

Update: Listing of Fish and Wildlife Advisories

Summary

The 1996 update for the database, *Listing of Fish and Wildlife Advisories (LFWA)*, is now available from the U.S. Environmental Protection Agency (EPA). This database includes all available information describing state-, tribal-, and federally issued fish consumption advisories in the United States for the 50 States, the District of Columbia, and four U.S. Territories, and has been expanded to include the 12 Canadian provinces and territories. The database contains information provided to EPA by the states, tribes, and Canada as of December 1996. This includes advisories issued by several Native American tribes. The number of advisories in the U.S. rose by 453 in 1996 to a total of 2,193, representing a 26% increase over 1995. The number of waterbodies under advisory represents 15% of the Nation's total lake acres and 5% of the Nation's total river miles. In addition, 100% of the Great Lakes waters and their connecting waters and a large portion of the Nation's coastal waters are also under advisory. The number of advisories in the U.S. increased for four major contaminants (mercury, PCBs, chlordane, and DDT).

In 1996, the U.S. EPA contacted health officials in Canada in an effort to identify fish consumption advisories in effect. In Canada, a total of 2,617 advisories were in effect in 1996. All of the Canadian advisories resulted from contamination from five pollutants: mercury, PCBs, dioxin/furans, toxaphene, and mirex. Ninety-six percent of all the advisories resulted from mercury contamination in fish tissues. In addition, 87% of the advisories were issued by the provinces of Ontario and Quebec.

Background

The states and the four U.S. Territories and Native American tribes (hereafter referred to as states) have primary responsibility for protecting their residents from the health risks of consuming contaminated noncommercially caught fish and wildlife. They do this by issuing consumption advisories for the general population, including recreational and subsistence fishers, as well as for sensitive subpopulations (such as pregnant women, nursing mothers, and children). These advisories inform the public that high concentrations of chemical contaminants (e.g., mercury and dioxins) have been found in local fish and wildlife. The advisories include recommendations to limit or avoid consumption of certain fish and wildlife species from specific waterbodies or, in some cases, from specific waterbody types (e.g., all lakes). Similarly, in Canada, the provinces and territories have primary responsibility for issuing fish consumption advisories.

States typically issue five major types of advisories and bans to protect both the general population and specific

subpopulations (usually pregnant women, nursing mothers, and young children). When levels of chemical contamination pose a health risk to the general public, states may issue a no consumption advisory for the general population (NCGP). When contaminant levels pose a health risk to sensitive subpopulations, states may issue a no consumption advisory for the sensitive subpopulation (NCSP). In waterbodies where chemical contamination is less severe, states may issue an advisory recommending that either the general population (RGP) or a sensitive subpopulation (RSP) restrict their consumption of specific species for which the advisory is issued. The fifth type of state-issued advisory is the commercial fishing ban (CFB), which prohibits the commercial harvest and sale of fish, shellfish, and/or wildlife species from a designated waterbody and, by inference, the consumption of all species identified in the fishing ban from that waterbody. As shown in Table 1, all types of advisories increased in number from 1993 to 1996.

Table 1. U.S. Advisories Issued from 1993 to 1996 by Type

	1993	1994	1995	1996
No Consumption – General Population	503	462	463	563
No Consumption – Sensitive Subpopulation	555	720	778	1,022
Restricted Consumption – General Population	993	1,182	1,372	1,763
Restricted Consumption – Sensitive Subpopulation	689	900	1,042	1,370
Commercial Fishing Ban	30	30	55	50

Advisories in Effect

The database includes information on

- Species and size range of fish and/or wildlife
- Chemical contaminants identified in the advisory
- Geographic location of each advisory (including landmarks, river miles, or latitude and longitude coordinates of the affected waterbody)
- Lake acreage or river miles under advisory
- Date the advisory was issued
- Percentage of waters assessed by states for fish advisories.

