



Fact Sheet

Update: National Listing of Fish and Wildlife Advisories

Summary

The 1999 *National Listing of Fish and Wildlife Advisories* is now available from the U.S. Environmental Protection Agency (EPA). States, tribes, and territories report that the number of fish consumption advisories issued in 1999 rose by 145, a 6% increase over 1998. The total number of advisories in the United States increased for four major contaminants—mercury, PCBs, dioxins, and DDT—but decreased for chlordane. This is the second year in which the number of advisories issued for chlordane has declined. The increase in advisories generally reflects an increase in the number of assessments performed and the improved quality of monitoring and data collection methods. The number of acres of lakes under advisory increased from 15.8% in 1998 to 20.4% in 1999, a total of 52,800 lakes, while the number of river miles under advisory remained the same at 6.8%. The survey showed that 100% of the Great Lakes and their connecting waters and 58% of the coastal waterways were under advisory in 1999.

The national listing is available on the Internet at: <http://www.epa.gov/waterscience/fish/listing.html>

Background

The states, territories, and Native American tribes (hereafter referred to as states) have primary responsibility for protecting residents from the health risks of eating contaminated fish and wildlife. If high concentrations of chemicals, such as mercury or PCBs, are found in local fish and wildlife, then a state may issue a consumption advisory for the general population, including recreational and subsistence fishers, as well as for sensitive subpopulations (such as pregnant women, nursing mothers, and children). A consumption advisory may include recommendations to limit or avoid eating certain fish and wildlife species caught 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 for their residents.

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

- **No-consumption advisory for the general population** – Issued when levels of chemical contamination in fish or wildlife pose a health risk to the general public. The general population is advised to avoid eating certain types of locally caught fish or wildlife.

- **No-consumption advisory for sensitive subpopulations** – Issued when contaminant levels in fish or wildlife pose a health risk to sensitive subpopulations (such as pregnant women and children). Sensitive subpopulations are advised to avoid eating certain types of locally caught fish or wildlife.
- **Restricted consumption advisory for the general population** – Issued when contaminant levels in fish or wildlife may pose a health risk if too much fish or wildlife is consumed. The general population is advised to limit eating certain types of locally caught fish or wildlife.
- **Restricted consumption advisory for sensitive subpopulations** – Issued when contaminant levels in fish or wildlife may pose a health risk if too much fish or wildlife is consumed. Sensitive subpopulations are advised to limit eating certain types of locally caught fish or wildlife.
- **Commercial Fishing Ban** – Issued when high levels of contamination are found in fish caught for commercial purposes. These bans prohibit the commercial harvest and sale of fish, shellfish, and/or wildlife species from a designated waterbody.

As shown in Table 1, advisories of all types increased in number from 1993 to 1999.

Table 1. U.S. Advisories Issued from 1993 to 1999 by Type

	1993	1994	1995	1996	1997	1998	1999
No Consumption – General Population	503	462	463	563	545	532	570
No Consumption – Sensitive Subpopulation	555	720	778	1,022	1,119	1,211	1,285
Restricted Consumption – General Population	993	1,182	1,372	1,763	1,843	2,062	2,213
Restricted Consumption – Sensitive Subpopulation	689	900	1,042	1,370	1,450	1,595	1,630
Commercial Fishing Ban	30	30	55	50	52	50	50

1999 National Listing of Fish and Wildlife Advisories Web Site

The 1999 National Listing of Fish and Wildlife Advisories web site lists 2,651 advisories in 47 states, the District of Columbia, and the U.S. Territory of American Samoa. The web site includes information on species and size of fish or wildlife under advisory; contaminants identified in the advisory; geographic location; lake acreage or river miles under advisory; population for whom the advisory was issued; fish tissue residue data; and state and tribal contact information. Some of the advisories represent statewide advisories for certain types of waterbodies (e.g., lakes, rivers, and/or coastal waters). An advisory may represent one waterbody or one type of waterbody within a state's jurisdiction. Statewide advisories are counted as one advisory. An advisory for each waterbody name or type of waterbody may be listed as one advisory regardless of the number of fish or wildlife species affected or the number of chemical contaminants detected.

