Look to the next Aqua Vitae issue for the highlights of these students' achievements.

- Outstanding New Monitoring Group: Columbus Junior High—Riverside; Teacher-Shannon Zwahr
- Einstein Award: Lago Vista Boy Scout Troop #198; Chairman-Joe Monahan
- River Watch Warrior: Austin Youth River Watch; Leader-Elisabeth Welsh

Intern volunteers to assist the CRWN program:

David Houston is a nineteen year-old senior at Saint Andrew's Episcopal School in Austin. He plans to attend Texas Christian University in the fall. A family friend recommended that he intern at the LCRA because of his love for the outdoors, and his interest in chemistry. The Colorado River Watch Network is a perfect fit for David because he gets to work in the lab and has the opportunity to learn about the Colorado River and its tributaries. In his free time, David enjoys hunting, fishing, sailing and playing sports.



Saint Andrew's Episcopal High School senior David Houston volunteers in the CRWN lab.

THE WATER COLUMN

Invasive aquatic plants impact water bodies

by Bryan Cook, LCRA aquatic scientist

Native aquatic plants are an important part of many aquatic ecosystems. They filter sediments from the water, take up excess nutrients, and provide habitat for fish and invertebrates. Non-indigenous aquatic plants, however, pose a serious ecological threat when introduced into a lake, river, or pond. These nuisance weeds originate from all over the world and grow rapidly in their new environments due to the lack of natural enemies to keep them in check. Once established, the plants compete with native vegetation for food and space. Invasive plants can completely “choke” a waterway, reducing the numbers and diversity of native plants and disrupting the ecosystem balance.

Invasive plants may also cause significant economic impacts and prohibit recreational uses such as swimming and fishing. Hydrilla, for example, is notorious for clogging power plant and drinking water intakes, and irrigation canals. The plant can grow at a rate of one inch per day and forms dense mats. The intake grates at Lake Bastrop are checked and cleaned regularly to prevent a shutdown of the power plant. Hydrilla in Lake Austin has impacted dam operations, drinking water intakes, and recreation. Other problematic weeds in the Colorado River include Water hyacinth, Eurasian watermilfoil, and Alligator weed.

Water quality is often directly impacted because the plants grow so densely. Increases in water temperature and pH are common. A serious threat to fish

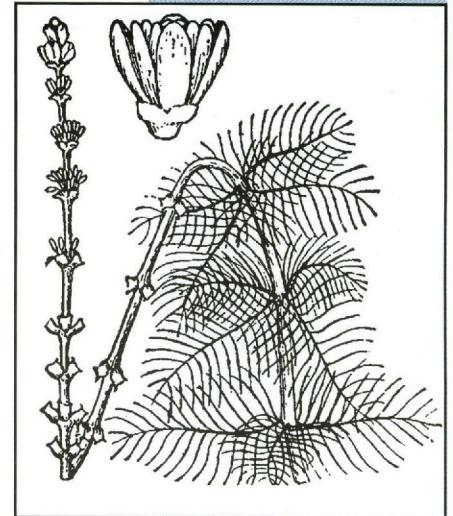
and other aquatic organisms comes from dramatic fluctuations in dissolved oxygen (DO) over a 24 hour period. Daytime photosynthesis can produce very high DO while nighttime respiration from the dense stands of invasive plants can practically deplete it. Dissolved oxygen is also depleted as the plants decompose after the growing season.

Management of invasive plants can be challenging because the wishes of a diverse mix of stakeholders must be balanced. Furthermore, there is not a single approach to controlling nuisance plants that's effective and acceptable to the public. As the coverage of plants increases, so does the expense of implementing a successful management program. Early detection of invasive species increases the chance of controlling them before they become ecologically and economically problematic. Citizen's organizations and advisory groups aid in early detection of nuisance species infestations, and provide input relative to the most appropriate management techniques for specific water bodies.

