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Office of Water
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Fact Sheet

National Listing of Fish Advisories

Summary

*For the 12th year since 1993, EPA is making available to the public its compendium of information on locally issued fish advisories and safe eating guidelines. This information is provided to EPA annually by states, territories and tribes and EPA makes this information easily accessible to the public every summer on its web site (*http://www.epa.gov/waterscience/fish/*.) States, territories and tribes issue fish consumption advisories and safe eating guidelines for waters in order to inform people about the recommended level of consumption of fish caught in local waters. U.S. emissions of mercury have declined by almost 50% since 1990. The* ***2003 National Listing of Fish Advisories*** *database shows that the number of safe eating guidelines issued continues to rise rapidly, and that states, territories and tribes also continue to issue new fish advisories, with most new fishing advisories involving mercury.*

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

Background

The states, District of Columbia, territories, and Native American tribes (for simplicity, hereafter referred to as *states*) have primary responsibility for protecting their residents from the health risks of eating contaminated fish caught in local waters. Over the years, states have issued fish consumption advice and developed their own fish advisory programs. Although 48 states, the District of Columbia, and the U.S. Territory of American Samoa have fish consumption advisories in place, there is variability state-to-state in the scope and extent of monitoring, in how frequently previously tested waters are sampled again, in how decisions are made to place waters under advisory, and in the specific advice that is provided when contamination is found in fish. Because of this variability, it is difficult to draw national conclusions or establish national trends. However, EPA can and does report on an annual basis in this Technical Fact Sheet summary information based on what EPA has compiled from state submissions.

A consumption advisory may include recommendations to limit or avoid eating certain fish and water-dependent wildlife species caught from specific waterbodies or, in some cases, from specific waterbody types (e.g., all lakes). An advisory may be issued for the general population, including recreational and subsistence fishers, or it may be issued specifically for sensitive subpopulations such as pregnant women, nursing mothers, and children. A consumption advisory is not a regulation, but rather a voluntary recommendation issued to help protect public health.

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 children and pregnant women). 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 and shellfish from a designated waterbody.

In addition to the five major types of advisories, states are increasingly issuing notices of statewide advisories and safe eating guidelines. A **statewide advisory** is issued to warn the public of the potential human health risks from widespread chemical contamination of certain species from particular types of waterbodies (e.g., lakes, rivers, and/or coastal waters) within the state. An advisory for each waterbody name or type of waterbody may be listed as one advisory regardless of the number of fish or water-dependent wildlife species affected or the number of chemical contaminants detected. In contrast, a **safe eating guideline** is issued to inform the public that fish from specific waterbodies have been tested for chemical contaminants, and the results have shown that specific species of fish from these waters are safe to eat without consumption restrictions.

2003 National Listing of Fish Advisories Web Site

The 2003 National Listing of Fish Advisories web site lists 3,089 advisories in 48 states. The web site includes

- Information on species and size of fish or water-dependent wildlife under advisory

- Chemical contaminants identified in the advisory
- Geographic location of the waterbody
- Lake acreage or river miles under advisory
- Population for whom the advisory was issued
- Fish tissue residue data for 46 states and the District of Columbia
- State and tribal contact information.

The web site can generate national, regional, and state maps that summarize advisory information. Also included on the web site are the names of each state contact, a phone number, fax number, and e-mail address.

Synopsis of 2003 National Listing of Fish Advisories

In past years, EPA has reported fish advisories based on the number of advisories in effect; however, this does not provide an indication of the geographic extent of the advisory. For example, a waterbody-specific advisory may be issued to cover a single waterbody (e.g., a 20-acre lake), while a single statewide lake advisory can represent all lake acres within the state's jurisdiction (up to 12,787,200 acres in one state). Because of the dramatic range in the geographic size of lake acres and river miles affected by a single advisory, the number of advisories does not tell the full story of the geographic extent of waters subject to state advice to limit fish consumption. Thus, EPA is providing information on the total lake acres and total river miles where advisories are currently in effect.