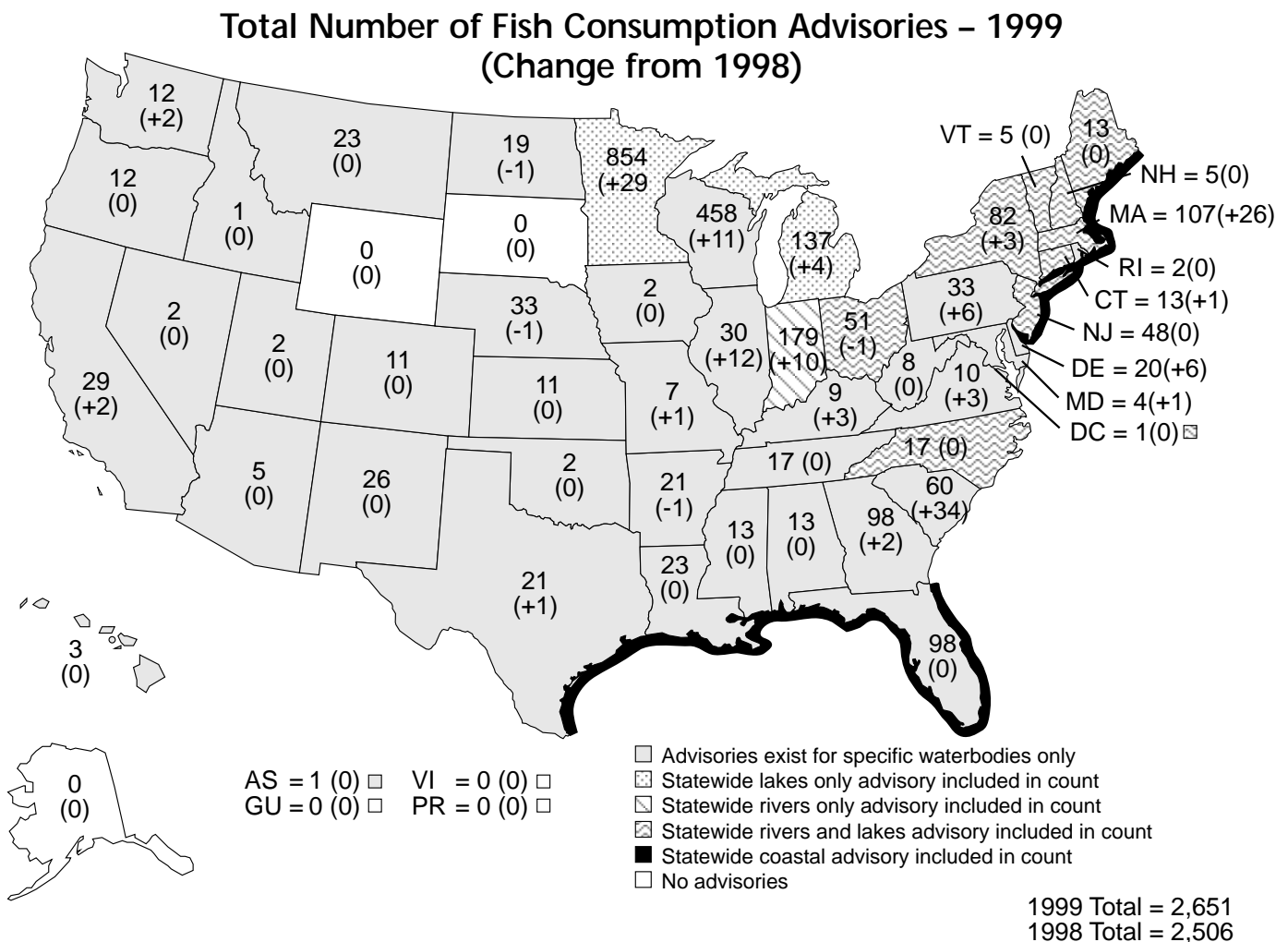
The web site provides generate national, regional, and state maps that summarize advisory information. A new feature added to the web site this year is access to fish

tissue residue data for those waterbodies under advisory in 16 states. Also included on the web site are the names of each state and tribal contact, a phone number, FAX number, and e-mail address. Comparable advisory information (excluding tissue residue data) and contact information for 1997 are provided for each Canadian province or territory.