The 1994, 1995, and the new 1996 versions of the LFWA database can generate national, regional, and state maps that illustrate any combination of these advisory parameters. In addition, the 1996 database

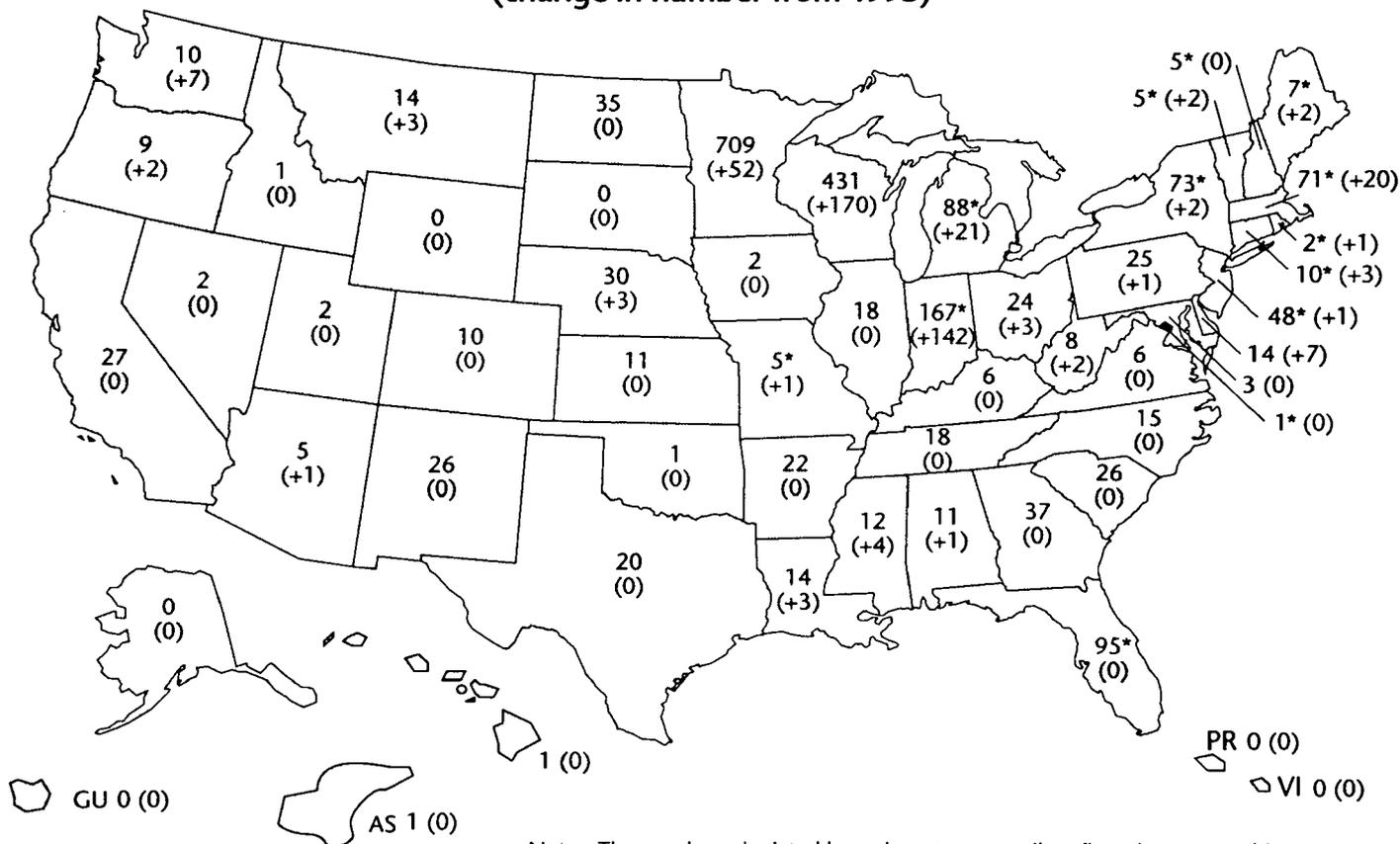
can provide information on the percentage of waterbodies in each state that is currently under an advisory and the percentage of waters assessed. The name of each state contact, a phone number, and FAX number are also provided so that users can obtain additional information concerning specific advisories. Comparable advisory data and contacts for 1996 are provided for each Canadian province or territory.

