October 2004

Fishing for Trouble

How Toxic Mercury Contaminates Fish in U.S. Waterways

Environment Colorado
Research & Policy Center

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Acknowledgements

Written for Clear The Air by Zachary Corrigan, Staff Attorney and Clean Air Advocate with Environment Colorado Research & Policy Center. Clear The Air is a joint project of the Clean Air Task Force, National Environmental Trust, and the National Association of State PIRGs and affiliated organizations.

Cover photo courtesy of the Recreational Boating and Fishing Foundation, www.rbff.org.

The author would like to thank the Environmental Protection Agency for providing the data used in this report; Michael Bender with the Mercury Policy Project for his great work on this issue throughout the years, including earlier versions of this report; Martha Keating with the Clean Air Task Force, John Stanton and Jennifer Choe with National Environmental Trust, Angela Ledford and Jonathan Banks with Clear The Air, and Holly Binns with Florida PIRG for their suggestions; and Alison Cassady for her insightful research assistance and editing.

This report is made possible with funding from The Pew Charitable Trusts. The opinions expressed in this report are those of the author and do not necessarily reflect the views of The Pew Charitable Trusts.

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Executive Summary

Toxic mercury, largely emitted from coal-burning power plants, is polluting waterways, contaminating the fish we eat, and posing a serious threat to public health. State and tribal health departments issue fish consumption advisories in order to warn people to limit or avoid consumption of contaminated fish species from local rivers, lakes, and other waterbodies. This report details the active fish consumption advisories issued by the states in 2003 due to mercury pollution in local waterways and finds that fish in a large percentage of America's lakes, rivers, and coastal waters are not safe for unlimited consumption.

Mercury is a dangerous toxic metal, especially for children. Exposure to mercury can cause attention and language deficits, impaired memory, and impaired visual and motor function in children. Scientists at the U.S. Environmental Protection Agency (EPA) estimate that one in six women of childbearing age in the U.S. has levels of mercury in her blood sufficiently high to put 630,000 of the four million babies born each year at risk of health problems due to mercury exposure.

Our analysis of EPA data on state fish consumption advisories reveals that mercury advisories cover a greater area than ever before. In 2003, 44 states had active mercury consumption advisories for local waterways compared with only 27 states in 1993 and 39 states in 1997. This is a 63% increase in 11 years. The precipitous increase in mercury advisories over the last decade demonstrates that mercury is pervasive in our environment. As EPA Administrator Mike Leavitt has said, "The more waters we monitor, the more we find mercury...."[a]

Statewide Advisories

More and more states are issuing statewide advisories, or advisories covering all of their inland freshwater lakes and/or rivers for at least one species of fish. In 2003, 21 states issued statewide advisories for their inland lakes and/or rivers (Connecticut, Florida, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, North Dakota, New Hampshire, New Jersey, Ohio, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin). New to this list are Montana and Washington, which for the first time in 2003 issued statewide advisories for all inland waterways, and Wisconsin, which added a statewide advisory on all of its rivers.

Advisories on Our Lakes

A growing number of our nation's lakes are under mercury advisory. In 2003:

- Active mercury advisories covered at least 13.1 million acres of lakes (including statewide advisories), or 32% of all lake acres. The number of lake acres under advisory for mercury increased by 6%, up from at least 12.4 million acres in 2002.

- Ten states (Arizona, California, Idaho, Indiana, Louisiana, Montana, Nebraska, New York, South Dakota, and Washington) increased the extent of their lakes under advisory.

- Nine states (Arizona, California, Idaho, Illinois, Kentucky, Minnesota, Mississippi, North Dakota, and South Carolina) issued

[a] Michael Janofsky, "E.P.A. Says Mercury Taints Fish Across U.S.," *New York Times*, 25 August 2004.

additional consumption restrictions for their lakes, strengthening advisories already in place by adding a new fish to the advisory, warning more people to limit their fish consumption, or advising people to eat less of the fish under advisory.

• Indiana, Michigan, and Pennsylvania have mercury advisories covering the Great Lakes and connecting waterways. These advisories cover 2,334 miles of Great Lake coasts and connecting rivers and estuaries on Lake Erie, Lake Superior, Lake Huron and Lake Michigan.

Advisories on Our Rivers

States are issuing advisories covering more and more miles of our rivers. In 2003:

• Active mercury advisories covered at least 767,000 miles of river (including statewide advisories), or 22% of all river miles. The number of river miles under advisory for mercury increased by 67%, up from at least 458,000 miles in 2002.

• Nine states (California, Louisiana, Michigan, Minnesota, Montana, Nebraska, South Carolina, Washington, and Wisconsin) increased the extent of their rivers under advisory.

• Eight states (Illinois, Indiana, Kentucky, Louisiana, Mississippi, North Dakota, Ohio, and South Carolina) issued additional consumption restrictions for their rivers, strengthening advisories already in place.

Advisories on Our Coasts

Much of our nation's coastline is covered by fish consumption advisories for mercury. In 2003:

• Hawaii issued a statewide advisory covering all 930 miles of its coast; in total, 16,569 miles of our nation's coastlines were covered by mercury advisories in 2003.

• Fish consumption advisories for mercury and other contaminants cover more than 70% of the coastal waters of the contiguous 48 states. EPA estimates that 92% of the Atlantic coast and 100% of the Gulf coast was under advisory in 2003.

• Twelve states (Alabama, Florida, Georgia, Hawaii, Louisiana, Maine, Massachusetts, Mississippi, North Carolina, Rhode Island, South Carolina, and Texas) have issued statewide mercury advisories for their entire coastal areas for at least one species of fish. In Maine, a tribal advisory for mercury covers all fish and lobster along the state's coast.

• Six states (California, Delaware, Florida, Georgia, South Carolina, and Washington) have issued specific estuarine advisories for mercury.

Public Lands under Advisory

A number of our country's public lands, which include some of the most scenic and wild places in the U.S., also have fish consumption advisories for mercury. Not including waterways under statewide advisories on publicly protected lands, Arkansas, New Jersey, and Florida have specific fish consumption advisories that apply to waters in national parks, wildlife refuges, and reserves. Massachusetts has a fishing advisory that applies to a river in a national heritage corridor. Florida and Kentucky also have advisories on state-protected lands.

Threat to Recreational Fishing

Mercury contamination threatens recreational fishing, a time-honored American pastime that is vital to our national and state economies. Studies indicate that fish consumption advisories cause many anglers to reduce the number of days they fish, choose other locations to fish, and take fewer overall fishing trips. Even a small dent in the recreational fishing industry could mean large economic losses. According to the American Sportfishing Association and the National Fish and Wildlife Service,

recreational fishing generated more than $35.6 billion in expenditures in 2001. Of all the money spent on fishing, close to $28 billion was spent in states that have active fish consumption advisories for mercury.