Advisory Trends

The number of advisories in the United States reported in 1999 (2,651) represents a 6% increase from the number reported in 1998 (2,506) and a 109% increase from the number of advisories issued since 1993 (1,266 advisories). Figure 1 shows the number of advisories currently in effect for each state and the number of new advisories issued since 1998. 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 eating chemically contaminated fish and wildlife. Some of the increase in advisory numbers, however, may be due to the increasing use of EPA risk assessment procedures in setting advisories rather than Food and Drug

Figure 1



Administration (FDA) action levels developed for commercial fisheries.

A statewide advisory is issued to warn the public of the potential for widespread contamination of specific species of fish or wildlife (e.g., moose or waterfowl) in certain types of waterbodies (e.g., lakes, rivers and streams, or coastal waters). Nineteen states (Alabama, Connecticut, District of Columbia, Florida, Indiana, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Rhode Island, Texas, and Vermont) currently have statewide advisories in effect (see Table 2). Minnesota added a statewide mercury advisory for all untested lakes in 1999.

The 2,651 advisories in the national listing represent approximately 20.4% of the Nation's total lake acreage and 6.8% of the Nation's total river miles. Approximately 52,800 lakes and 238,000 miles of river are under advisory. In addition, 100% of the Great Lakes waters and their connecting waters are also under advisory (see Table 3). 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 currently under a fish advisory are shown in Figures 2 and 3, respectively.

State	Lake	River	Coastal Waters
Alabama			Mercury
Connecticut	Mercury	Mercury	PCBs
Dist. of Columbia	PCBs	PCBs	
Florida			Mercury
Indiana		Mercury PCBs	
Louisiana			Mercury
Maine	Mercury	Mercury	Dioxins Mercury PCBs
Massachusetts	Mercury	Mercury	PCBs
Michigan	Mercury		
Minnesota	Mercury		
Mississippi			Mercury
New Hampshire	Mercury	Mercury	PCBs
New Jersey	Mercury	Mercury	PCBs Cadmium Dioxins
New York	PCBs Chlordane Mirex DDT	PCBs Chlordane Mirex DDT	Cadmium Dioxins
North Carolina	Mercury	Mercury	
Ohio	Mercury	Mercury	
Rhode Island			PCBs
Texas			Mercury
Vermont	Mercury	Mercury	

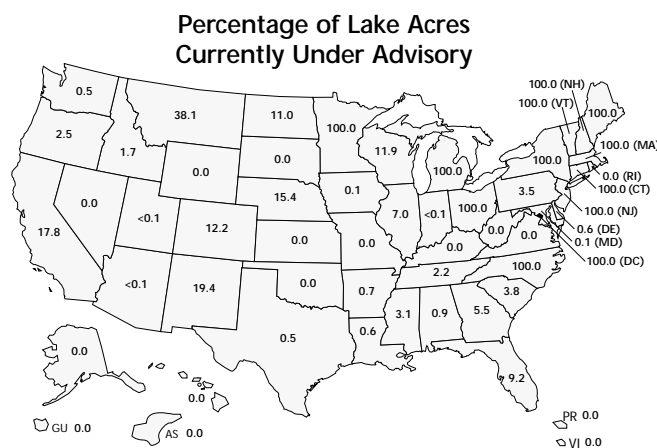
Table 3. Fish Advisories Issued for the Great Lakes

Great Lakes	PCBs	Dioxins	Mercury	Chlordane
Lake Superior	●	●	●	●
Lake Michigan	●	●	●	●
Lake Huron	●	●		●
Lake Erie	●	●		
Lake Ontario	●	●		

In addition to the Great Lakes, many other Great Waters of the United States are currently under fish consumption advisories for various pollutants. The Great Waters include not only the Great Lakes but also Lake Champlain (which is under advisories for PCBs and mercury), the Chesapeake Bay, 20 National Estuary Program (NEP) sites, and 11 National Estuarine Research Reserve System (NERRS) sites (see Table 4). Although the Chesapeake Bay itself is not under any advisories, the Potomac, James, Black, and Anacostia rivers, which connect to the Chesapeake, are all under advisories. All of these rivers, with the exception of the James River (which is under advisory for kepone), are under chlordane advisories. The Anacostia River is also listed for PCBs, and the Potomac River is listed for PCBs and dioxins in addition to chlordane. Baltimore Harbor, which also connects to the Chesapeake, is under advisory for chlordane contamination in fish tissue.

