



Anglers: What You Need to Know about Mercury & Fish

A FACTSHEET OF THE NATIONAL WILDLIFE FEDERATION'S CLEAN THE RAIN CAMPAIGN



As outdoor enthusiasts, we place great value in clean water, clean air, and an environment safe for wildlife. Unfortunately, many of our favorite fishing spots have been harmed by a pervasive environmental pollutant: mercury.

What is Mercury, and Where Does it Come From?

Mercury is a naturally occurring, toxic heavy metal. However, human activity has significantly increased mercury levels in the environment over the past several centuries. Coal-burning power plants, waste incinerators that burn mercury-containing products, and chlorine manufacturers are the major sources of mercury emissions in the U.S. All of these sources - except power plants - are regulated under the Clean Air Act.

Why is Mercury a Problem?

Once emitted to the air, mercury falls to the earth and accumulates in the tissues of people and wildlife. This process begins in lakes and wetlands, where mercury is transformed into methylmercury - a highly toxic form that is taken up by small aquatic organisms. Mercury then increases in concentration with each step up the food chain.

As a result, large predator fish such as walleye and trout can have mercury levels over one million times that of the surrounding water. In turn,

people who consume fish with high mercury levels are at risk of serious health problems.

Mercury exposure can harm the function and development of the central nervous system. Of greatest concern is exposure to unborn and young children. Health effects linked to prenatal and childhood methylmercury exposure include problems with language, memory, attention, and visual skills. Impacts on blood pressure have also been observed, as well as increased risks

of heart disease in middle-age men.

In the U.S., one in 12 women of childbearing age (15-44) has blood mercury levels that exceed those considered safe by the U.S. EPA for a developing baby. This amounts to approximately 320,000 babies born every year at risk of developmental problems because of prenatal mercury exposure.

Mercury can affect the health and populations of fish and wildlife as well, as it harms their central nervous and reproductive systems. Species at risk from mercury pollution include fish-eating birds and mammals. In addition, predatory fish such as walleye are susceptible to adverse reproductive effects from elevated mercury levels.



How Widespread is the Mercury Problem?

As of early 2003, 44 U.S. states and territories had issued fish consumption advisories for one or more species fish because of mercury contamination:



▶ 19 states have issued statewide advisories for mercury in freshwater lakes and/or rivers.

▶ 11 states have statewide advisories for mercury in their coastal waters

Mercury is by far the most common pollutant triggering fish consumption advisories in the U.S., and the scope of these advisories has been increasing in recent years. In fact, the number of mercury advisories has increased 138 percent from 1993 – 2002. In 2002, mercury advisories covered over 12 million lake acres and 470,000 river miles. Table 2 (on the last page) displays this information by state.

