

Questions and Answers Concerning the Fish Advisory for Tonto Creek

1. What is the fish advisory at Tonto Creek?

The Arizona Department of Environmental Quality (ADEQ), the Arizona Game and Fish Department (AGFD) and the Arizona Department of Health Services (ADHS) are advising the public not to consume smallmouth bass, green sunfish and black bullhead catfish from Tonto Creek below the northern Hellsgate Wilderness boundary near Bear Flat campground, east of Payson, due to mercury contamination. Common carp from this stretch of stream should only be consumed at the advised rates. This advisory does not limit the consumption of trout or the recreational use of Tonto Creek for fishing, bird watching, swimming or other types of recreational uses

2. Where is this fish consumption advisory in effect?

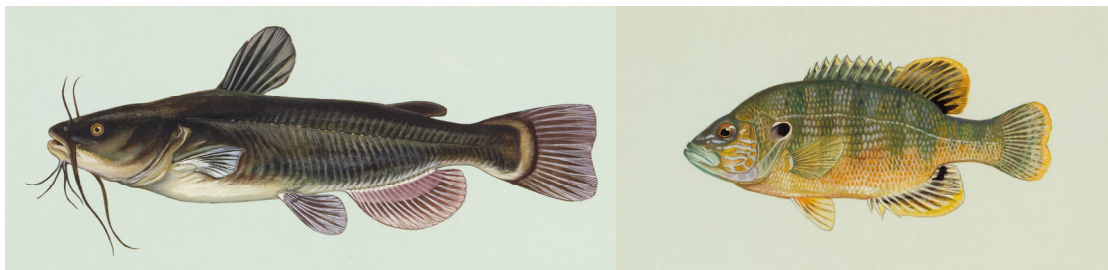
This fish consumption advisory applies only to Tonto Creek below the northern wilderness boundary near Bear Flat. This stretch runs between the Bear Flat campground, east of Payson (34.28286° N, 111.107110° W), to the confluence of Tonto Creek with Roosevelt Lake.

3. How did the fish consumption advisory for Tonto Creek come about?

Mercury was detected at elevated concentrations in fish taken from this stretch of Tonto Creek as a part of a study conducted by ADEQ and AGFD. The State standard for methylmercury in fish tissue of 0.3 milligrams per kilogram (mg/kg) was exceeded in five fish species and a maximum concentration of 3.0 mg/kg was measured in smallmouth bass (see below) caught from Tonto Creek. On the strength of these data, a fish consumption advisory has been issued jointly by AGFD and ADEQ.



Smallmouth bass



Black Bullhead

Green Sunfish

4. Why is mercury considered harmful?

Mercury is a liquid metal that when consumed by living organisms is transformed to methylmercury (or "organic" mercury). While methylmercury has been linked to a variety of health effects, the primary basis for this fish advisory is its toxicity to the nervous system, including the brain. Most at risk are babies and unborn children whose mothers consume fish containing mercury prior to or during pregnancy, or while nursing. Exposure to mercury at elevated concentrations can delay walking and talking and cause learning disabilities in children. If you have questions about eating fish during pregnancy or while nursing, please contact your health care provider. Additional information on this subject can be found at:

<http://www.epa.gov/waterscience/criteria/methylmercury/factsheet.html>

<http://www.atsdr.cdc.gov/toxprofiles/tp46.html>

<http://www.fda.gov/food/foodsafety/product-specificinformation/seafood/foodbornepathogenscontaminants/methylmercury/ucm115662.htm>

5. I've eaten fish from Tonto Creek in the past, am I OK?

The process for calculating risks from exposure to mercury is very conservative. Methylmercury will naturally leave your body over time once exposure has stopped. This process occurs at a rate of roughly one half of the total amount in your body about every two months. The most prevalent fish consumed from Tonto Creek, rainbow or brown trout, accumulate mercury very slowly and did not show contamination above the state tissue standard for mercury. If you have any questions about risks from mercury you may have consumed in the past, please contact your health care provider.

6. Where did the mercury come from?

Mercury occurs naturally in the environment and is found in small concentrations in Arizona soils. Cinnabar, a natural solid form of mercury, occurs as reddish veins in or near recent volcanic rocks, like those found throughout Arizona. Seven of Arizona's 15 counties contain significant deposits of cinnabar with historic mining and exploration for the metal occurring in several areas, including Maricopa and Gila counties. Mercury has also been used in many industrial and agricultural applications, placer mining and has been associated with some smokestack emissions. Mercury can enter lakes and streams from any of these sources and it only takes an extremely small amount of mercury to build up over time and contaminate an entire water body.

7. How did the mercury build up in the fish?

Once mercury has entered a lake or stream, it is readily taken up by bacteria found in sediments. Mercury can then build up in tissues of insects as they graze on this bacteria and when these insects are eaten by predators and these predators are, in turn, eaten by even larger predators, the mercury concentration increases every step, all the way up the "food chain" to "top predators" such as the largemouth bass. Concentrations of mercury in large, older fish can be many times those found in the insects at the bottom of the food chain.

8. Is it safe to fish in Tonto Creek?

Yes! Recreational fishing should not be affected by this advisory. It is safe for people of any age to handle fish in catch and release situations and as stated above, contact with the water should not pose a risk. Trout caught from Tonto Creek can be consumed at an unlimited rate and are a good source of low fat protein.

9. Is it safe to swim in Tonto Creek?

Yes! While mercury has been detected in water samples taken from Tonto Creek, it has always been at extremely low (parts per trillion) concentrations. Once mercury enters an aquatic ecosystem such as a lake or stream, it is quickly accumulated in the muscle tissue of living organisms such as aquatic insects and fish where it primarily remains, moving from organism to organism. Thus, in aquatic ecosystems, the vast majority of the mercury is most likely contained in the organisms inhabiting that system, leaving only very small amounts in the water. Swimming or taking part in other recreation in and around the water does not present a human health hazard due to mercury.

10. Is this just an Arizona problem?

Public consumption advisories regarding mercury are common throughout the United States and Canada. All 50 states have issued mercury advisories as of this date. Arizona currently has 11 waterbodies with mercury advisories. Also, in January 2001, the U.S. Environmental Protection Agency and the Food and Drug Administration jointly issued a fish advisory covering both commercially and recreationally caught fish, advising women who are pregnant or who may become pregnant, to limit consumption of all fish to one eight ounce fillet per week. More information, and the text of this advisory can be found at:

<http://www.epa.gov/waterscience/fish/advice/>

For more information on other fish consumption advisories in Arizona, please see:

<http://www.azdeq.gov/enviro/water/assessment/download/fish-0711.pdf>

http://www.gf.state.az.us/h_f/fish_consumption.shtml