Mercury In Fish:
Health Advice on Eating Fish

What's important is how much Largemouth Bass and other mercury-contaminated fish you eat, not whether you eat Largemouth Bass from lakes on Fort Gordon. Because developing fetuses are especially sensitive to the toxic effects of methylmercury, pregnant women and women of childbearing years should watch their diet carefully. According to the results of the U.S. Geological Survey study of lakes and streams on Fort Gordon, the average amount of mercury in Lakes on Fort Gordon Largemouth Bass (approximately 0.6 parts per million) does not exceed federally allowed levels. Similar studies have been performed in the Central Savannah River Area and demonstrate that it is a regional problem not just isolated to lakes on Fort Gordon. However, these levels were set assuming people eat only a small amount of contaminated fish. If you eat large amounts of Largemouth Bass frequently, you may be at risk of adverse health effects because the hazard of methylmercury depends on the amount you eat, how often you eat it, and your health. The Georgia Department of Natural Resources (DNR) has issued Fish Consumption Advisories for Richmond County and Columbia County for Largemouth Bass consumption due to mercury levels. The Fort Gordon Environmental and Natural Resources Management Office (ENRMO) has prepared this advisory to follow the guidelines established by the Georgia DNR, which are based on an evaluation of methylmercury toxicity by the U.S. Environmental Protection Agency.

Recommended Maximum Consumption of Largemouth Bass from Lakes on Fort Gordon

GA DNR Restrictions 1 Meal per Week for Largemouth Bass

One meal is assumed to range form ¼ to ½ pound of fish (4-8 ounces) for a person of 150 pounds. Subtract or add 1 ounce of fish to the range of 20 pounds of body weight. For example, one meal is assumed to be 3-7 ounces for 130 pound person and 5-9 ounces for a 170 pound person.

How can I reduce my risk?

Because methylmercury is distributed throughout the tissues of a fish, it cannot be removed by special cooking or trimming methods. *Reducing the amount of contaminated fish you eat is the only sure way to reduce exposure to methylmercury in fish.* However, eating smaller fish and eating a variety of species will likely help reduce exposure.

Health Benefits of Eating Fish

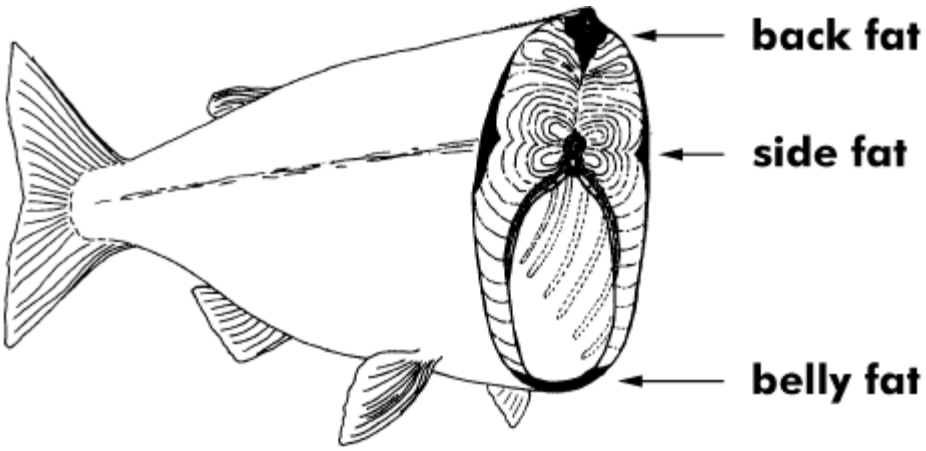
While fish from a few locations on Fort Gordon may not be safe to eat routinely or in large amounts, especially by women who are pregnant, are nursing, or are thinking of becoming pregnant, fish from most locations are safe to eat and are considered an important part of a healthy diet.

Health benefits of eating fish:

- Fish are a good source of protein and are low in saturated fats,
- Fish contain beneficial oils called omega-3 polyunsaturated fatty acids, which help reduce cholesterol levels,
- Fish are leaner than most other animal protein sources. Oils in fish can help to prevent coronary artery disease. The American Heart Association recommends eating two to three fish meals a week, and
- As a part of a healthy diet, fish consumption can help to reduce elevated blood pressure.

Cooking and Cleaning Fish

Proper cooking and cleaning can further reduce your exposure to contaminants, especially organic chemicals, which may be in fish.



General recommendations for reducing your exposure to contaminants in fish include:

1. Consume younger, smaller fish (within legal limits). They usually contain fewer pollutants than older, larger fish.
2. Avoid eating bottom fish such as catfish, carp, or sucker. They feed at the bottom of water bodies and are more likely to contain higher levels of chemical contamination.
3. When you clean fish, remove the skin, fat, and internal organs before you cook it, to reduce the amount of some pollutants.
4. Grill, bake, or broil fish so that the fat drips off while cooking.
5. Remember that fresh meat should always be handled properly. To prevent the growth of bacteria or viruses, keep freshly caught fish on ice and out of direct sunlight.

Why worry about mercury?