Addressing the Problem at the Source

To protect public health, preserve a critical part of our diet, and ensure the survival of an important American pastime, we need to dramatically cut the amount of mercury released into our environment by reducing mercury emissions from coal-fired power plants. Power plants are the only major mercury polluters yet to be regulated under federal clean air standards. As a result, they are responsible for the lion's share of U.S. mercury emissions.

The Clean Air Act requires each and every power plant, within three years, to reduce mercury and other hazardous air pollutants to levels attainable under a "maximum achievable control technology" (MACT) standard – requiring reductions to levels currently achieved by the best performing plants. Using existing technologies, power plants can reduce mercury emissions by at least 90%. This would bring power plant mercury emissions down from nearly 50 tons per year to roughly five tons per year by 2008.

Unfortunately, in January 2004, the Bush administration issued a proposal that would not come close to achieving the maximum reductions in mercury emissions required by the Clean Air Act and necessary to protect public health. The Bush administration's proposal abandons the MACT approach, enabling power plants to emit six to seven times more mercury emissions than allowed under the Clean Air Act over the next decade. This means that the Bush administration's plan postpones meaningful mercury reductions until 2018, at the earliest. Moreover, the proposal allows facilities to buy mercury pollution credits from facilities located far away instead of reducing their own emissions, thus increasing the risk of creating and exacerbating "toxic hotspots," or areas with high levels of mercury deposition.

The Bush administration should abandon its mercury-trading proposal and faithfully implement the Clean Air Act by finalizing a MACT rule that reduces mercury emissions from power plants by at least 90% from existing levels by 2008.

Mercury Contamination of Fish

When power plants and other industries burn coal or wastes containing mercury, they emit mercury from their smokestacks into the air. Rain, snow, and dust particles "wash" some of this mercury out of the air onto land and into waterways, where microorganisms convert it into methylmercury, a form that is especially toxic to humans and wildlife.[1, b]

Mercury is a persistent bioaccumulative toxin. Fish absorb mercury as it passes over their gills and as they feed on plants and small organisms. As larger fish eat smaller fish, mercury concentrations increase, or bioaccumulate.[2] As a result, larger, older predator fish tend to have the highest concentrations of mercury. Fish at the top of the aquatic food chain can have mercury levels approximately 1 to 10 million times greater than the levels in the surrounding waters.[3]

Mercury from smokestacks not only contaminates nearby waterbodies, but also those far from the source. Once emitted, some mercury can remain circulating in the atmosphere for up to one year. When the mercury comes into contact with oxidizing chemicals such as ozone, it becomes water-soluble. It is in this form that it is deposited via rain or snow. It can then be re-emitted (volatilized) from waterbodies and deposited elsewhere. This cyclical process makes mercury pollution a local, regional, and global problem.[4]

The principal way that people are exposed to mercury is through fish consumption. Mercury also can pass through the placenta and expose developing fetuses. In addition, infants can ingest mercury from breast milk when mothers have eaten contaminated fish.[5]

Mercury is found in the filet portion of the fish (the muscle). Thus, skinning or trimming the fat from the fish does not reduce the mercury content.[6] The only way to avoid mercury when eating fish is to avoid mercury-contaminated fish all together.

Health Effects of Mercury Exposure

The mercury that builds up in fish tissues is highly toxic and can cause neurological and developmental problems to those exposed at sufficient levels.[c]

Children and infants are at higher risk of problems associated with mercury exposure because their nervous systems continue to develop until about age 14.[7] Mercury's effects on the central nervous system are comparable to those of lead.[8] Health effects linked to prenatal mercury exposure include attention and language deficits, impaired memory, and impaired visual and motor function.[9,10]

In 2004, EPA indicated that as many as one in six U.S. women has levels of mercury in her blood sufficiently high to pose a risk to a developing fetus. This means that as many as 630,000 children are born each year at risk of neurological and developmental problems due to mercury exposure *in utero*.[11]

It is not simply children who are at risk of

[b] When this report discusses the "mercury" that builds up in fish, it is referring to methylmercury.

[c] At high levels of exposure, such as through occupational exposure, mercury can result in other problems such as central nervous system damage, kidney damage and failure, cardiovascular collapse, shock, and even death.

health problems due to mercury exposure. In adults, mercury exposure can adversely affect fertility and blood pressure regulation and contribute to heart-rate changes and cardiovascular disease.[12]

Mercury in Commercially-Caught Fish

In 2004, EPA and the Food and Drug Administration (FDA) issued a joint national fish consumption advisory. The joint advisory advises women who may become pregnant, pregnant women, nursing mothers, and young children not to eat shark, swordfish, king mackerel, or tilefish because they contain high levels of mercury. The advisory warns the same populations to limit their consumption of albacore "white tuna" or tuna steaks to six ounces or less per week and fish that have lower levels of mercury, such as shrimp, canned light tuna, salmon, pollock, and catfish, to 12 ounces or less per week.[13] Six ounces of fish is an average cooked meal, about the size of a can of tuna.

EPA and FDA advise consumers to check local advisories about the safety of fish caught in local lakes, rivers, and coastal areas. If no advice is available, people are advised to eat up to six ounces (one meal, cooked) per week of fish caught from local waters and not to eat any other fish during that week. EPA and FDA recommend that people follow these same recommendations when feeding fish and shellfish to young children, but to serve smaller portions.

In 2004, FDA also released data from the late 1970s to 2003 showing unsafe levels of mercury in several species of fish not included in EPA and FDA's advisory. Specifically, as detailed in Appendix A, 22 species of fish contained mercury at levels suggesting people limit their consumption to two meals per week or less.[d,14]

The Fish Consumption Advisory Approach

To address the public health threat posed by mercury pollution, state and tribal health departments, the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA), which has federal jurisdiction over commercially bought and sold fish, issue fish consumption advisories. Advisories involve a complex assessment of the level of contamination in a fish species, the size of the fish, how often an individual eats that particular species, and the health risk posed by consumption. Fish advisories are issued for contaminants other than mercury, such as PCBs and dioxins; in 2003, however, 76% of all advisories on waterways were issued at least in part because of mercury contamination.[15]

EPA provides states with guidance on issuing fish consumption advisories. The states have the responsibility for issuing specific fish consumption advisories for fish caught within state borders.[e]

[d] Based on the EPA's recommended formula for calculating consumption limits. The consumption limit (measured in kilograms/day) is equal to the EPA reference dose (measured in micrograms/ kilograms/ day) multiplied by the average body weight (measured in kilograms) and divided by the fish mercury level (measured in micrograms/kilogram). This formula assumes an average body weight of 70 kilograms, 0.1 microgram/kilogram/day as the reference dose, 30.44 as the number of days per month, and 8 ounces (or .23 kilograms, wet weight) as average meal size.