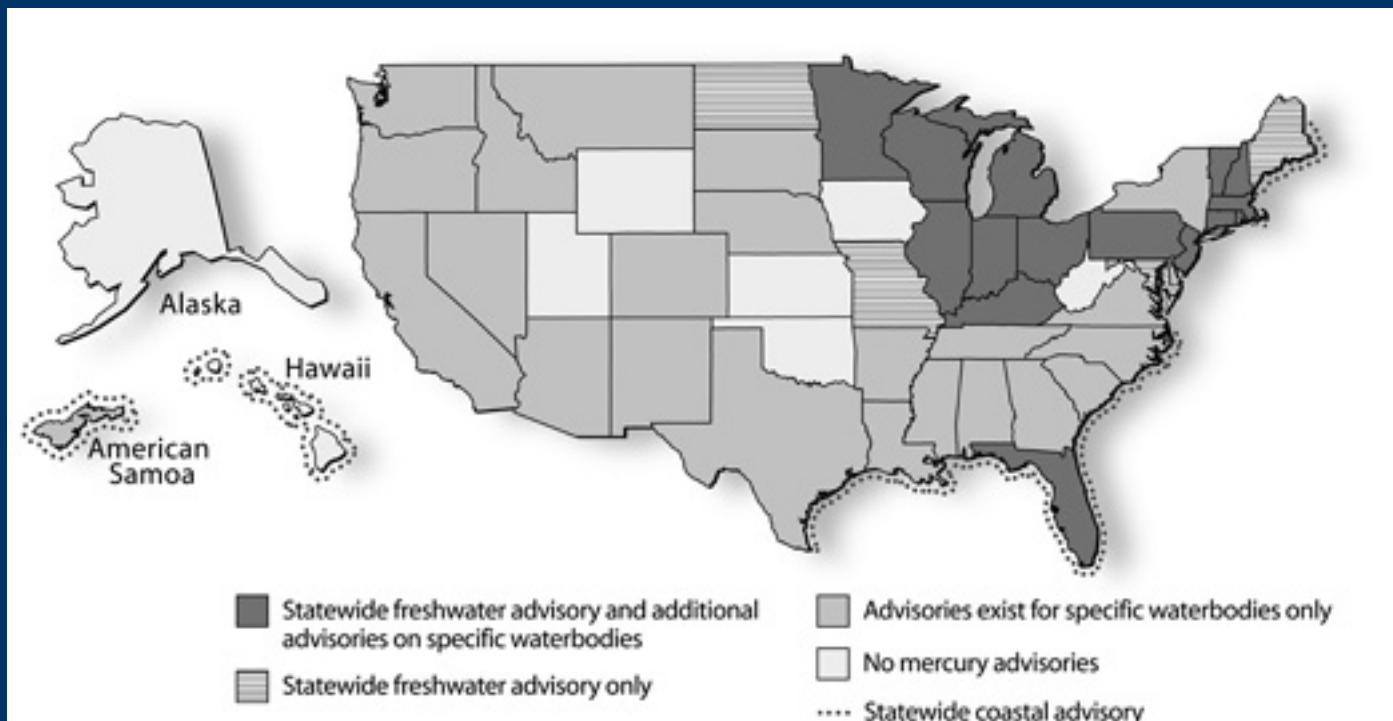
Mercury has also contaminated marine fish and commercial fish. Taking into account consumption of a variety of fish, EPA has recommended specific limits for women and children. (See table 1)

**Table 1:
EPA General
Recommendations on Total
Fish Consumption for
Women of Childbearing Age
and Young Children**

	Fish Type	Maximum Number of Ounces Per Week
Adult	Uncooked	8
	Cooked	6
Child	Uncooked	3
	Cooked	2

To reduce the risk of mercury exposure, all anglers should check current advisory information with the state departments of health before consuming any fish caught in U.S. waters.

Fish Advisories in the United States



Sportfishing: An Industry That Depends on Safe Fish

Sportfishing is not just a recreational pastime. It is also a major contributor to our local and national economy. In fact, more people fished last year than played golf and tennis combined.

In 2001, the estimated 34 million people who fished in the U.S. generated nearly \$36 billion in revenue. Table 3 (on the last page) shows the specific impact this activity has in each state.

The Solution: How Can We Protect People and Wildlife from Mercury Pollution?

Specific steps can be taken at the local, state, and federal level to eliminate mercury pollution at the source.

► Eliminate or greatly reduce industrial mercury emissions. Some industrial sources, such as chlorine

Monitoring is Inconsistent Between States

Mercury fish contamination is monitored by state and tribal environmental agencies. While there are federal guidelines on testing fish and developing advisories, there are no mandatory requirements for either. Because of that, mercury monitoring and advisory programs can vary significantly between states. The lack of advisories (or a small number) in a given state does not necessarily indicate the absence of a mercury problem.

manufacturers or waste incinerators, can virtually eliminate their mercury emissions by either switching to mercury-free processes or removing mercury from the incinerator feedstock. For other sources, such as coal-fired power plants, stringent emission limits must be set using existing authority under the Clean Air Act, or other legislation that would achieve reductions at a comparable level and timeframe.