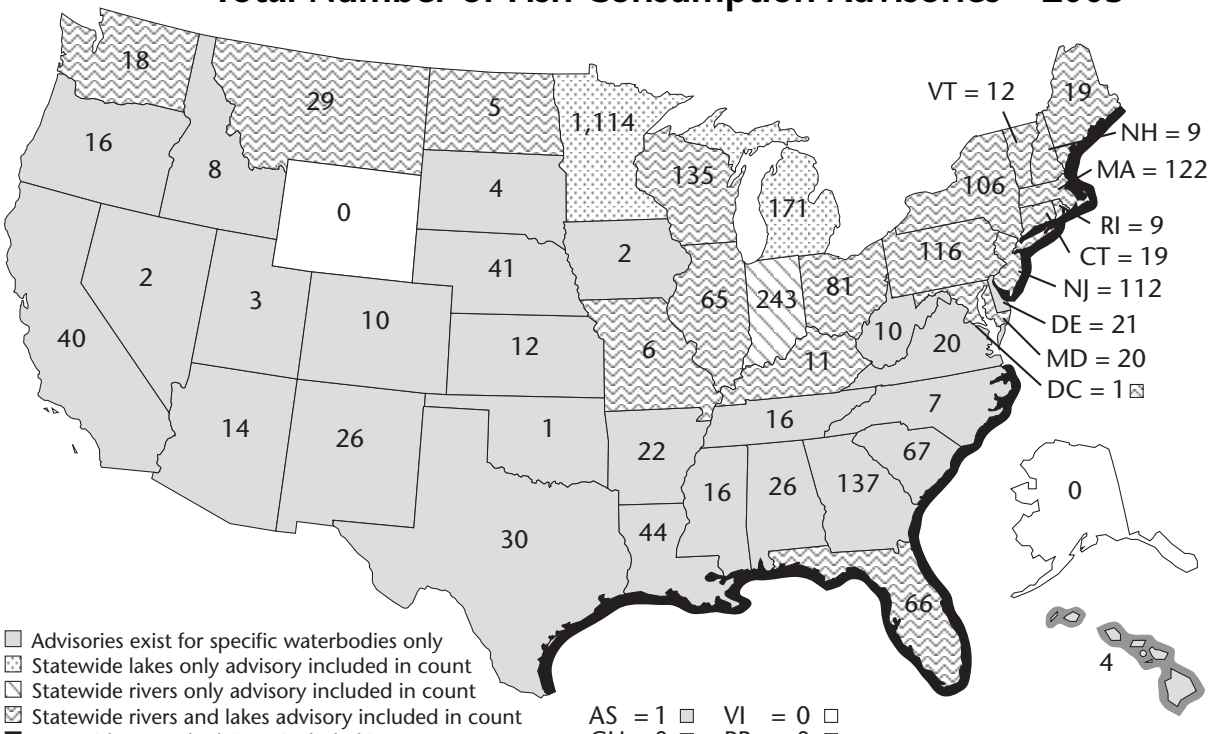
The EPA 2003 *National Listing of Fish Advisories* indicates that states reported that 275 new fish advisories were issued in 2003, bringing the total number of advisories in effect to 3,089 in 2003 (Figure 1). Currently, the 3,089 advisories in the national listing represent 35% of the nation's total lake acreage and 24% of the nation's total river miles. Approximately 101,818 lakes (14,195,187 lake acres) and 846,310 river miles were under advisory in 2003. The percentages of lake acres and river miles under advisory in 2003 in each state are shown in Figure 2. In addition, 100% of the Great Lakes and their connecting waters are also under advisory (Table 1). The Great Lakes and their connecting waters are considered separately from other waters and are not included in the above calculations of total lake acres or river miles.

The increase in the lake acres and river miles under advisory is due in part to an increase in the number of assessments of chemical contaminants in fish and water-dependent wildlife tissues and the states' increasing use of statewide advisories.