Advisory Trends

The number of waterbodies in the U.S. under advisory reported in 1996 (2,193) represents a 26% increase from the number reported in 1995 (1,740 advisories) and a 72% increase from the number of advisories issued since 1993 (1,278 advisories). The increase in advisories issued by the states generally reflects an increase in the number of assessments of the levels of chemical contaminants in fish and wildlife tissues. These additional assessments were conducted as a result of the increased awareness of health risks associated with the

Figure 1

**Number of Fish Advisories Issued by Each State in 1996
(change in number from 1995)**



Note: The numbers depicted here do not necessarily reflect the geographic extent of chemical contamination in each state nor the extent of a state's monitoring efforts. The methods used to establish fish advisories vary among the states. An asterisk (*) denotes states that have issued statewide advisories for particular pollutants or types of waterbodies.

consumption of chemically contaminated fish and wildlife. Figure 1 shows the number of advisories currently in effect for each state and the increase or decrease in the number of advisories since 1995. The number of advisories decreases if states determine that monitored concentrations of chemical contaminants in fish or wildlife tissues have decreased and no longer pose a risk to human health.

Bioaccumulative Pollutants

Although advisories in the U.S. have been issued for a total of 45 chemical contaminants, most advisories issued have involved five primary contaminants. These chemical contaminants are biologically accumulated in the tissues of aquatic organisms at concentrations many times higher than concentrations in the water. In addition, these chemical contaminants persist in sediments for relatively long periods where they can be accumulated by bottom-dwelling animals and passed up the food chain to fish. Concentrations of these contaminants in the tissues of aquatic organisms may be increased at each successive level of the food chain. As a result, top predators in a food chain, such as trout, salmon, or walleye, may have concentrations of these chemicals in their fatty tissues that can be a million times higher than the concentrations in water. Mercury, PCBs, chlordane, dioxins, and DDT (and its degradation products DDE and DDD) were responsible for almost 95% of all fish consumption advisories in effect in 1996. This pattern was also seen in the 1993, 1994, and 1995 databases (see Figure 2).

Mercury

Advisories for mercury increased 28% from 1995 to 1996 (1,308 to 1,675) and increased 86% from 1993 to 1996 (899 to 1,675). The number of states that have issued mercury advisories also has risen steadily from

27 to 34 to 35 to 38 in 1993, 1994, 1995, and 1996, respectively. The rise in the number of mercury advisories in 1996 can be attributed primarily to issuance of new mercury advisories in 12 states. The majority (89%) of these new advisories, however, were issued in four states: Wisconsin (153), including 99 by the Chippewa Tribes, Indiana (108), Minnesota (50), and Massachusetts (17).

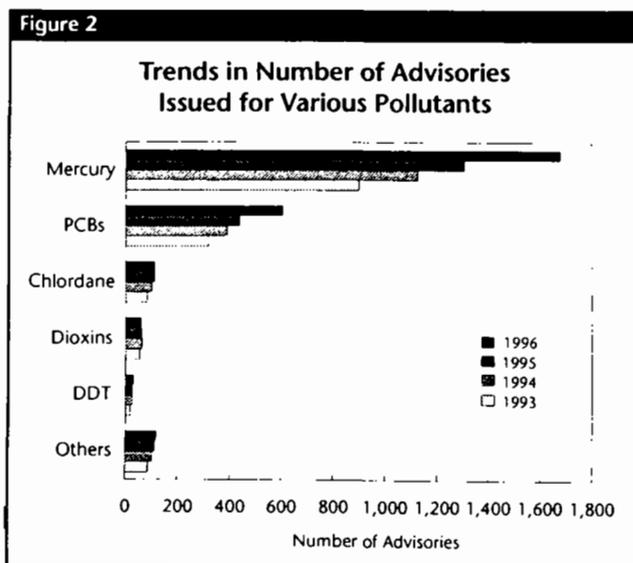
It should also be noted that nine states (Connecticut, Florida, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, and Vermont) have issued statewide advisories for mercury in certain waterbody types (e.g., lakes). To date, 90% of the 1,675 mercury advisories in effect have been issued by the following 10 states: Minnesota (693), Wisconsin (389), Indiana (116), Florida (94), Michigan (41), North Dakota (35), Massachusetts (34), New Jersey (30), New Mexico (26), South Carolina (24), and Georgia (23).