[e] State systems for issuing fish consumption advisories vary widely from state to state, resulting in a situation that is confusing for consumers and often inadequate to protect public health. Some states do not routinely monitor their waterbodies. Some states use extremely high thresholds to determine whether an advisory should be issued. In addition, the advice that states give their consumers about how much fish should be consumed varies widely. Recent surveys have shown that nearly all states inadequately protect the health of sensitive subpopulations from mercury exposure. See Environmental Working Group and U.S. PIRG Education Fund, *Brain Food: What Women Should Know About Mercury Contamination of Fish*, 2001.

Mercury in Recreationally-Caught Fish

Data released in 2004 also indicate that mercury levels in many non-commercial fish species can be high enough to warrant limiting consumption, and in some cases high enough to make the fish unsafe to eat at all.

A recent report analyzed the first available data from EPA's ongoing National Study of Chemical Residues in Lake Fish Tissue. The report found that 55% of the fish samples from inland lakes were contaminated with mercury at levels that exceed EPA's "safe" limit for women of average weight who eat fish twice a week.[f] In 29 states, mercury levels in at least half of the fish samples exceeded this limit.[16]

For recreationally-caught fish along our coasts, FDA data indicate that some of most the popular sport fish species have high levels of mercury contamination. As shown in Table A, of the most popular recreationally-caught species, six species not included in FDA's 2004 consumption advisory (Spanish mackerel, bluefish, bass, snapper, sheepshead, and weakfish) contained mercury at levels suggesting people should limit their consumption to two meals or less per week.

For the 69% of anglers who consume their catch,[17] eating mercury-contaminated fish can expose them to unsafe levels of mercury. While not all recreational anglers consume fish contaminated with mercury at unhealthy levels, some fall into patterns of fish consumption that increase their risk of exposure.[g] These include:[18]

• *Daily fish consumption over a short period of time*. Recreational anglers who spend their vacation fishing over a relatively short period of time and eat fish daily have higher mercury exposure;

• *Relatively continuous exposure*. Subsistence anglers who rely on the catch as a primary food source may be continuously exposed to mercury depending on the type of fish and where it is caught; or

• *Regular and frequent consumption*. Frequent consumption of fish can add up to high exposure levels because the body excretes mercury slowly.

Table A. Mercury Levels in Popular Recreationally-Caught Fish (1978-2003) and Safe Consumption Limits

Species	Average (ppm)	Min (ppm)	Max (ppm)	Consumption Limit (Meals Per Month)
Spanish mackerel (Gulf Of Mexico)	0.45	0.07	1.56	2
Bluefish	0.31	0.14	0.63	3
Bass (Saltwater)	0.27	0.06	0.96	3
Weakfish (sea trout)	0.25	ND*	0.74	3
Snapper	0.19	ND*	1.37	4
Sheepshead	0.13	0.02	0.63	7

Note: One part per million (ppm) is equal to one milligram per kilogram of weight.
* ND signifies "non-detectable"

Source: Analysis of U.S. FDA, "Mercury Levels in Seafood Species," 19 March 2004, downloaded from http://www.cfsan.fda.gov/~frf/sea-mehg.html, 27 September 2004.

[f] Based on EPA's reference dose, which represents the amount of mercury that can be ingested over the course of a lifetime without adverse health effects. The "safe" limit for U.S. women of average weight who eat two meals of fish per week is .13 parts per million (ppm).

[g] Studies estimate the percentage of anglers that exceed recommended consumption limits ranges from 0% to 57%. See Paul Jakus et al, "The Benefits and Costs of Fish Consumption Advisories for Mercury," October 2002.

Report Findings: A Growing Number of Waterways Under Advisory

This report analyzes all active fish consumption advisories issued by states in 2003 for local waterways due to mercury contamination and reveals that mercury advisories cover a greater area than ever before.

In 2003, 44 states issued advisories for mercury-contaminated fish, warning the general population or sensitive subpopulations to reduce or avoid consumption of at least one species of fish from local waterways. This is a 63% increase over the 27 states with active advisories in 1993. Since 2002, the number of river miles reported under advisory for mercury has increased by 67% (up from 458,000 river miles in 2002), and the number of lake acres reported under advisory for mercury has increased by 6% (up from 12.4 million lake acres in 2002).

Refer to Appendices B and E for a detailed breakdown of advisories by state.

Statewide Advisories

States are issuing an increasing number of statewide advisories. These advisories cover all inland freshwater lakes and/or rivers for at least one species of fish. In 2003, 21 states (Connecticut, Florida, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, North Dakota, New Hampshire, New Jersey, Ohio, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin) issued statewide advisories for their inland lakes and/or rivers. The newest states to this list are Montana and Washington, which added statewide advisories for inland waterways, and Wisconsin, which added a statewide advisory on all of its rivers.

Advisories on Our Lakes

Advisories cover an ever-greater extent of our lakes. In 2003, active mercury advisories covered at least 13.1 million acres of lakes (including statewide advisories), or 32% of all lake acres. As shown in Table B, the 10 states with the most lake acres under advisory in 2003 were Minnesota, Florida, Maine, Wisconsin, Michigan, Montana, North Dakota, Washington, Texas, and Illinois.

The number of lake acres reported under advisory for mercury increased by 6% in 2003 (up from at least 12.4 million acres in 2002).

Table B. States with the Most Lake Acres Under Mercury Advisory, 2003

State	Total Lake Acres Under Advisory	Percentage Under Advisory
Minnesota	3,290,101	100
Florida	2,085,120	100
Maine	986,776	100
Wisconsin	982,163	100
Michigan	887,019	100
Montana	844,802	100
North Dakota	632,016	100
Washington	466,296	100
Texas	329,784	11
Illinois	309,340	100

Source: Analysis of data provided by U.S. EPA, 2003

As detailed in Table C, 10 states increased the total amount of lake acres covered by mercury advisories in 2003; all but one

experienced a double-digit or more percentage increase.

Table C. States Increasing the Number of Lake Acres Under Advisory, 2002 to 2003

State	Total Increase in Lake Acres	Total Percentage Increase[h]
Arizona	1,887	117
California	6,192	10
Idaho	30,863	172
Indiana	5,754	12
Louisiana	5,294	28
Montana	202,206	Issued Statewide Advisory
Nebraska	1,513	48
New York	9,494	15
South Dakota	106	1
Washington	464,103	Issued Statewide Advisory

Source: Analysis of data provided by U.S. EPA, 2003

In addition to their inland lakes, Indiana, Michigan, and Pennsylvania have mercury advisories covering the Great Lakes and connecting waterways. These advisories cover 2,334 miles of Great Lake coast, estuaries, and connecting rivers on Lake Erie, Lake Superior, Lake Huron and Lake Michigan.