A statewide advisory is issued to warn the public of the potential for widespread contamination of specific species of fish or water-dependent wildlife (e.g., turtles or waterfowl) in certain types of waterbodies (e.g., lakes, rivers, or coastal waters). Thirty-one states currently have statewide advisories (Table 2, on page 4). Three states issued statewide advisories in 2003: Montana and Washington each added statewide mercury advice for lakes and rivers, and Hawaii added statewide mercury advice for marine fish.

Figure 1

Total Number of Fish Consumption Advisories – 2003



Note: A statewide advisory is issued to warn the public of the potential for widespread contamination of specific species in certain types of waterbodies. State advisory data should not be used for characterizing geographic distribution of chemical contaminants or for making interstate comparisons.

In addition to the Great Lakes, many other Great Waters of the United States are currently under fish advisories for a variety of pollutants. The Great Waters include not only the Great Lakes but also Lake Champlain (PCBs and mercury), the Chesapeake Bay, 28 National Estuary Program (NEP) sites, and 26 National Estuarine Research Reserve System (NERRS) sites. Although the Chesapeake Bay is not under any advisories, the Potomac, James, Back, Anacostia, and Piankatank rivers, which connect to it, are all under advisories. Baltimore Harbor, which also connects to the Chesapeake Bay, is under advisory for chlordane and PCB contamination in fish and blue crabs. At least some portions of 22 of the NEP and 16 of the NERRS sites are currently under fish consumption advisories.

Fifteen states have issued fish advisories for all of their coastal waters (Table 2, on page 4). Almost 71% of the coastline of the United States (excluding Alaska) currently is under advisory. Based on coastal size estimates from the National Oceanic and Atmospheric Administration, 92% of the Atlantic coast and 100% of the Gulf coast was under advisory in 2003. The Atlantic coast advisories have been issued for a wide variety of chemical contaminants, including mercury, PCBs, dioxins, and cadmium. All of the Gulf coast advisories have been issued for mercury. 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 and Hawaii issued a statewide advisory in 2003 for marine fish.

Safe Eating Guidelines

EPA has been encouraging states to issue safe eating guidelines when providing advisory information. In addition to issuing statewide advisories warning the public about chemical contaminants in fish tissue, states are increasingly issuing safe eating guidelines to inform the public that fish from specific waterbodies or specific species of fish have been tested for chemical contaminants and have been shown to contain very low levels of contaminants. By issuing safe eating guidelines, the states are identifying waters or species for the public that are safe to consume and promoting enjoyment of recreational fishing.

In 1993, the first year that the National Listing of Fish Advisories collected data on safe eating guidelines, there were only 20 such guidelines in effect. This number increased very slowly until 2002, when 164 new safe eating guidelines were issued. This 2002 increase represented almost half of all safe eating guidelines issued since 1993. In 2003, an additional 47 safe eating guidelines were issued. Table 3 shows the trend in the issuance of safe eating guidelines since 1993. Currently, 16 states have issued guidelines. The largest numbers of such waterbody-specific guidelines have been issued by Georgia (149), South Carolina (72), and Texas (47). Three states have issued statewide guidelines. In 2001, Alaska issued a statewide guideline to inform the public that all of Alaska's fish are safe to eat without restrictions. In 2002, Wisconsin issued a safe eating guideline for all lakes statewide for bluegill and other sunfish, yellow perch, white and black crappie, and bullheads, while Minnesota issued a similar guideline for all lakes statewide for panfish. However, there are a few waterbody-specific exceptions to the safe eating guidelines, so consumers are advised to review waterbody-specific information.