PCBs

Similarly, advisories for PCBs increased 41% from 1995 to 1996 (438 to 616) and increased 93% from 1993 to 1996 (319 to 616). The number of states that have issued PCB advisories increased only slightly from 31 to 35 states from 1993 to 1994 and then declined to 34 states in 1995. The rise in the number of advisories for PCBs in 1996 (178) can be attributed to the issuance of new advisories by nine states. The majority (87%) of these 178 new advisories, however, were issued by three states: Indiana (114), Wisconsin (28), and Minnesota (12). To date, 84% of the 616 PCB advisories have been issued by 11 states: Indiana (134), Minnesota (125), Michigan (52), Wisconsin (52), New York (49), Georgia (21), Nebraska (19), Ohio (21), Pennsylvania (18), Massachusetts (17), and New Jersey (12). Seven states (Connecticut, District of Columbia, Indiana, Missouri, New Jersey, New York, and Rhode Island) have issued statewide advisories for PCBs, including three for marine waters. Only two of these statewide PCB advisories (District of Columbia and Rhode Island) are for PCBs only, however.

Other Pollutants

The total number of advisories for chlordane and DDT (and its degradation products) increased negligibly <1% and 3% from 1995 to 1996, respectively. The total number of advisories for dioxins was 54 in 1993, then rose to 63 in 1994, held steady at 63 in 1995, and declined to 60 advisories in 1996. Dioxins are one of several chemical contaminants for which advisories have been rescinded by some states, in part because many pulp and paper mills have changed their processes.



Wildlife Advisories

In addition to advisories for fish and shellfish, the database also contains several wildlife advisories. Four states have issued consumption advisories for turtles: Arizona (3), Massachusetts (1), Minnesota (5), and New York (statewide advisory). One state (Massachusetts) has an advisory for frogs, New York has a statewide advisory for waterfowl (mergansers), and Arkansas recently issued an advisory for woodducks. Maine issued a statewide advisory for moose liver and kidneys due to cadmium levels.

1996 Advisory Listing

The 1996 database lists 2,193 advisories in 47 states, the District of Columbia, and the U.S. Territory of American Samoa. Some of these advisories represent statewide advisories for certain types of waterbodies (e.g., lakes). An advisory may represent one waterbody or one type of waterbody within a state's jurisdiction. Statewide advisories are counted as one advisory. The database counts one advisory for each waterbody name or type of waterbody regardless of the number of fish or wildlife species that are affected or the number of chemical contaminants detected at concentrations of human health concern. Thirteen states (Florida, Connecticut, Indiana, Maine, Massachusetts, New Hampshire, New Jersey, New York, Michigan, Missouri, Rhode Island, Vermont, and the District of Columbia) currently have statewide advisories in effect. A statewide advisory is issued to warn the public of the potential for wide-spread contamination of certain species of fish in certain

types of waterbodies (e.g., lakes or coastal marine waters). In such a case, the state may have found a level of contamination of a specific pollutant in a particular fish species over a relatively wide geographic area that warrants advising the public of the situation.

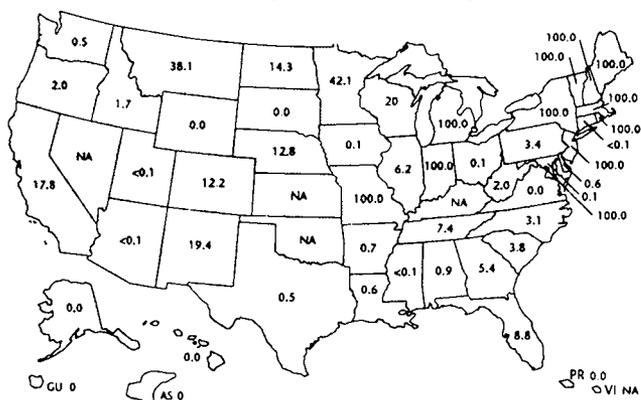
The 13 statewide advisories and 2,193 specifically named waterbodies represent approximately 15% of the Nation's total lake acreage and 5% of the Nation's total river miles. In addition, 100% of the Great Lakes waters and their connecting waters and a large portion of the Nation's coastal waters are also under advisory. The Great Lakes waters are considered separately from other lakes, and their connecting waters are considered separately from other river miles. The percentages of lake acres and river miles in each state that are currently under a fish advisory are shown in Figures 3 and 4, respectively.