In 2003, several states issued additional consumption restrictions for their lakes, strengthening advisories already in place by adding a new fish to the advisory, warning more people to limit their fish consumption, or advising people to eat less of the fish under advisory.

As shown in Table D, in 2003, four states added new advisories to at least 50,605 acres of lakes already covered by *statewide* fish consumption advisories.

For example, since 2000, Kentucky has had a statewide advisory covering every single inland lake, warning women of childbearing age and children six years and younger to eat no more than one meal per week of freshwater fish from Kentucky's rivers, streams, and lakes. In 2003, Kentucky extended this advisory to all members of the general population for Metropolis Lake.

As shown in Table E, in 2003, five states further strengthened existing advisories by issuing additional restrictions to at least 19,235 acres of lakes already under advisory. For example, since 1996, Arizona has had an advisory covering 90 acres of Arivaca Lake warning the general population to avoid consuming all fish from the lake. In 2003, Arizona strengthened this advisory, warning the general population to avoid consuming all other aquatic organisms from Arivaca Lake as well.

Table D. New Restrictions Added in 2003 to Lakes Already Under Statewide Advisory

State	Lakes with New Consumption Restrictions	Acres Covered by Additional Restrictions
Illinois		1,005
	Arrowhead Lake	
	Devil's Kitchen Lake	
	Lake in the Hills	
	Midlothian Reservoir	
	Monee Reservoir	
Kentucky	Metropolis Lake	34
Minnesota	Numerous Lakes	Not available*
North Dakota		49,566
	Lake Sakakawea	
	Devils Lake	
Total		**50,605**

* Did not report extent of lake advisories issued in 2003.

Source: Analysis of data provided by U.S. EPA, 2003

[h] The increase in lake acres does not include any increases due to states that, for the first time in 2003, reported to EPA the extent of advisories that they had issued in previous years.

Table E. New Restrictions Added in 2003 to Lakes Already Under Specific Advisory

State	Lakes with New Consumption Restrictions	Acres Covered by Additional Restrictions
Arizona		140
	Arivaca Lake	
	Pena Blanca Lake	
California	Black Butte Reservoir	23
Idaho	Salmon Falls Creek Reservoir	3,400
Mississippi		15,371
	Enid Lake	
	Archusa Creek Water Park	
South Carolina		301
	Lake HB Robinson	
	Langley Pond	
Total		**19,235**

Source: Analysis of data provided by U.S. EPA, 2003

Advisories on Our Rivers

States are issuing advisories covering an increasing number of miles of our rivers. Active mercury advisories were in effect for at least 767,000 miles of river (including statewide advisories) in 2003, or 22% of all river miles. As shown in Table F, the states with the most river miles under advisory were Montana, Kentucky, Washington, Wisconsin, Pennsylvania, Florida, Missouri, Indiana, Illinois, and Maine.

In the last year, the number of river miles reported under advisory for mercury increased by 67% (up from 458,000 miles in 2002). As detailed in Table G, six of the nine states that increased the percentage of river miles under advisory in 2003 did so by at least a double-digit percentage increase.

Table F. States with Most River Miles Under Mercury Advisory, 2003

State	Total River Miles Under Advisory	Percentage Under Advisory
Montana	176,750	100
Kentucky	89,431	100
Washington	73,886	100
Wisconsin	57,698	100
Pennsylvania	53,962	100
Florida	51,858	100
Missouri	51,015	100
Indiana	35,673	100
Illinois	32,190	100
Maine	31,672	100

Source: Analysis of data provided by U.S. EPA, 2003

Table G. States Increasing Number of River Miles Under Advisory, 2002 to 2003

State	Total Increase in River Miles	Total Percentage Increase[i]
California	30	75
Louisiana	157	21
Michigan*	not available	not available
Minnesota*	not available	not available
Montana	176,716	Added statewide advisory
Nebraska	82	132
South Carolina	17	1
Washington	73,886	Added statewide advisory
Wisconsin	57,492	Added statewide advisory

* Michigan and Minnesota increased the extent of their rivers under advisory in 2003 but did not report the number of miles that the new advisories covered.

Source: Analysis of data provided by U.S. EPA, 2003

[i] The increase in river miles does not include any increases due to states that, for the first time in 2003, reported to EPA the extent of advisories that they had issued in previous years.

As detailed in Table H and Table I, eight states (Illinois, Indiana, Kentucky, Louisiana, Mississippi, North Dakota, Ohio, and South Carolina) strengthened existing advisories for rivers in 2003. These new advisories apply to 1,340 miles of rivers already covered by statewide advisories and 968 miles already covered by individual advisories issued in previous years.

Table H. New Restrictions Added in 2003 to Rivers Already Under Statewide Advisory

State	Rivers with New Consumption Restrictions	Miles Covered by Additional Restrictions
Illinois	Chicago River	41
Indiana		381
	Anderson River	
	Eel River	
	Greens Fork	
	Indian Creek	
	Laughery Creek	
	Little Blue River	
	Richland Creek	
	South Fork Blue River	
Kentucky	Ohio River	674
North Dakota		10
	Missouri River	
	Red River	
Ohio	Ashtabula River	234
	Grand River	
	Great Miami River	
	Sandusky River	
	Scioto River	
	St. Mary's River	
Total		**1,340**