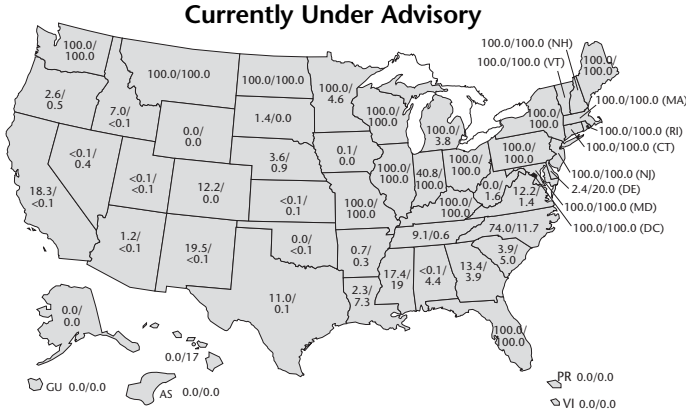
Currently, 66,578 miles of rivers (1.9%) and 4,529,417 lake acres (11%) in the continental United States have safe eating guidelines for at least one fish species. The number of these guidelines is likely to grow as additional states identify safe fishing waters or species (sunfish and other panfish) that do not tend to accumulate chemical contaminants in their tissues to the same extent as long-lived predatory species (large-mouth bass, walleye, northern pike, catfish). These guidelines will help direct the public toward making more informed decisions about the waterbodies in which they fish and healthier choices about the species that they choose to eat.

Bioaccumulative Pollutants

Although there are advisories in the United States for 40 chemical contaminants, most advisories have involved

Figure 2

Percentage of Lake Acres/River Miles Currently Under Advisory



In 2003, approximately 35% of the nation's lake acres and 24% of the nation's river miles were under fish consumption advisories.

Table 1. Fish Advisories Issued for the Great Lakes

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

Table 3. Total Safe Eating Guidelines Issued Since 1993

Year Issued	New Advisories	Cumulative Advisories
1993	20	20
1994	12	32
1995	35	67
1996	10	77
1997	2	79
1998	25	104
1999	44	148
2000	7	155
2001	20	175
2002	164	339
2003	47	386

five primary contaminants: mercury, PCBs, chlordane, dioxins, and DDT. And while 76% of all advisories have been issued at least in part because of mercury contamination, other chemical contaminants are also likely to be present at many of these same advisory locations. These chemical contaminants accumulate in the tissues of aquatic organisms at concentrations many times higher than concentrations in the water. These chemical contaminants also persist for relatively long periods in sediments where bottom-dwelling animals can accumulate them and pass them up the food chain to fish.

Concentrations of these contaminants in the tissues of aquatic organisms may increase at each 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 may 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 almost 98% of all fish consumption advisories in effect in 2003.

Table 2. Summary of Statewide Advisories by Waterbody Type and Year Issued

State	Lake	Issued	River	Issued	Coastal Waters	Issued
Alabama					Mercury	1996
Connecticut	Mercury	1996	Mercury	1996	PCBs	1993
Dist. of Columbia	PCBs	1993	PCBs	1993		
Florida	Mercury	2002	Mercury	2002	Mercury	1993
Georgia					Mercury	2000
Hawaii					Mercury*	2003
Illinois	Mercury	2002	Mercury	2002		
Indiana			Mercury PCBs	1996		
Kentucky	Mercury	2000	Mercury	2000		
Louisiana					Mercury	1997
Maine	Mercury	1994	Mercury	1994	Dioxins Mercury PCBs	1994
Maryland	Mercury PCBs Organo-chlorine pesticides	2002	Mercury PCBs Organo-chlorine pesticides	2002		
Massachusetts	Mercury	1996	Mercury	1996	PCBs Mercury	1994
Michigan	Mercury	1993				
Minnesota	Mercury	1999				
Mississippi					Mercury	1998
Missouri	Mercury	2001	Mercury	2001		
Montana	Mercury	2003	Mercury	2003		
New Hampshire	Mercury	1995	Mercury	1995	PCBs	1994
New Jersey	Mercury	1995	Mercury	1995	PCBs Cadmium Dioxins	1993
New York	PCBs Chlordane Mirex DDT	1994	PCBs Chlordane Mirex DDT	1994	Cadmium Dioxins PCBs	1995
North Carolina					Mercury	2000
North Dakota	Mercury	2001	Mercury	2001		
Ohio	Mercury	1997	Mercury	1997		
Pennsylvania	Mercury	2001	Mercury	2001		
Rhode Island	Mercury	2002	Mercury	2002	PCBs Mercury	1993
South Carolina					Mercury	2001
Texas					Mercury	1997
Vermont	Mercury	1995	Mercury	1995		
Washington	Mercury	2003	Mercury	2003		
Wisconsin	Mercury	2000	Mercury	2003		

*Hawaii has a statewide advisory for mercury in marine fish.