► End the manufacture and use of mercury-containing products. Legislation should be passed at the federal, state, and local level to phase out the sale of mercury-containing products, institute mercury-free purchasing, and mandate manufacturer take-back for products that are still on the market and in use.

► Promote safe disposal of mercury waste. Mercury is found in dozens of household, business and industrial products. To prevent haphazard disposal of these products, resources need to be allocated to communities for comprehensive mercury collection and recycling facilities.

► Enact water quality standards that are consistent and protective of people and wildlife. Mercury monitoring and the process that results in fish consumption advisories needs to be improved in order to more effectively reduce the public's exposure to mercury as well as offer adequate protection to wildlife.



Fish Advisories Unknown to Many Anglers

While consumption advisories are issued by health departments to protect the population from fish contaminants, research indicates that understanding of and compliance with advisories has been far from perfect. Research in the Great Lakes in the mid-1990s found that only 50 percent of Great Lakes sport fish consumers were aware of fish advisories – the figure was only 39 percent for women. Among non-whites, the figure dropped to 22 percent. A study along the Savannah River (contaminated with mercury and radionuclides) found that 82 percent of the anglers thought the fish were safe to eat, even though 62 percent had heard of warnings about fish contaminants. These and other studies indicate the need for health departments to make greater efforts to reach both anglers and the general population about the importance of following fish consumption advisories.



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Table 2.
**Number of Mercury Advisories,
 Total Lake Acres, and Total River Miles Under
 Mercury Advisory in 2002.**

State	Number of Advisories	Total Lake Acres	Total River Miles
Alabama	11	6	126
Alaska	0	-	-
Arizona	5	140	-
Arkansas	20	3,659	260
California	13	64,024	40
Colorado	8	17,258	-
Connecticut	11	Statewide	Statewide
Delaware	5	81	-
D.C.	0	-	-
Florida	65	Statewide	Statewide
Georgia	122	25,866	2,209
Hawaii	0	-	-
Idaho	4	17,983	Unknown
Illinois	4	Statewide	Statewide
Indiana	155	47,806	Statewide
Iowa	0	-	-
Kansas	0	-	-
Kentucky	2	Statewide	Statewide
Louisiana	29	19,166	471
Maine	4	Statewide	Statewide
Maryland	2	Statewide	Statewide
Massachusetts	99	Statewide	Statewide
Michigan	85	Statewide	508
Minnesota	984	Statewide	4,143
Mississippi	11	15,371	228
Missouri	1	Statewide	Statewide
Montana	25	638,440	34
Nebraska	17	3,349	62
Nevada	2	23	549
New Hampshire	7	Statewide	Statewide
New Jersey	86	Statewide	Statewide
New Mexico	26	29,519	93
New York	32	59,228	Unknown
North Carolina	2	-	-
North Dakota	1	Statewide	Statewide
Ohio	35	Statewide	Statewide
Oklahoma	0	-	-
Oregon	12	16,058	460
Pennsylvania	76	Statewide	Statewide
Rhode Island	7	Statewide	Statewide
South Carolina	62	10,000	-
South Dakota	2	45,804	1,683
Tennessee	2	6	-
Texas	13	329,784	2
Utah	0	-	-
Vermont	9	Statewide	Statewide
Virginia	3	183	-
Washington	3	2,193	-
West Virginia	1	310	-
Wisconsin	85	Statewide	192
Wyoming	0	-	-

Source: U.S. Public Interest Research Group, *Fishing for Trouble*, June 2003. (States with no mercury advisories added to original data).