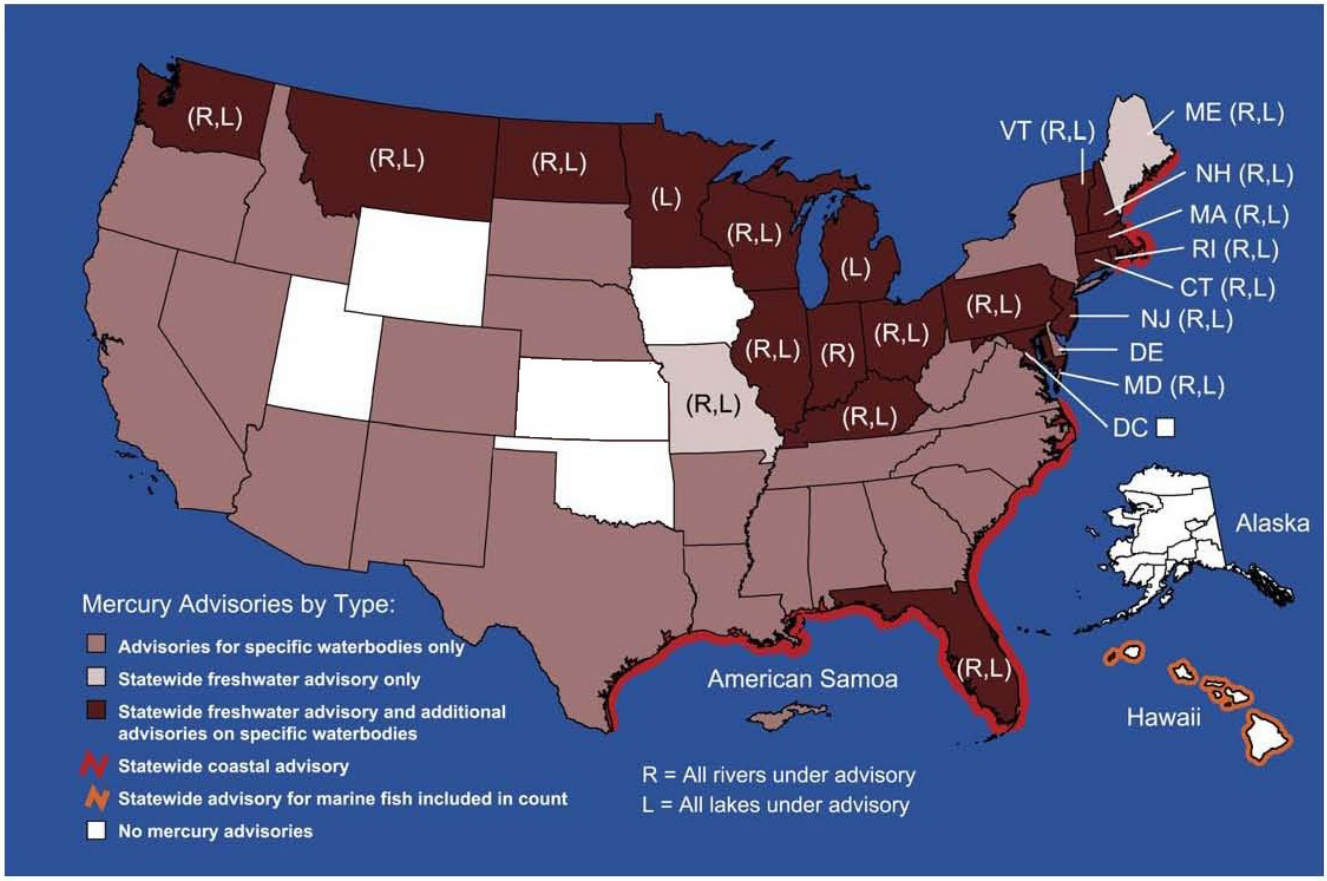
Source: Analysis of data provided by U.S. EPA, 2003

Table I. New Restrictions Added in 2003 to Rivers Already Under Specific Advisory

State	Rivers with New Consumption Restrictions	Miles Covered by Additional Restrictions
Louisiana	Ouachita River	142
Mississippi		246
	Bogue Chitto River	
	Escatawpa River	
	Pascagoula River	
	Pearl River	
	Yockanookany River	
	Yocona River	
South Carolina		580
	Black River	
	Lumber River	
	Lynches River	
	New River	
	North Fork Edisto River	
	North Santee River	
	Savannah River	
	South Fork Edisto River	
Total		**968**

Source: Analysis of data provided by U.S. EPA, 2003

Figure 1. Map of Fish Consumption Advisories for Mercury Pollution, 2003



Source: U.S. EPA, National Maps and Graphics, downloaded 27 September 2004 from http://epa.gov/waterscience/presentations/fishslides/2003_files/frame.htm. This map was modified from the version obtained from EPA; EPA had erroneously portrayed Kansas as having active fish consumption advisories for mercury.

Coasts under Advisory

Our nation's coastal waters, including estuaries, coastal wetlands, coral reefs, mangrove forests, and upwelling areas, also face threats from mercury pollution. These areas are vitally important for fish and fishing. They are the home of spawning grounds, nurseries, and fisheries and provide shelter and food for fish.[19]

Fish consumption advisories for mercury and other contaminants cover more than 70% of the coastline miles of the contiguous 48 states.[20] EPA estimates that 92% of the Atlantic coast and 100% of the Gulf coast was under advisory in 2003.[21]

As detailed in Table J, in 2003 12 states issued statewide advisories for their entire coastal areas for at least one species of fish. These advisories cover 16,569 miles of our nation's coastline, an increase of 930 miles over 2002 due to Hawaii placing all of its coasts under advisory in 2003.

Table J. U.S. Coasts Covered by Mercury Advisories, 2003

State	Coastal Miles Under Advisory
Alabama	254
Florida	5,161
Georgia	255
Hawaii	930
Louisiana	1,784
Massachusetts	1,116
Maine	2,064
Mississippi	220
North Carolina	1,877
Rhode Island	247
South Carolina	476
Texas	2,185
Total	**16,569**

Source: U.S. EPA, 2003

In Maine, a tribal advisory for mercury covers all fish and lobster along the state's coast. California, Delaware, Florida, Georgia, South Carolina, and Washington all have additional mercury advisories specifically for estuarine waters.

In its draft Coastline Condition Report, EPA studied 90 specific contaminants from 653 sites throughout the estuarine waters of the United States (except Louisiana, Florida, and Puerto Rico), finding that 42% of the testing sites had fish with mercury contaminant levels above 0.12 parts per million (ppm).[i] This level falls only slightly below what EPA considers a "safe" limit for U.S. women of average weight who consume two average-sized meals of fish per week (0.13 ppm). EPA found fish at 18% of the sites with mercury concentrations close to twice this level.[22]

Public Lands under Advisory

Our public lands, many of which have been specifically protected for recreational uses, are also at risk due to mercury pollution.

Arkansas has issued a fish consumption advisory for the Saline River, located in the 65,000 acre Felsenthal Wildlife Refuge. The refuge is "crisscrossed by an intricate system of rivers, creeks, sloughs and lakes meandering through extensive bottomland hardwood forests with the adjoining higher elevations occupied by pine and upland hardwoods."[23] Tissue samples suggest that birds and mammals living in the refuge, particularly strict fish eaters, may be at risk of high mercury exposure.[24]

[i] These levels existed in at least one composite fish sample (made up of 5 to 10 fish of a target species per site). While composite sampling provides a good indication of average mercury concentrations of different fish species, it levels out peak concentrations in individual fish. Researchers have found that a pregnant woman who eats just one serving containing very high levels of mercury (2.0 ppm or higher) could expose her baby to dangerous levels of mercury.

Florida has issued fish consumption advisories in the Arthur Marshal Loxahatchee National Wildlife Refuge, Crystal River National Wildlife Refuge, St. Marks National Wildlife Refuge, and St. Vincent National Wildlife Refuge. The state also has issued advisories in the Everglades National Park - Shark River Slough, Everglades Water Conservation Areas 2 and 3, Holeyland Wildlife Management Area, and the Santiago Fish Management Area.