More information on identification of invasive aquatic plants can be found at:

<http://plants.nrcs.usda.gov/gallery.html>

<http://plants.ifas.ufl.edu/seagrant/aquinv.html>



Participants at the Summer Stewardship workshop learned about the identification of invasive aquatic plants such as this Eurasian watermilfoil *Myriophyllum spicatum*. Line drawing: Britton, N.L., and A. Brown. 1913. Illustrated flora of the northern states and Canada. Vol. 2: 614. Courtesy of Kentucky Native Plant Society. NPDC @ PLANTS Database



UPCOMING EVENTS

Clean Rivers Program Middle and Lower Basin Steering Committee Meetings:

These meetings are open to the public and steering committee members to discuss water quality in the region and provide public input for the program. Check www.lcra.org/crp/index.html for the time and location. To find out more information or to RSVP, contact David Cowan at (512) 473-3200 or 1-800-776-5272, Ext. 2495

The 2006 303(d) list will be available for public review this summer. The public may provide input about any water body, impaired or not. <http://www.tceq.state.tx.us/compliance/monitoringwater/quality/data/wqm/mtr/swqm.html>

July 18, 2006

World Water Monitoring Day registration begins. If you participated in previous years, you may use your existing registration and password to enter your data anytime from September 18- October 18. If, however, you are new to CRWN, please visit the website at: www.worldwatermonitoringday.org

Special Project: Fish Tissue Analysis

by Kathleen Ligon, graduate intern
for Clean Rivers Program

The Texas Commission on Environmental Quality and Clean Rivers Program partners periodically target certain water bodies for detailed analysis of fish tissue and sediment.

In 2005, LCRA conducted such a study on fish tissue at two sites in the Colorado River basin: Lake Travis Pedernales River arm and the Colorado River at Webberville, downstream of Austin.

Some toxic substances are short-lived and break down quickly once released into the environment; other substances have the ability to persist for many years. Metals, pesticides and PCBs can be particularly harmful because they tend to accumulate in the food chain, reaching their greatest concentrations at the highest "trophic" levels - in humans, piscivores (fish that eat other fish), bald eagles and large wild-life species.

CLEAN RIVERS QUARTERLY

The purpose of the LCRA study was to determine if any of the sampled fish tissue contained concentrations of harmful constituents high enough to be a human health concern, and to compare results between sites upstream and downstream of the City of Austin. LCRA reported the study results to the Texas Commission on Environmental Quality (TCEQ) for future water quality assessments.

LCRA staff collected 24 edible-size game fish from the two sites and the samples were analyzed for 31 constituents by LCRA's Environmental Laboratory Services. Lab results yielded four constituents in detectable concentrations: mercury, the pesticide DDT, and two degradation products of DDT: DDE and DDD.

Mercury was detected in 18 of the 24 fish analyzed. All of the mercury concentrations were below the 0.7 milligrams per kilogram (mg/kg) Health Assessment Comparison screening value set by Texas Department of State Health Services (TDSHS). DDT, DDE or DDD were detected in 12 of the 24 fish analyzed, all from the Colorado River at Webberville site. None of the values exceeded the corresponding TDSHS Health Assessment Comparison screening values.

DDT, DDE or DDD were not found in measurable concentrations in any of the fish collected at the Lake Travis site. The remaining 27 constituents (2 metals and 25 organic compounds) were not found in measurable concentrations.

Since none of the constituents were of high enough concentration to cause public health or fish consumption concerns, LCRA has no plans to monitor fish tissue in the immediate future. (Note: The Texas Department of State Health Services is responsible for characterizing the risk of fish consumption and posting advisories or bans when appropriate.)

Results from this study can be viewed online at www.lcra.org/crp/crpreports.html.



In 2005, LCRA sampled fish tissue at two sites in the Colorado River basin: Lake Travis Pedernales River arm (12314) and the Colorado River at Webberville, downstream of Austin (12466).

Q and A:

Is it safe to swim?

by Jerry Guajardo, LCRA aquatic scientist

It's summer and time to cool off with a refreshing swim! But, is it safe to jump in the lake? LCRA water quality staff often receive calls about the safety of swimming in area waters.