A number of the major estuaries listed in the NEP and/or designated as NERRS sites are under fish and/or shellfish advisories for a range of chemical contaminants (see Table 4). Fifty-nine percent of the total number of NEP, NERRS, and combined sites are under fish consumption advisories. There are 20 sites that have no current fish consumption advisories.

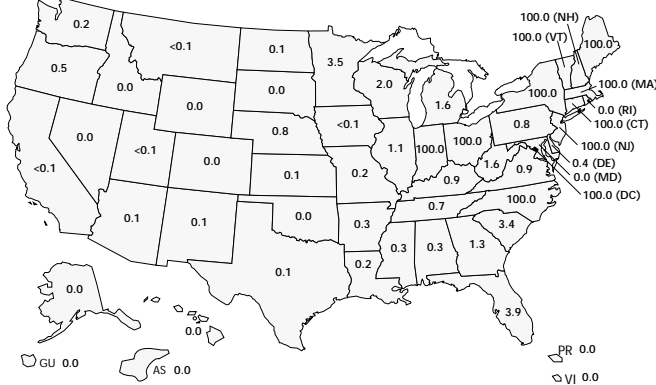
Figure 2.



Twelve states have 100% of their lake acres under fish advisories (these include states with statewide advisories), another 7 states have 10% to 50% of their lake acres under advisories, 20 states have <10% of their lake acres under advisories, and 16 states have no lake acres under advisories.

Figure 3.

Percentage of River Miles Currently Under Advisory



Eleven states have 100% of their river miles under fish advisories (these include states with statewide advisories), 30 states have <10% of their river miles under advisories, and 14 states have no river miles under advisories.

Several states have issued fish advisories for all of their coastal waters. Using coastal mileages calculated by the National Oceanic and Atmospheric Administration, an estimated 58.9% of the coastline of the contiguous 48 states currently is under advisory. This includes 61.5% of the Atlantic Coast and 100% of the Gulf Coast. No Pacific Coast state has issued a statewide advisory for any of its coastal waters although several local areas along the Pacific Coast are under advisory. The Atlantic coastal advisories have been issued for a wide variety of chemical contaminants including mercury, PCBs, dioxins, and cadmium, while all of the Gulf Coast advisories have been issued for mercury.

Bioaccumulative Pollutants

Although advisories in the United States exist for a total of 38 chemical contaminants, most advisories issued have involved five primary contaminants: mercury, PCBs, dioxin, DDT, and chlordane. These chemical contaminants

Table 4. Fish Consumption Advisories Active for NEP and NERRS Sites – 1999

Waterbody	PCBs	Dioxins	Mercury	Cadmium	Chlordane	Others
Casco Bay, ME *	●	●	●			
Wells, ME #	●	●	●			
Great Bay, NH #	●					
Great Bay, Little Bay, and Hampton Harbor, NH *	●					
Massachusetts Bay, MA *	●					
Buzzards Bay, MA *	●					
Waquoit Bay, MA #	●					
Narragansett, RI * #	●					
Long Island Sound, NY/CT *	●	●		●		
Peconic Bay, NY *		●		●		
Hudson River, NY #	●	●		●	● ²	● ^{1,4}
New York/New Jersey Harbor *	●	●		●	●	
Barnegat Bay, NJ *	●	●		●	●	
Jacques Cousteau-Great Bay and Mullica River, NJ #	●	●		●	●	
Delaware Estuary, DE/NJ/PA * #	●	●	●	●	●	
Albemarle-Pamlico Sounds, NC *		●				
Ashepoo-Combahee-Edisto Basin, SC #			●			
Indian River Lagoon, FL *			●			
Charlotte Harbor, FL *			●			
Rookery Bay, FL #			●			
Sarasota Bay, FL *			●			
Tampa Bay, FL *			●			
Apalachicola Bay, FL #			●			
Mobile Bay, AL *			●			
Weeks Bay, AL #			●			
Galveston Bay, TX *		●				
Puget Sound, WA *	●	●	●			● ³
Columbia River, OR/WA *	●	●				● ⁴
San Francisco Bay, CA *	●		●		●	● ⁵

¹ Mirex.