New Jersey has issued a mercury fish consumption advisory that covers waterbodies in the Pinelands National Reserve, which includes portions of seven southern New Jersey counties and encompasses more than one million acres of farms, forests and wetlands. In 1978, Congress established this area as the country's first national reserve, or an area of nationally significant resources that is protected through local land use management and supported by federal financial and technical assistance.[25]

Massachusetts has issued an advisory covering the Holland Pond and East Brimfield Reservoir in the Quinebaug and Shetucket Rivers Valley National Heritage Corridor. This largely rural area has been called "the last green valley" in the Boston-to-Washington corridor.[26]

Kentucky has issued a fish advisory for waters in the state-protected West Kentucky Wildlife Management Area. According to a local tourism website, this area is known for its "tupelo swamp, riverside cottonwood trees where eagles perch, native prairie vegetation, and a variety of wildflowers."[27] Regrettably, officials warn anglers not to eat the largemouth bass in 152 acres of this management area.

National Park Service employees also have flagged mercury as a concern in many other nationally protected lands, even though the waterways may not be under fish consumption advisory. A 2003 informal National Park Service survey found that officials at several national parks and protected areas were informing visitors of potential mercury concerns due to contaminated fish and mercury deposition (Table K).[28]

Table K. National Parks with Mercury Problems, as Identified by National Park Service Employees, 2003

National Park Service Area	Identified Mercury Concerns
Acadia, ME	Elevated mercury concentrations in wet deposition, elevated mercury levels in fish. Acadia included in statewide fish consumption advisory.
Big Bend, TX	Elevated mercury concentrations in wet deposition.
Catoctin Mountain Park, MD	Mercury deposition at park.
Isle Royale, MI	Elevated mercury levels found in fish. Concern about elevated mercury in wildlife, water, and sediment. Concern about mercury in food web.
Lake Meredith Natl Recreation Area (NRA), TX	Elevated mercury levels found in fish (walleye). Lake Meredith NRA included in state fish consumption advisory.
Mount Rainier, WA	Elevated levels of mercury were found in lake samples collected at park; did not exceed health standards.
North Cascades, WA	Elevated levels of mercury found in lake samples collected at park; did not exceed health standards.
Olympic, WA	Mercury levels in wet deposition.
Rocky Mountain, CO	Concern for elevated mercury levels in precipitation and possibly in fish tissue.
Shenandoah, VA	Elevated mercury concentrations in wet deposition.

Source: National Park Service, Park Unit Overview, May 2003, downloaded 27 September 2004 from http://www2.nature.nps.gov/air/Studies/air_toxics/mercury.htm. Personal communication with Darwin Morse, National Park Service, 14 September 2004.

Safe Eating Guidelines

Increasingly, states are issuing "no restriction" advisories, or "Safe Eating Guidelines." States issue these advisories to let people know that some fish species, or sizes of species, are safe to eat for some or all segments of the population.[k] Safe Eating Guidelines for mercury now cover at least 1.1 million acres of lakes and 65,000 miles of rivers. Connecticut and Wisconsin have issued statewide "no restriction" advisories for trout and yellow perch, respectively.[l] In 2003, states added "no restriction" advisories on at least 854 miles of rivers and 4,534 acres of lakes.

This is good news for people's health and recreational fishing, as it indicates that states have deemed certain fish safe for consumption. Unfortunately, "no restriction" advisories only make up about 8% of all lake and river areas under advisory. Further, in 2003, states issued additional consumption restrictions on four times more lake acres than they issued "no restriction" advisories.

[k] This report's measure of waterways "under advisory" does not include these advisories.

[l] For the most part, "no restriction" advisories coexist with active advisories, as each applies to different populations, certain species, and/or species of varying sizes.

Mercury Contamination Threatens Recreational Fishing

Mercury contamination is a threat to recreational fishing, a multi-billion dollar industry that is critical to our national and state economies. In 2001, the most recent year for which data are available, approximately 34.1 million Americans took a total of 437 million fishing trips and spent 557 million days fishing.[29] In 2001, recreational fishing in America:[30,31]

- Generated more than $35.6 billion in spending on food, lodging, and transportation for fishing trips; fishing and auxiliary equipment; and other items;
- Generated more than $116 billion in total economic output;
- Supported more than one million jobs;
- Created more than $30.1 billion in household income (salaries and wages);
- Added more than $1.9 billion in sales tax revenues;
- Added more than $470 million in state income tax revenues; and
- Generated $4.88 billion in federal income tax revenues.

Mercury advisories could hurt this important industry. Studies indicate that due to existing fish consumption advisories, 37% of those polled in one area took fewer fishing trips, 30% in another area fished for fewer days, and between 26% and 31% changed fishing sites. Another study indicates that 36% of the anglers polled would change their fishing site if it had a fish consumption advisory.[32]

Even a small dent in the recreational fishing industry could mean large economic losses. Of all the money spent on recreational fishing in 2001, nearly $28 billion – or close to 80% – was spent in states that have issued fish consumption advisories due to mercury.

Six of the 10 states with the most lake acres under mercury advisory, including Florida Michigan, Minnesota, Texas, Washington, and Wisconsin, are in the top 10 for the amount of money spent on recreational fishing. Florida, Washington, and Wisconsin also are three of the 10 states with the largest number of river miles under advisory. In fact, 11 of the 21 states with statewide mercury advisories covering all of their inland lakes and/or rivers, including Florida, Illinois, Kentucky, Michigan, Minnesota, Missouri, New Jersey, Ohio, Pennsylvania, Washington, and Wisconsin, also fall in the top 20 states for expenditures on recreational fishing (Table L).[33] See Appendix B for total spending on recreational fishing in 2001 for each state.

Anglers spend considerable sums of money fishing on our Great Lakes, along our coasts, and in public lands. In 2001, anglers fishing the Great Lakes spent $1.3 billion alone on trip and equipment related expenditures.[m,34] In Michigan and New York, more than a quarter of the money spent on fishing is spent on fishing the Great Lakes (Table M). In 2001, anglers spent $8.4 billion fishing the salt waters off our coasts.[35] Millions of visitors also fish on our public lands every year. In 1999, people took six million fishing trips to National Wildlife Refuges alone.[36]

[m] The U.S Fish and Wildlife Service does not include money spent on items such as magazine subscriptions and membership dues in its data on expenditures for fishing on the Great Lakes.

Table L. 20 States Receiving Most Economic Value from Recreational Fishing, 2001

State	Money Spent on Recreational Fishing, 2001	Statewide Mercury Advisory for Rivers and/or Lakes?
Florida	$4,083,409,000	Yes
California	$2,029,581,000	
Texas	$1,950,902,000	
Minnesota	$1,284,522,000	Yes
North Carolina	$1,118,028,000	
New York	$1,073,019,000	
Wisconsin	$1,005,149,000	Yes
Washington	$853,761,000	Yes
Michigan	$838,558,000	Yes
Ohio	$761,619,000	Yes
Missouri	$745,514,000	Yes
Alabama	$723,467,000	
Louisiana	$703,373,000	
New Jersey	$699,826,000	Yes
Colorado	$645,891,000	
Oregon	$601,780,000	
Illinois	$598,376,000	Yes
Pennsylvania	$580,351,000	Yes
South Carolina	$558,731,000	
Kentucky	$544,660,000	Yes

Source: United States Fish and Wildlife Service, 2001 National Survey of Fishing, Hunting and Wildlife Associated Recreation, downloaded from http://www.census.gov/prod/2002pubs/FHW01.pdf, 27 September 2004.