Table 3.
**Number of Anglers and Total Expenditures For
 Fishing by State Where Fishing Took Place (2001)**

State	Number of Anglers			Total Expenditures
	Total	Resident	Nonresident*	
Alabama	851,000	610,000	241,000	\$ 723,467,000
Alaska	421,000	183,000	239,000	\$ 537,355,000
Arizona	419,000	351,000	68,000	\$ 336,293,000
Arkansas	782,000	543,000	239,000	\$ 445,778,000
California	2,444,000	2,288,000	156,000	\$ 2,029,581,000
Colorado	917,000	560,000	357,000	\$ 645,891,000
Connecticut	346,000	271,000	75,000	\$ 224,139,000
Delaware	148,000	71,000	78,000	\$ 69,956,000
Florida	3,104,000	2,057,000	1,047,000	\$ 4,083,409,000
Georgia	1,086,000	947,000	139,000	\$ 543,504,000
Hawaii	150,000	109,000	41,000	\$ 107,002,000
Idaho	416,000	251,000	165,000	\$ 310,872,000
Illinois	1,237,000	1,157,000	80,000	\$ 598,376,000
Indiana	874,000	784,000	90,000	\$ 518,863,000
Iowa	542,000	471,000	70,000	\$ 335,878,000
Kansas	404,000	357,000	47,000	\$ 192,629,000
Kentucky	780,000	590,000	190,000	\$ 544,660,000
Louisiana	970,000	753,000	217,000	\$ 703,373,000
Maine	376,000	212,000	165,000	\$ 250,939,000
Maryland	701,000	457,000	243,000	\$ 480,185,000
Massachusetts	615,000	425,000	191,000	\$ 464,991,000
Michigan	1,354,000	1,002,000	352,000	\$ 838,558,000
Minnesota	1,624,000	1,293,000	331,000	\$ 1,284,522,000
Mississippi	586,000	450,000	136,000	\$ 210,697,000
Missouri	1,215,000	942,000	272,000	\$ 745,514,000
Montana	349,000	212,000	138,000	\$ 292,050,000
Nebraska	296,000	241,000	55,000	\$ 146,359,000
Nevada	172,000	119,000	53,000	\$ 216,721,000
New Hampshire	267,000	147,000	119,000	\$ 164,634,000
New Jersey	806,000	531,000	275,000	\$ 699,826,000
New Mexico	314,000	197,000	116,000	\$ 176,476,000
New York	1,550,000	1,243,000	307,000	\$ 1,073,019,000
North Carolina	1,287,000	831,000	456,000	\$ 1,118,028,000
North Dakota	179,000	119,000	59,000	\$ 159,023,000
Ohio	1,371,000	1,225,000	146,000	\$ 761,619,000
Oklahoma	774,000	648,000	126,000	\$ 476,019,000
Oregon	687,000	513,000	174,000	\$ 601,780,000
Pennsylvania	1,266,000	1,032,000	234,000	\$ 580,351,000
Rhode Island	179,000	86,000	93,000	\$ 105,649,000
South Carolina	812,000	571,000	241,000	\$ 558,731,000
South Dakota	214,000	140,000	75,000	\$ 182,480,000
Tennessee	903,000	709,000	194,000	\$ 480,221,000
Texas	2,372,000	2,151,000	221,000	\$ 1,950,902,000
Utah	517,000	388,000	129,000	\$ 392,617,000
Vermont	171,000	96,000	75,000	\$ 92,536,000
Virginia	1,010,000	761,000	248,000	\$ 517,802,000
Washington	938,000	808,000	130,000	\$ 853,761,000
West Virginia	318,000	250,000	67,000	\$ 102,281,000
Wisconsin	1,412,000	941,000	471,000	\$ 1,005,149,000
Wyoming	293,000	117,000	176,000	\$ 211,530,000
U.S. Total**	34,071,000	31,218,000	7,880,000	\$ 35,632,257,000

Source: U.S. Fish and Wildlife Service, 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, October 2002.

*: For Delaware, Hawaii, Kansas, Nevada, New Mexico, North Dakota, and West Virginia, the estimate of nonresident anglers was based on a small sample size, according to FWS. **: Total of detailed number of anglers does not add to total number of anglers because of multiple responses, according to FWS.