² For waterfowl.

³ Specific embayments of Puget Sound are listed for the following pollutants: creosote, pentachlorophenol, volatile organic compounds (VOCs), tetrachloroethylene, arsenic, metals (unspecified), vinyl chloride, polyaromatic hydrocarbons (PAHs), polynuclear aromatics, and pesticides (unspecified).

⁴ DDT.

⁵ DDT, dieldrin, other unspecified pesticides.

* NEP site.

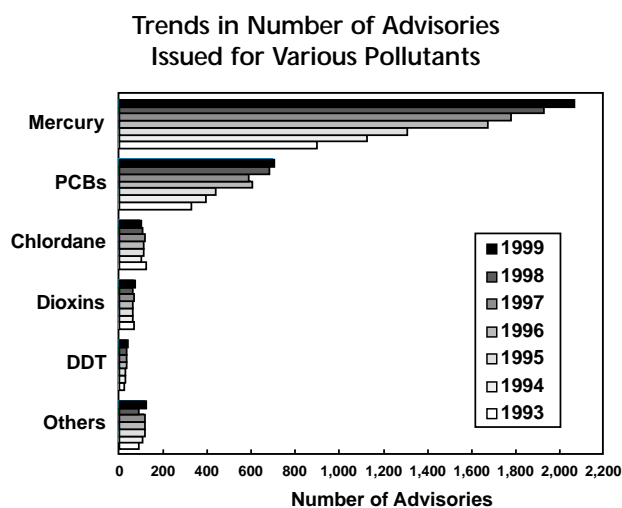
NERRS site.

Source: EPA 1999 National Listing of Fish and Wildlife Advisories (NLFWA) Database (Advisories current through December 1999).

accumulate in the tissues of aquatic organisms at concentrations many times higher than concentrations in the water. In addition, these chemical contaminants persist for relatively long periods in sediments 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 largemouth bass or walleye, may have concentrations of these chemicals in their tissues that can be a million times higher than the concentrations in the water. Mercury, PCBs, chlordane, dioxins, and DDT (and its degradation products, DDE and DDD) were at least partly responsible for 99% of all fish consumption advisories in effect in 1999. (See Figure 4.)

Figure 4



Mercury

Advisories for mercury increased 7% from 1998 to 1999 (1,931 to 2,073) and increased 130% from 1993 to 1999 (899 to 2,073). The number of states that have issued mercury advisories has risen steadily from 27 in 1993 to 41 states in 1999. The rise in the number of mercury advisories in 1999 can be attributed to a net increase of mercury advisories in 15 states. Five states account for the majority (82%) of this net increase: South Carolina (+34), Minnesota (+29), Massachusetts (+26), Michigan (+18), and Indiana (+10). It should also be noted that 11 states (Connecticut, Indiana, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, North Carolina, Ohio, and Vermont) have issued statewide advisories for mercury in freshwater lakes and/or rivers. Another six states (Alabama, Florida, Louisiana, Maine, Mississippi, and Texas) have statewide advisories for mercury in their coastal waters. To date, 90% of the 2,073 mercury advisories in effect have been issued by the following 11 states: Minnesota (850), Wisconsin (411), Indiana (136), Florida (97),

Massachusetts (84), Georgia (82), Michigan (71), South Carolina (56), New Jersey (30), New Mexico (26), and Montana (22).

PCBs

Advisories for PCBs increased 3% from 1998 to 1999 (from 679 to 703) and increased 120% from 1993 to 1998 (319 to 703). The number of states that have issued PCB advisories continued to rise to 38 states (including American Samoa) in 1999, up from 31 states in 1993 and 36 states in 1998. Maryland issued its first advisory for PCBs in 1999. The majority (79%) of the net gain in PCB advisories in 1999 came from 5 states: Delaware (+7), Illinois (+3), Indiana (+3), Kentucky (+3), and Virginia (+3). To date, 78% of the 703 PCB advisories in effect have been issued by 10 states: Indiana (128), Michigan (105), Minnesota (84), Wisconsin (56), New York (49), Ohio (35), Pennsylvania (24), Georgia (24), Illinois (21), and Nebraska (20). Three states (Indiana, New York, and District of Columbia) have issued statewide freshwater (river and/or lake) advisories for PCBs. Six other states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, and Rhode Island) have issued PCB advisories for all of their coastal marine waters.