Table M. Money Spent Fishing the Great Lakes, 2001

State	$$ Spent on Great Lakes Fishing	Total $$ Spent On Fishing	% Spent on Great Lakes Fishing
Michigan	$321,750,000	$838,558,000	38%
New York	$298,310,000	$1,073,019,000	28%
Ohio	$144,791,000	$761,619,000	19%
Wisconsin	$61,228,000	$1,005,149,000	6%
Indiana*	$47,454,000	$518,863,000	9%
Minnesota*	$25,303,000	$1,284,522,000	2%
Illinois	$21,142,000	$598,376,000	4%
Pennsylvania*	$17,414,000	$580,351,000	3%

*based on small sample size

Source: United States Fish and Wildlife Service, 2001 National Survey of Fishing, Hunting and Wildlife Associated Recreation, downloaded from www.census.gov/prod/2002pubs/FHW01.pdf and www.census.gov/prod/www/abs/fishing.html, 27 September 2004.

Addressing the Problem at the Source

As an element of the earth's crust, mercury is emitted by natural sources such as volcanoes and forest fires. It also is released from manmade activities such as the combustion of fossil fuels and mercury-containing wastes, manufacturing, and the roasting and smelting of ore. Because mercury never degrades, the amount of mercury in the environment results from the combination of past and current mercury disposal and emissions.[37]

Power plants are the largest source of mercury in the U.S., accounting for more than 41% of all U.S. manmade emissions.[38] Coal-fired power plants emitted 48 tons of mercury in 1999.[39] Power plants are the only major mercury polluters yet to be regulated under federal clean air standards. EPA estimates that roughly 60% of the mercury deposited domestically comes from U.S. industrial sources.[40] More specifically, EPA estimates that 33% of the mercury deposited in U.S. waterways is from U.S. power plants, though deposition rates are much higher in some areas.[41]

Texas, Ohio, Pennsylvania, Indiana, and Illinois led the nation for the most mercury air emissions from power plants in 2002, the most recent year for which data are available. Table N shows the 10 states with the highest mercury air emissions from power plants.[42] Table O shows the 10 power plants in the country with the highest mercury air emissions.[43] See Appendix C for total mercury emissions to air from power plants by state. See Appendix D for air emissions by individual power plant.

Table N. States with the Most Mercury Emissions to Air from Power Plants, 2002

State	Emissions (lbs)
Texas	9815
Ohio	7358
Pennsylvania	7002
Indiana	4927
Illinois	4318
Alabama	3931
West Virginia	3680
Kentucky	3540
North Carolina	3434
Missouri	3084

Source: U.S. EPA, 2002 Toxics Release Inventory, downloaded from www.epa.gov/triexplorer, 27 September 2004.

Table O. Power Plants Emitting the Most Mercury Pollution to Air, 2002

Facility	State	City	Air Emissions (lbs)
Limestone	TX	Jewett	1,800
TXU Monticello	TX	Mt. Pleasant	1,324
AEP Conesville	OH	Conesville	1,300
Reliant Keystone	PA	Shelocta	1,235
Jeffrey Energy Center	KS	Saint Marys	1,216
W.A. Parish	TX	Thompsons	1,100
Alabama Power Miller	AL	Quinton	1,077
Martin Lake	TX	Tatum	1,027
AEP H.W. Pirkey Plant	TX	Hallsville	1,000
Georgia Power Scherer	GA	Juliette	943

Source: U.S. EPA, 2002 Toxics Release Inventory, downloaded from www.epa.gov/triexplorer, 27 September 2004.

The Bush Administration's Flawed Plan

The solution is simple. Protecting public health and recreational fishing demands that we reduce mercury emissions from all sources, starting with the largest, uncontrolled source—coal-burning power plants. The Clean Air Act is designed to provide these reductions. Under Section 112 of the Clean Air Act, toxic substances such as mercury must be reduced as much as is technologically feasible, meeting a "maximum achievable control technology" (MACT) standard within three years. Two years ago, EPA estimated that under a MACT standard, power plants could reduce mercury emissions by 90% using existing technologies, bringing mercury emissions down to roughly five tons per year by 2008.[44]

Unfortunately, in January 2004, the Bush administration issued a proposal that would not come close to achieving the maximum reductions in mercury emissions required by the Clean Air Act and necessary to protect public health. The Bush administration's proposal abandons the MACT approach; instead, the proposal treats toxic mercury from power plants as if it were a conventional air pollutant, like soot and smog.

The proposal would cap power plant mercury emissions at 34 tons in 2010 and 15 tons in 2018, which represent 29% and 69% reductions, respectively.[45] This means that instead of being required to reduce mercury emissions to five tons by 2008 – as would be accomplished by faithful implementation of the Clean Air Act – the Bush plan proposes to allow power plants to emit six to seven times more mercury for more than a decade longer.[n]

Further, the administration's own analysis shows that even these weak targets would not be met on EPA's timeline, if ever.[46]

In addition, the Bush administration's plan does not require each and every power plant to make emissions reductions. Instead, some plants would be able to avoid making reductions by buying or trading mercury pollution credits from other plants. Mercury trading substantially increases the likelihood and severity of "hotspots," or communities with high levels of mercury deposition.[47] This is particularly troubling due to mercury's persistent, bio-accumulative properties.

Requiring plant-specific controls that dramatically reduce mercury emissions, on the other hand, would go a long way towards solving local mercury problems. The state of Florida, EPA, and the U.S. Geological Survey recently issued a study that concluded that the levels of mercury found in largemouth bass and other wildlife in the Everglades has declined by 80% since state and federal agencies required municipal and medical-waste incinerators to cut their mercury emissions.[48]

[n] EPA's proposal also would relieve the power sector of any obligation to control other hazardous air pollutants such as lead, arsenic, chromium, dioxin, acid gases, and organic compounds, among others. See National Environmental Trust, *Beyond Mercury*, August 2004. State authorities cite some of these pollutants, such as dioxin, arsenic and lead, as the reason for issuing non-mercury fish consumption advisories.

Conclusion and Recommendations

Once mercury is in the food supply, it puts all of our health at risk, but especially sensitive subpopulations such as children and recreational anglers who consume large amounts of fish. The increasing number and breadth of mercury advisories indicates the vast extent of the mercury contamination problem. In addition to compromising public health, this pollution is a threat to recreational fishing, a treasured American pastime and multi-billion dollar industry that is vital to our national and state economies.