Two typical swimming safety questions LCRA receives include:

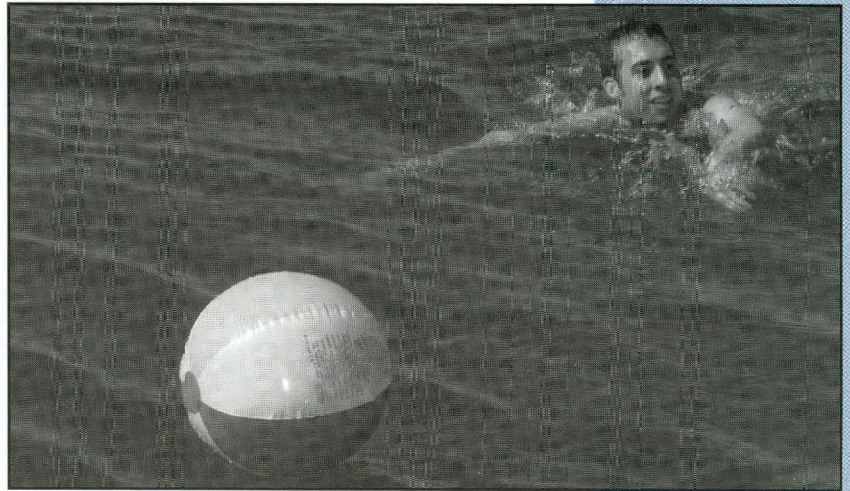
1. Is the lake or river safe to swim in?
2. After a storm, when is it safe for my family to go swimming?

Aside from drowning and physical dangers such as protruding rocks, swift currents, flooding, etc...the answers depend on *Escherichia coli* (*E.coli*) bacteria levels. *E.coli* is a bacteria species found in humans and warm blooded animals and an indicator of water contamination. When found in high numbers the chance of swimmers contracting an infection increases. LCRA staff and many CRWN volunteers routinely test for this organism.

1. *E.coli* testing of a water body will only reveal results that become available at a minimum of 18 hours after a sample has been collected. By the time lab results are known, conditions at the water body may have changed. Bacteria concentrations change very quickly.
2. Bacteria levels always increase after it rains. The bacteria left by animals washes in from the watershed. Bacteria numbers typically decrease quickly and are usually back to background levels when the water color and clarity is back to normal.

Symptoms of exposure to bacteria-contaminated water may include gastrointestinal symptoms, ear and other infections. The severity of illness due to exposure to contaminated water varies and is based on factors such as strength and duration of exposure, route of exposure and a person's susceptibility.

Any time you swim in a river, lake, pond or creek you assume a risk. Chlorine is added to swimming pools to kill microorganisms that can make swimmers sick, but there is always a chance that organisms in natural bodies of water can cause infection. In general, though, the water quality in the Colorado River watershed is typically fine for swimming.



Additional swimmer precautions include:

- Avoid areas of warm, stagnant water or very muddy waters.
- Though particularly difficult for children, try not to swallow water.
- Youngsters, too, may use nose plugs when diving to prevent water from entering the nose.
- Stay out of the water if you have open cuts or abrasions.
- Thoroughly wash hands prior to eating.
- Shower after swimming.
- Use over-the-counter antiseptic ear drops to help prevent ear infection.

There are many sources for additional information and one place to start is:

<http://www.cdc.gov/healthyswimming/>

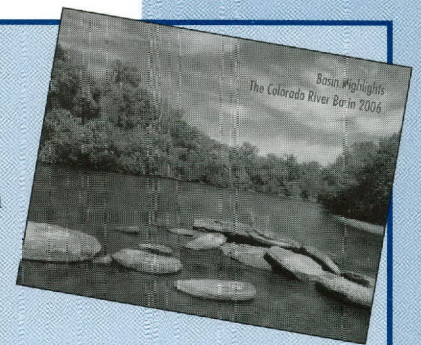
Water quality in the Colorado River watershed is typically fine for swimming, but anytime you swim in a river, lake, pond or creek you assume a risk.