Mercury

Advisories for mercury increased by 222 in 2003. Forty-five states issued mercury advisories in 2003. The increase in the number of mercury advisories in 2003 can be attributed to the issuance of new mercury advisories by 22 states. However, almost 60% of the new advisories (128) were issued by Minnesota. Indiana issued 17 new mercury advisories, and Louisiana issued 10. In 2003, the geographic extent of the states under advisory for mercury was 13,068,990 lake acres and 766,872 river miles. The increase in acres and river miles under advisory is a result of the issuance of statewide mercury advisories by Montana and Washington in 2003 and the addition of rivers to Wisconsin's statewide advisory.

Currently, 21 states (Connecticut, Florida, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, North Dakota, Ohio, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin) have issued statewide advisories for mercury in freshwater lakes and/or rivers. Eleven states (Alabama, Florida, Georgia, Louisiana, Maine, Massachusetts, Mississippi, North Carolina, Rhode Island, South Carolina, and Texas) have statewide advisories for mercury in their coastal waters. Hawaii has a statewide advisory for mercury in marine fish. There are also two tribal statewide advisories in effect for mercury in freshwater and marine fish (including lobster) by the Micmac tribe of Maine.

PCBs

There were 884 advisories in 2003 for PCBs. Thirty-nine states (including American Samoa) issued PCB advisories in 2003. Twelve states added new advisories for PCBs in 2003; however, the increase in advisories for PCBs is primarily due to new advisories issued by three states—Indiana,

New Jersey, and Illinois—which account for almost 60% of all new PCB advisories. There were 2,079,985 lake acres and 133,876 river miles under PCB advisories. Four states (District of Columbia, Indiana, Maryland, and New York) issued statewide freshwater (river and/or lake) advisories for PCBs. Seven other states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, and Rhode Island) issued PCB advisories for all of their coastal marine waters.

Chlordane

Many advisories for the pesticide chlordane have been rescinded in recent years, primarily because all uses of chlordane were banned in the United States in 1988 and the compound continues to degrade in the environment. There were 89 chlordane advisories in 2003 covering 847,259 lake acres and 54,372 river miles under a chlordane advisory in 2003. The changes in 2003 were primarily due to the rescinding of chlordane advisories in New Jersey and Colorado.

Dioxins

There were 90 advisories for dioxins in 2003. New Jersey and Florida both added dioxin advisories in 2003. There were 2,909 lake acres and 1,950 river miles under a dioxin advisory. Although dioxins are one of the five major contaminants that have resulted in the issuance of health advisories, the geographic extent of the contamination is extremely limited compared to that for the other four major contaminants. This is due in part to the limited monitoring of dioxins resulting from the high cost of chemical analysis. Also, dioxin contamination has been associated primarily with specific locations near pulp and paper plants using a bleach kraft process, in addition to other types of chemical manufacturing facilities or incineration facilities.

DDT

Although the use of DDT, an organochlorine pesticide, has been banned since 1975, there were 52 advisories in effect for DDT (and its degradation products, DDE and DDD) in 2003. There are currently 865,901 lake acres and 68,793 river miles under advisory for DDT. California had the greatest number of DDT advisories active in 2003 (14), followed by Texas and Delaware with 5 each. During 2003, Arizona and Michigan issued new advisories for DDT. New York has a statewide advisory for multiple contaminants, including DDT.