Summary of Canadian Advisories

Beginning in 1996, the U.S. EPA contacted health and environmental officials in the 12 Canadian provinces and territories to obtain narrative and geographic information systems (GIS) information on advisories throughout Canada. The number of Canadian advisories in effect in 1996 was 2,617. This includes one province-wide advisory for mercury for Nova Scotia. Figure 6 shows the number of waterbodies under advisory for each of the Canadian provinces. Ontario and Quebec reported the highest number of advisories, 1,552 and 712, respectively. Based on all the advisories reported, 87% were issued for waterbodies in these two

Figure 3

Percentage of Lake Acres Currently Under Advisory

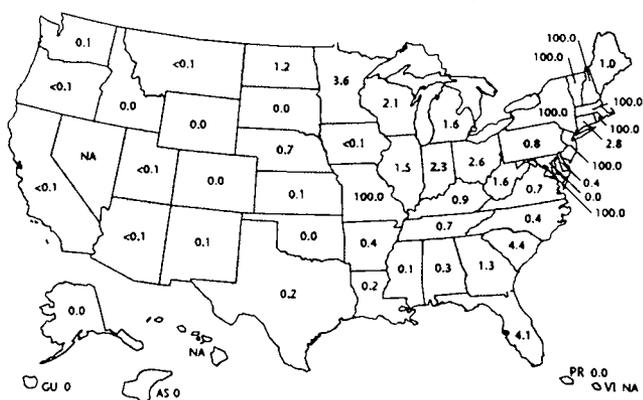


Eleven states have 100% of their lake acres under fish advisories (these include some states with statewide advisories), another 8 states have 10% to 50% of their lake acres under advisories, 24 states have <10% of their lake acres under advisories, and 9 states have no lake acres under advisories.

NA = Not available, lake acreage under advisories not known.

Figure 4

Percentage of River Miles Currently Under Advisory



Eight states have 100% of their river miles under fish advisories (these include some states with statewide advisories), 34 states have <10% of their river miles under advisories, and 11 states have no river miles under advisories.

NA = Not available, river miles under advisories not known.

provinces. With respect to chemical contaminants, advisories in Canada have been issued for a total of five bioaccumulative chemical contaminants including mercury, PCBs, dioxins/furans, toxaphene, and mirex. More than 96% of all Canadian advisories have been issued for mercury.

Database Use and Access

The database was developed by EPA to help federal, state, local government agencies, and Native American tribes assess the potential for human health risks associated with consumption of chemical contaminants in noncommercially caught fish and wildlife. The data contained in this database may also be used by the general public to make informed decisions about the waterbodies in which they choose to fish or harvest wildlife; the frequency with which they fish these waterbodies; the species, size, and number of fish they collect; and the frequency with which they consume fish from specific waterbodies.

Figure 5

Number of Fish Advisories in Effect in Canada in 1996



*Nova Scotia and New Brunswick have provincewide advisories for mercury.

The 1996 version of the Listing of Fish and Wildlife Advisories is PC-based and is available to the public free of charge on both 3.5-inch diskettes (EPA document number EPA-823-C-97-004) and CD-ROM (EPA document number EPA-823-C-97-005). For copies of the diskettes or CD-ROM, contact:

U.S. Environmental Protection Agency
National Center for Environmental
Publications and Information
11029 Kenwood Road
Cincinnati, Ohio 45242
(513-489-8190).

EPA will make this 1996 update of the LFWA database available for downloading from the Internet through the following URL:

<http://www.epa.gov/OST>

In addition, the LFWA database is available for on-line viewing at the following URL:

http://www.epa.gov/surf/surf_search.html

For further information on specific advisories within a particular state, contact the appropriate state agency contact given in the database. For further information on Canadian advisories, contact the appropriate provincial contact given in the database.

For more information concerning the National Fish Contamination Program, contact:

U.S. Environmental Protection Agency
Office of Science and Technology
401 M Street SW
Washington, DC 20460

U.S. EPA contact: Jeffrey Bigler
Phone (202-260-1305) FAX (202-260-9830).