HOT TOPIC

Hot Off the Press!

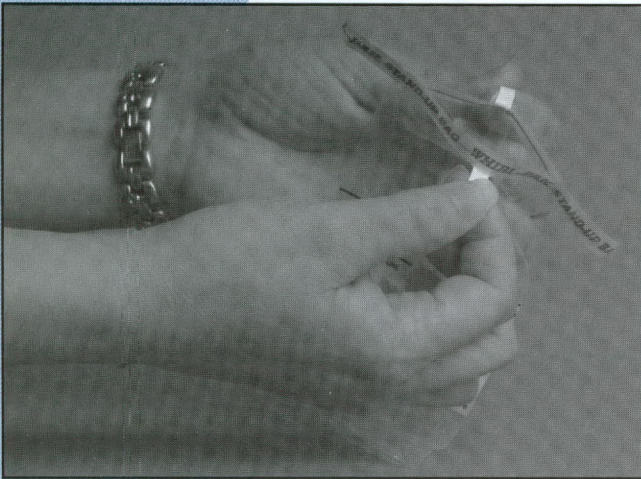
The 2006 Colorado River Basin Highlights Report is out. Produced annually by LCRA through the Texas Clean Rivers

Program, the report summarizes water quality data collected by Texas Clean Rivers Program during 2005, and special projects, outreach activities and other noteworthy items affecting water quality in the Colorado River basin that year. Hard copies of the report are included with this issue. The report will also be available at the LCRA Web site.



Whirl-Pak sampling for the E.coli test

TECHNICAL CORNER



Sterile whirl-pak bags are used to collect water samples for bacteria testing.

The sample bags used for this test have been sterilized. Therefore, it is important that you do not touch the inside of the bag. If you accidentally contaminate the sterile bag by touching the lip of the perforation or the inside of the container, discard the whirl-pak and resample.

Do Not rinse the Whirl-Pak bag with sample water!

1. Pull off the top of the Whirl-Pak using the perforated line. Do not touch the inside of the bag.
2. Gently pull the mouth of the bag apart with the white tabs, again making sure not to touch the top or the inside of the bag.
3. Face upstream or the direction from which the water flows. Collect your sample from a depth of one foot (if your sample site has less than two feet of water, collect your sample at the midpoint of the water column). Be careful not to disturb the substrate before or during sample collection.
4. With one swift motion, immerse the bag in the water, fill (leaving at least 1/2 inch air space at the top of the bag), draw out of the water, and quickly flip once or twice to secure. Twist the ties to close.

IMPORTANT NOTE

Water samples kept longer than one hour prior to plating should be kept on ice until plated (up to six hours). A Coliscan Easygel bottle that has had a sample placed into it for transport longer than 10 minutes should be kept on ice or in a refrigerator (up to two hours) until plated.

5. If you have another test site, be sure to clearly mark the name of each sample location.

Refer to pgs. 33-35 of the CRWN manual for information regarding plating, incubating and calculating.

Matagorda Bay Nature Park at the Texas Gulf Coast

Visit our new

- Coastal, wetland, marsh habitats
- Public beach, trails, piers, kayak tours
- 70-site RV park

Open summer 2006
www.lcra.org/parks
1-800-776-5272
Ext. 3366

LCRA
ENERGY • WATER • COMMUNITY SERVICES

Volunteer monitor does double duty

By Robin Berry, CRWN volunteer coordinator



MONITOR SPOTLIGHT

Alexander and Matias Pasch testing for conductivity on Shoal Creek. Both boys attended Zilker Elementary where their Dad, Chris Pasch, presented water quality demonstrations to over 200 students.

Monitoring since 2000, Chris Pasch brings both aspects of CRWN's goals to bear. As a volunteer monitor collecting and submitting data, Pasch fulfills the goal of serving as an early warning system for potential water quality threats. But, Pasch has taken it a step further by also providing water quality demonstrations, again as a volunteer, to elementary students.

