



Earth Team Volunteer Newsletter

February 2009



*Tulsa County Conservation District
USDA Natural Resources Conservation Service
Tulsa County Blue Thumb*

Angler's Beware: Mercury Concentrations in Oklahoma Fish Are Causing Consumption Warnings

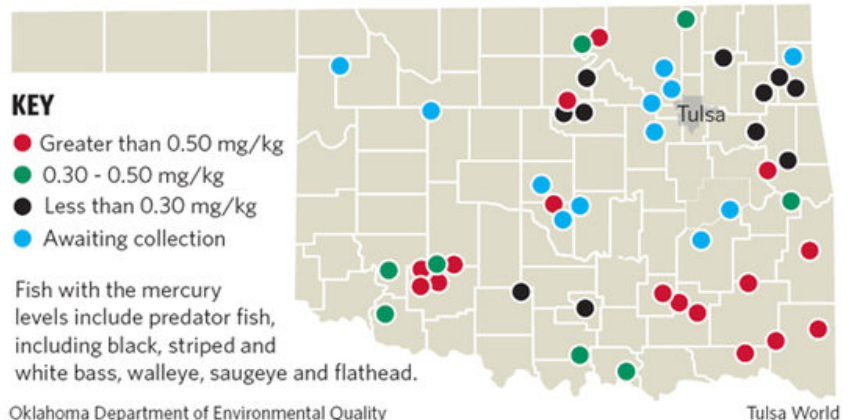
After a long day of fishing, it's easy to just clean and cook your catch, but you should first check and see if your catch is on the consumption warning list. The Department of Environmental Quality's latest data shows that 16 of 35 lakes surveyed have mercury concentration in fish tissue above .5mg/kg. The 0.5 mg/kg mercury concentration is the lowest level at which the state recommends sensitive populations (children younger than 15 and women of child-bearing age) eat no more than two servings of fish a month. A few of the lakes on the list include Broken Bow, Hugo, Pine Creek, Wister and McGee.

It's best to avoid any predator fish like black, striped and white bass, walleye, saugeye, and flathead since the top of the chain fish will contain the highest levels of mercury. Mercury is a neurotoxin that can have ill effects on the human brain, spinal cord, kidneys, lungs and liver. It can have devastating effects on fetal development and result in poor intellectual function in children. About 75% of mercury in fish comes from manmade sources such as coal-fired power plants, incinerators, mining and smelting.

Though mercury is only present in small amounts, it is absorbed by algae (generally as methylmercury). It is efficiently absorbed, but only very slowly excreted by organisms. Bioaccumulation and biomagnification result in buildup in the fatty tissue of successive trophic levels: zooplankton, small nekton, larger fish etc. Anything which eats these fish also consumes the higher level of mercury the fish have accumulated. This process explains why predatory fish such as swordfish and sharks or birds like osprey and eagles have higher concentrations of mercury in their tissue than could be accounted for by direct exposure alone.

Mercury in fish

The Oklahoma Department of Environmental Quality's study on mercury levels in fish shows several areas where fish were found to have concentrations of .5 mg. The state recommends that children younger than 15 and women of child-bearing age not eat such fish more than twice a month.



Mercury levels and eating fish

Less than 0.5 mg: No consumption restrictions

0.5-1.0 mg: Sensitive populations (children younger than 15 and women of child-bearing age) should have no more than two servings of fish a month; no restrictions for general population

1.0-1.5 mg: Sensitive persons should not have any fish; General population is limited to two servings a month

Greater than 1.5 mg: Not recommended for anyone.

Source: DEQ

First Graders at Walt Disney Elementary Learn About Water Pollution with the Sewer-In-A-Suitcase



Mrs. Phillips set up a sewer-in-a-suitcase presentation for all of the first graders at Walt Disney Elementary, one of the largest schools in the state. This presentation focuses on the effects of nonpoint source pollution on local water bodies like streams and creeks. The contaminants are visually represented with colored food dyes and, as it begins to rain, are washed into the creek. This turns the water in the creek the color of the various contaminants; red paint, orange pesticide, black oil, blue fertilizer, and green

antifreeze are used to represent these pollutants. This helps the kids to see that actions they take around their house and yard can ultimately impact the water bodies around them, even if they cannot see them.

Environmental Term for the Month

Land Ethic - A philosophy proposed by Aldo Leopold in which humans as part of nature have an ethical responsibility to preserve wild nature. After earning a master's degree from Yale University in Forestry, Leopold went on to found the profession of game management. Through his writings and teaching, he became one of the founding fathers of conservation and the environmental movement. His ideas are a main component of the environmental wisdom worldview.

“We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.”

“The land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it.”

“That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics.”

“There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace.”

Winter Macros Come to a Close

We have finished collecting the winter macroinvertebrates from creeks around the county. We sampled sites all over Tulsa and nearby counties including Haikey, Delaware, Flat Rock, Mooser, Mingo, Mill, Coal, Posey, Crow, Little Joe, Harlow, Ranch, Polecat, and Nickel Creeks. These collections give us an indication of the overall health of a particular body of water. You can tell a lot by not only the numbers of macros found but by the types living there. Certain species are considered tolerant. That means they can handle more pollution than non tolerant species can. In a healthy creek you will find tolerant species but you will also find a good number of intolerant species.