Other Pollutants

Although the five major pollutants account for almost 98% of the total number of advisories, the remaining 2% of all fish advisories are caused by a variety of other groups of chemicals. These include heavy metals (arsenic, cadmium, chromium, copper, lead, selenium, and zinc) and organochlorine pesticides (aldrin, dieldrin, heptachlor epoxide, kepone, lindane, mirex, and toxaphene), as well as a myriad of other chemical compounds, including creosote, polyaromatic hydrocarbons (PAHs), hexachlorobenzene, pentachlorophenol, and vinyl chloride, to name just a few. While these other chemical contaminants represent only 2% of the total number of advisories, the extent of the contamination they cause slightly exceeds the lake acres and river miles under advisory for DDT. In 2003, 1,218,252 lake acres and 90,446 river miles were under advisories for other pollutants. New advisories in 2003 for these other pollutants were issued by South Carolina (tributyltin) and Idaho (lead). The majority of lake acres and river miles under advisory for other chemical contaminants are the result of a statewide advisory in New York for multiple contaminants, including mirex, and a regional advisory in Mississippi for toxaphene.

Wildlife Advisories

In addition to advisories for fish and shellfish, the National Listing of Fish Advisories web site also contains several water-dependent 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. Arkansas has an advisory for wood ducks. Utah has an advisory for American coot and ducks. Maine issued a statewide advisory for cadmium in moose liver and kidneys. In 2003, no new advisories were issued for water-dependent wildlife.

National Advice Concerning Mercury in Fish

In 2004, the EPA and the Food and Drug Administration (FDA) issued advice for women who might become pregnant, women who are pregnant, nursing mothers, and young children. The national advice is not included in the statistics presented in this fact sheet.

Fish and shellfish are an important part of a healthy diet. Fish and shellfish contain high-quality protein and other essential nutrients, are low in saturated fat, and contain omega-3 fatty acids. A well-balanced diet that includes a variety of fish and shellfish can contribute to heart health and children's proper growth and development. So women and young children in particular should include fish or shellfish in their diets due to the many nutritional benefits.

However, nearly all fish and shellfish contain traces of mercury. For most people, the risk from mercury by eating fish and shellfish is not a health concern. Yet some fish and shellfish contain higher levels of mercury that may harm an unborn baby or young child's developing nervous system. The risks from mercury in fish and shellfish depend on the amount of fish and shellfish eaten and the levels of mercury in the fish and shellfish. Therefore, the FDA and the EPA are advising women who may become pregnant, pregnant women, nursing mothers, and young children to avoid some types of fish and eat fish and shellfish that are lower in mercury.

By following these three recommendations for selecting and eating fish or shellfish, women and young children will receive the benefits of eating fish and shellfish and be confident that they have reduced their exposure to the harmful effects of mercury.

- Do not eat shark, swordfish, king mackerel, or tilefish because they contain high levels of mercury.

- Eat up to 12 ounces (2 average meals) a week of a variety of fish and shellfish that are lower in mercury.
  - Five of the most commonly eaten fish that are low in mercury are shrimp, canned light tuna, salmon, pollock, and catfish.
  - Another commonly eaten fish, albacore ("white") tuna has more mercury than canned light tuna. Eat up to 6 ounces (one average meal) of albacore tuna per week.
- Check local advisories about the safety of fish caught by family and friends in your local lakes, rivers, and coastal areas. If no advice is available, eat up to 6 ounces (one average meal) per week of fish you caught from local waters, but don't consume any other fish during that week.

Follow these same recommendations when feeding fish and shellfish to your young child, but serve smaller portions. More information on the joint federal advisory is available at *www.epa.gov/waterscience/fish*.

For More Information

For more information on specific advisories within a state, contact the appropriate state agency listed on the National Listing of Fish Advisories web site at *www.epa.gov/waterscience/fish*. This is particularly important for advisories that recommend that 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.

For more information on how to reduce exposure, consult EPA's brochure "What You Need to Know About Mercury in Fish and Shellfish," available in several languages on EPA's fish advisory web site: *www.epa.gov/waterscience/fish.*

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

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