Pasch, a professional water quality consultant, has conducted studies on the Frio, Nueces, and Trinity Rivers, Chocolate and Bastrop Bayou and numerous other rivers, creeks and lakes throughout Texas. He has assisted several River Authorities in the implementation of the Texas Clean Rivers Program and assisted municipalities with wastewater discharge permits and compliance issues.

Having spent considerable time reviewing many water quality databases, Pasch believes it's important to establish or continue a data record. "Long-term efforts provide by far the best understanding of a sampling site", he noted. Pasch also sees the value of providing water quality education to children.

"I believe one function for me is to make sure that a significant pollution event gets noticed."

Since 2000, he has hosted students from Zilker Elementary at his monitoring site on Shoal Creek and he has taken samples from there to the classroom, demonstrating the water quality tests and discussing their significance. Chris also supported and assisted students with science fair projects related to water quality. Pasch estimates that he has worked with over 200 students.

Pasch's volunteer monitoring site is at Shoal Creek below 34th street. He reports that fish have rarely been seen. And though he has occa-

sionally surveyed for benthic organisms in the riffles upstream, they have been difficult to find also.

Most of the year, there is very little flow. Recently, however, as part of the City of Austin's wastewater and storm water sewer improvements, a sewer line in the bottom of the creek has been sealed. In the normal low-flow condition, Pasch reported that water used to just percolate into the ground and there was typically no flow just downstream of his site. Now water flows readily downstream.



Colorado River Watch Network
P.O. Box 220 • Room L421
Austin, Texas 78767-0220

PRST STD
US POSTAGE
PAID
AUSTIN TX
02957

MONITOR ACTIVITY REPORT

Between Feb. 16, 2006, and May 15, 2006, the River Watch received 226 data sheets from 92 monitors. Thank you to these volunteers who submitted data during the quarter:

John Ahrns	Mike Claypool	Anne Keddy-Hector	Kristina Owen	Mary Carroll Traylor
Dawn Aschenbeck	Melissa Cole	Meredith Keelan	Chris Pasch	Amy Tschoerner
Ronnie Aschenbeck	Sam Crowther	Mike Kersey	Cathy Porter	Janet Uecker
Jeff Bauknecht	Douglas DeVidal	Sue Kersey	Jennifer Prihoda	John Van Ness
David Bennett	Dub Dietrich	Roger Kew	Heather Rein	Debbie Van Ryn
Landon Bippert	Mary Eastberg	Susan Kleinman	Betty Rodgers	Laura Varney
Larry Bippert	David Ferry	Linda Lowenthal	Jon Rodgers	Emily Walter
David Bogdanski	Shari Forbes	Russell Lueders	Diane Saltus	Edward Wells
Randi Born	Wayne Foster	Kathleen McCormack	Wendy Schrieber	Elisabeth Welsh
Steve Box	Lorenzo Garza	Judy McCoy	Winston Schroeder	Les White
Rusty Brandon	Laura Grulke	Joe Monahan	Geraldine Schwartz	Douglas Wierman
Peggy Breshers	Sherry Head	Gary Montgomery	Jeff Schwarz	Alexis Woffenden
Allison Bullington	Jeff Helser	Rode Mora	Charlene Sefcik	Robert Yantis
Jay Bullington	Michal Hubbard	Casey Mulcihy	Warren Sefcik	Sheryl Yantis
Greg Busselman	Steven Hubbell	Phyllis Muska	Sandy Shaw	Terry Young
Valerie Busselman	Vera Janes	Seay Nance	Leo Slaton	Shannon Zwahr
Dave Buzan	Donald Johnson	Diane Nousanen	Heidi Sosinski	
Heidi Carlin	Fay Jones	Charles O'Dell	Joanie Steinhaus	
Alvin Cearley	Pete Jones	Dan Opdyke	Kaycie Sullivan	