Mercury, a metal like lead or tin, comes from many natural sources, such as oceans, volcanoes, and the weathering of rock in mountains. Human activities like burning fossil fuels and discharging industrial waste into the air and water also add mercury to the air we breathe, the water we drink, and the food we eat. We all have mercury in our bodies, but at levels that are typically not high enough to cause health concerns. It is possible, however, to accumulate too much mercury in the body. *The greatest source of mercury for most people is the fish they eat.* Most mercury in fish is **methylmercury**, a highly toxic substance that can build up in predatory

fish such as Largemouth Bass, swordfish, and tuna, and in animals that eat these fish. Methylmercury can damage the brain, nervous system, and kidneys. The risk is probably very low for adults who eat fish only occasionally. The risk is greatest for developing fetuses, children, and people who depend on sport fish for food. Mercury also threatens the health of fish-eating wildlife such as loons, eagles, otters, and raccoons. Some evidence suggests that at very high concentrations it harms the fish themselves.

It's the amount that counts

Your health risk depends on your age, weight, and health, in combination with

- how much fish you eat,
- how often you eat fish, and
- how much mercury is in the fish.

Why were fish from Lakes on Fort Gordon tested for mercury?

All waterbodies contain some mercury. The Environmental and Natural Resources Management Office was concerned about fish from lakes on Fort Gordon because it's a popular fishing area and because

- studies found that sediment and some fish in Lakes on Fort Gordon were contaminated with mercury.
- Mercury has become a regional issue for the Savannah River Basin.

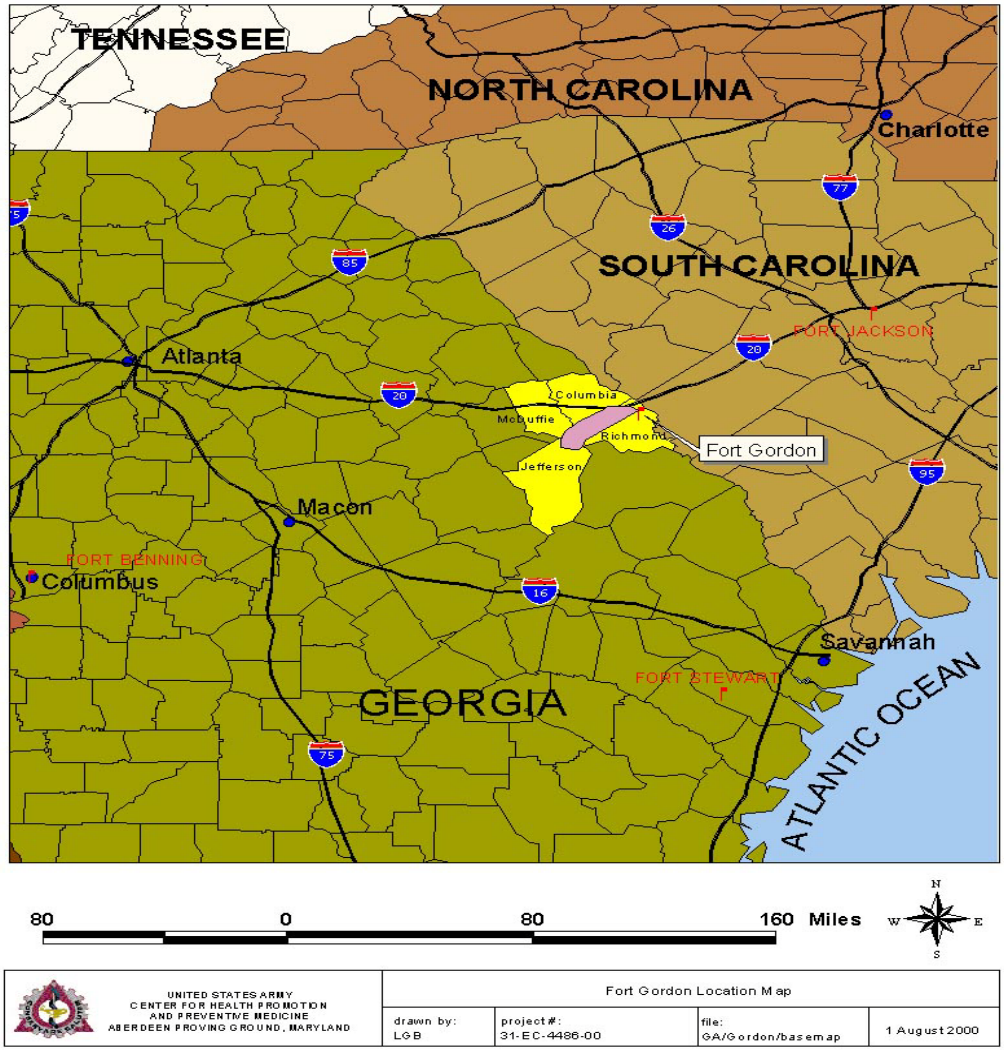
Why focus on Largemouth Bass?

- They're one of the most popular catches at Lakes on Fort Gordon.
- Adult Largemouth Bass are top-level predators, feeding on other fish, and thus are likely to be more contaminated than their prey because methylmercury *bioaccumulates* (is accumulated within organisms faster than it's eliminated) and *biomagnifies* (increases in concentration as it travels up the food chain).

Study of Fort Gordon

The U. S. Geological Survey (USGS) and ENRMO tested Largemouth Bass and other fish from lakes on Fort Gordon.

Findings

- Largemouth Bass had concentrations of mercury consistent with other studies performed in the Savannah River Basin..
- Larger Largemouth Bass had higher mercury concentrations than smaller Largemouth Bass.
- Mercury concentrations in Largemouth Bass fillets ranged from 0.11 to 1.3 parts per million (ppm).

Regional Map of Fort Gordon and Surrounding Counties