Other Pollutants

The total number of advisories for DDT (and its degradation products, DDE and DDD) increased from 34 in 1998 to 40 in 1999. California had the greatest number of DDT advisories active in 1999 (13), followed by New York (4) and Texas (4). The total number of advisories for dioxins increased by 15 (25%) from 1998 to 74 advisories in 1999. This increase follows a 9% decrease in dioxin advisories from 1997 to 1998. The rise in dioxin advisories in 1999 can largely be attributed to 9 new advisories issued in Delaware and 5 advisories issued in Michigan. Dioxins are one of several chemical contaminants for which advisories have been rescinded in many states in recent years, in part because pulp and paper mills have changed their processes. Many advisories for the pesticide chlordane have also been rescinded in recent years, in part because all uses of chlordane in the United States were banned in 1988 and the compound continues to be degraded in the environment. The number of chlordane advisories decreased again in 1999 (101 advisories), down by 3% from 1998 (104 advisories) and down by 14% from 1997 (117 advisories).

Wildlife Advisories

In addition to advisories for fish and shellfish, the web site also contains several wildlife advisories. Four states have issued consumption advisories for turtles: Arizona (3), Massachusetts (1), Minnesota (8), and New York (statewide advisory). One state (Massachusetts) has an advisory for frogs, New York has a statewide advisory for waterfowl (including mergansers), Arkansas has an advisory for wood

ducks, and Utah has an advisory for American coot and ducks. Maine issued a statewide advisory for moose liver and kidneys due to cadmium levels.

Summary of Canadian Advisories

No new information was collected regarding fish advisories in Canada for 1999. Beginning in 1996, EPA contacted health and environmental officials in the 12 Canadian provinces and territories to obtain narrative and geographic information system (GIS) information on advisories throughout Canada. Figure 5 shows the number of waterbodies under advisory in 1997 for each of the Canadian provinces. The number of Canadian advisories in effect in 1997 was 2,625. Provincewide advisories for mercury were also in effect in 1997 for Nova Scotia and New Brunswick. With respect to chemical contaminants, advisories in Canada have been issued for a total of five bioaccumulative chemical contaminants including mercury (2,572), PCBs (59), dioxins/furans (68), toxaphene (16), and mirex (9). More than 97% of all Canadian advisories have been issued for mercury.

Figure 5.

Total Number of Fish Advisories in Effect in Canada



*Provincewide advisories in effect in 1997 for Nova Scotia (all rivers and lakes) and New Brunswick (all lakes).

For More Information

For more information on specific advisories within a state, contact the appropriate state agency listed on the National Listing of Fish and Wildlife Advisories web site at: www.epa.gov/waterscience/fish/listing.html. This is particularly important for advisories that recommend consumers restrict their consumption of fish from certain waterbodies. State health departments provide more specific information for restricted consumption advisories on the appropriate meal size and meal frequency (number of meals per week or month) that is considered safe to eat.

The data available on the national listing web site may also be used to assist the general public in making informed decisions about the waterbodies in which they choose to fish or harvest wildlife, and the species and size of fish they choose to eat. The national listing of fish and wildlife advisories web site includes advisory information for all states through December 1999. For some states, the web site includes additional data on advisories issued in 2000.

For more information on how to properly clean fish to reduce exposure, consult EPA's brochure "Should I Eat the Fish I Catch," available in English, Spanish, and Hmong on EPA's fish advisory web site: www.epa.gov/waterscience/fish.

For more information on the National Fish and Wildlife Contamination Program, contact:

Jeff Bigler
U.S. Environmental Protection Agency
Office of Science and Technology
National Fish and Wildlife Contamination
Program (4305)
1200 Pennsylvania Ave., NW
Washington, DC 20460
Phone 202-260-7301
e-mail bigler.jeff@epa.gov.