Macro collections are done twice a year. The samples that we collect in the winter and summer are sorted in our office a few months after the collection. We pick out between 100-120 bugs and then send these off to be identified. The species ID is then aggregated along with other data that Blue Thumb has to form metrics, which allows creeks to be compared to one another. The creeks are then given a letter grade – A, B, C, D, or F. In April or May, we will pick through the samples that we collected this winter. This is an activity that we always need help with.

The monitor teams for each creek are now working on a data interpretations for their site which will tell them what the data actually means in terms of their creek.

Thank you to all those people who braved the cold and came out to help - Kristin R, Matt G, Vernon S, Walt J, Owasso Envirothon Team, Nan R, Shelley U, Diane H, Tulsa Memorial Little Joe monitoring team, John B, Darren D, Dustin B, Sarah S, Joan G, Heather C, Kathryn S, Emily W, Steve S, and

Julie G.





Tulsa County Conservation District Green Tips

- Looking at building a new patio or walkway? Think about using permeable pavers. They allow water to soak into the ground, both recharging our groundwater and helping to control flooding.
- Wanting to start a garden? Think about building a rain garden. These shallow depression gardens are a place for water to collect and soak into the ground, helping to reduce your storm water impact. Check out the guide by University of Wisconsin Extension Service.
- Reduce, reuse, then recycle – in that order. To lessen your impact, first look to reduce the amount of goods you use and buy. Look for things with less packaging, or with individual portion control (i.e. Deli). Reuse anything you buy that you can find a use for. Once is not enough. Cereal boxes can be used for gift boxes, 2L bottles for used oil storage - get creative. Lastly recycle. If you have used it as many times as possible, then recycle it in the traditional sense. Bring it to a recycling facility to be recovered and used again.
- Buy local foods from farmers markets and local retailers. Read boxes to see where your food comes from and try to reduce your food miles - the distance your food travels from beginning to end.
- If you are painting your house, think about lighter colors. They will reflect more light and keep your house cooler in the summer months.
- Bring your own reusable shopping bags to cut down on waste.
- Get rid of that junk mail! Get on the National Do Not Mail list to keep from receiving those pesky mailers you throw away without reading.
- Most household cleaners can be made from a combination of water, vinegar, or baking soda. Look for a homemade cleaner recipe list online.



Calendar of Events

Tulsa Home and Garden Show

Info about homes and gardens abounds here
March 12th-15th
Tulsa State Fairgrounds

Going Green Kickoff

Saturday, March 21, 2009 1:00-4:00 p.m.
Herman & Kate Kaiser Library located inside
LaFortune Park (5202 S. Hudson Ave., Tulsa)

Conservation Day at the Capitol

Day to meet with legislators to tell them about
conservation issues in OK
March 25th 9 AM – 2 PM

Resource Management Conference

Come hear presentations about green topics
including recycled building supplies, low im-
pact development, and green development
April 1st 8 AM—4 PM
Tulsa Home Builders Assc.
11545 E 43rd St Tulsa, OK 74146

Earthfest at the Tulsa Zoo

We will be making fish prints
April 18th 9 AM—5 PM
Tulsa Zoo and Living Museum

Tulsa County Free Fair

Join 4-H for this free fair in the summer
July 22-24
Tulsa State Fairgrounds

15th Annual Creek Clean Up and Water Festival

The morning will begin with a run followed
by a creek cleanup. Then a fair-like water fes-
tival with food vendors, a kids zone, an art
show, earth friendly products and much more.
September 12th
Tulsa Riverparks from 21st to 41st
Tentatively scheduled from 7 AM—7 PM

Blue Thumb Training

Become a certified Blue Thumb monitor
September 26th-27th
TCCD Offices
5401 S Sheridan Tulsa, OK 74135

“I recognize the right and duty of this generation to de-
velop and use our natural resources, but I do not recog-
nize the right to waste them, or to rob by wasteful use,
the generations that come after us.”

-Theodore Roosevelt

“Thank God they cannot cut down the clouds!”

-Henry David Thoreau

“When we try to pick out anything by itself, we find it
hitched to everything else in the universe.”

-John Muir

“If there is magic on this planet, it is contained in water.”

-Loren Eiseley

“Civilization exists by geological consent, subject to
change without notice.”

-Will Durant

“It is not until the well runs dry that we know the worth of water.”

-Benjamin Franklin

“In our every deliberation, we must consider the impact of our de-
cisions on the next seven generation.”

-Iroquis Confederation, 18th Century

“Today everybody is downwind or downstream from somebody
else.”

-William Ruckelshaus

“ We cannot survive without the oceans... but they can do just fine
without us.”

- Roger Rosenblatt

CALLING ALL VOLUNTEERS!!!!

**Are you interested in being on a specialized planning commit-
tee? We need help with the 2009 Water Festival sub-
committees. We have Events, Media, Finance, and Volunteer
Manpower committees that need your help. We also need vol-
unteers to work at the 2009 Home and Garden Show AND
THE Free Fair. Please let us know if you are interested. WE
NEED YOUR HELP!!!**

The Earth Team Newsletter Blue Thumb Prints is published by Tulsa County Conservation District, 5401 S. Sheridan Rd., Suite 201, Tulsa, OK, Phone: (918) 280-1595. Tulsaccd@conservation.ok.gov Tulsa County Conservation District and USDA Natural Resources Conservation Service are equal opportunity providers and employers. Visit the web site at www.tulsacountyconservationdistrict.org