The Bush administration's proposal for dealing with mercury emissions from power plants is severely flawed. The Bush administration should abandon its current mercury plan and faithfully implement the Clean Air Act to reduce mercury emissions from power plants by at least 90% from existing levels by 2008.

Methodology

This report analyzes data reported to EPA by the states in 2003. While the EPA examines state advisory data nationally, it does not provide analysis by state; in addition, we have attempted to correct a number of problems with EPA's data. For the most recent information on fish consumption advisories for local waterways, refer to EPA's searchable database at www.epa.gov/ost/fish/.

The data in this report do not necessarily mirror similar data calculations by the states, which may use different data and methodologies. These data are intended to be a general reference for the extent of mercury contamination and should not be relied upon for advice on fish consumption. People should consult their state departments of health to receive the most recent information on how much locally-caught fish, if any, can be safely consumed.

Data Source and Parameters: EPA provided us with data on active mercury fish consumption advisories for specific species in all waterbodies between December 31, 2002 and December 31, 2003. Excluded from the summary data in Appendix B, but provided by EPA, are advisories issued by territories.

Geographic Area of Waterbodies Under Fish Consumption Advisory by State: This report follows EPA's methodology of using the geographic area for each mercury advisory as a proxy for extent of mercury contamination. To determine the number of miles/acres/square miles under advisory for each type of waterbody in each state, we grouped the data by state and waterbody type, as classified by EPA, and totaled the area covered by fish consumption advisory for each waterbody type. Often a fish consumption advisory for a specific waterbody contains consumption advice for different fish species of varying sizes. To avoid double counting the acreage or mileage of a waterbody under advisory, we only included a specific waterbody or segment of waterbody once in our calculations, regardless of the number of species or variations under advisory for that particular waterbody. We also did not include "no restriction" advisories in our calculations for the extent of advisory coverage.

Number of Advisories by State: We followed EPA's methodology of counting the number of waterbodies or segments of waterbodies, or in some cases waterbody types (e.g., all lakes), covered by advisories. While EPA continues to calculate this number, it no longer uses it as the primary measure of the geographic extent of mercury contamination. Because a state can issue an advisory for as little as a single portion of a small waterbody and as much every waterbody of a particular type in a state (e.g., all lakes), an "advisory" is not useful as a proxy for the geographic extent of contamination.

Statewide Advisories: Statewide advisories are issued for specific waterbody types (e.g., all lakes) or apply to the entire state for specific fish species and species for specific sizes. For states with lakes and/or rivers under statewide advisory, EPA provided us with data for each state's total lake acres and/or river miles under advisory.

Increases in River Miles and Lake Acres Under Advisory in Each State: To calculate

the total increase in lake acres and/or river miles under advisory between 2002 and 2003, we looked only at advisories issued for new waterbodies or new parts of waterbodies in 2003. In previous years, a state may have failed to report the extent of a waterbody under advisory; if the state reported that extent for the first time in 2003, we did not include this in our totals when calculating the extent of the advisories issued in 2003.

We did, however, ensure that we included these completed advisories in the total river miles and lake acres covered by advisories in 2002 in order to accurately calculate the percent increase in 2003.

New Restrictions Added to Old Advisories: In addition, we analyzed new advisories issued in 2003 that strengthened advisories already in place. We defined "new restrictions" on advisories already in place as those adding a new fish to the advisory, warning more people to limit their fish consumption, or advising people to eat less of the fish under advisory.

Data Gaps and Limitations: There are several important gaps in the data EPA provided.

• For a number of advisories, states failed to include data on the acreage or number of miles of a waterbody under advisory. Thus, the calculation for geographic area under advisory by state is likely an underestimate of the true geographic area under advisory.

• Some of the EPA data for advisories is missing units (e.g., acres or miles). For purposes of the summary data in this report, we assumed that if a state listed its other advisories for a specific waterbody type (e.g., lakes) using specific units (e.g., acres), that the state used the same unit for that type of waterbody across the state.

Comparing States: Because of the lack of uniform procedures for testing for mercury contamination across states or uniform standards for issuing advisories, it is not possible to say that the top ranked states for the number of fish advisories correspond to the states with the most mercury contamination. Some states are far more precautionary than others for the standard they use for fish contamination, the amount of monitoring of fish within waterbodies, and the amount of testing done before a fish advisory is issued.

Appendix A. High Mercury Levels in Commercial Fish and Seafood Not Covered by FDA's 2004 Consumption Advisory, 1978-2003[o]

Species	Mean (ppm)	Minimum (ppm)	Maximum (ppm)	Consumption Limit (Meals Per Month)
GROUPER	0.55	0.07	1.21	1
ORANGE ROUGHY	0.54	0.30	0.80	1
MARLIN	0.49	0.10	0.92	1
MACKEREL SPANISH (Gulf of Mexico)	0.45	0.07	1.56	2
BLUEFISH	0.31	0.14	0.63	3
LOBSTER (Northern/American)	0.31	0.05	1.31	3
CROAKER WHITE (Pacific)	0.29	0.18	0.41	3
SCORPIONFISH	0.29	0.02	1.35	3
BASS (Saltwater)	0.27	0.06	0.96	3
HALIBUT	0.26	ND	1.52	3
WEAKFISH (Sea Trout)	0.25	ND	0.74	3
SABLEFISH	0.22	ND	0.70	4
BUFFALO FISH	0.19	0.05	0.43	4
SNAPPER	0.19	ND	1.37	4
MACKEREL SPANISH (S. Atlantic)	0.18	0.05	0.73	5
MONKFISH	0.18	0.02	1.02	5
CARP	0.14	0.01	0.27	6
PERCH (Freshwater)	0.14	ND	0.31	6
SKATE	0.14	0.04	0.36	6
SHEEPSHEAD	0.13	0.02	0.63	7
TUNA (LIGHT CANNED)	0.12	ND	0.85	7
JACKSMELT	0.11	0.04	0.05	8
COD	0.11	ND	0.42	8

ND = Non-detectable

Source: Analysis of data provided by U.S. FDA, "Mercury Levels in Seafood Species," 19 March 2004, downloaded from http://www.cfsan.fda.gov/~frf/sea-mehg.html, 27 September 2004.

[o] This list does not include albacore tuna, shark, swordfish, tilefish, or king mackerel, which are included in FDA's 2004 consumption advisory. FDA advises women who may become pregnant, pregnant women, nursing mothers, and young children not to eat shark, swordfish, king mackerel, or tilefish because they contain high levels of mercury.

Appendix B. State-by-State Mercury Advisory Totals and Money Spent on Recreational Fishing

State	# of Mercury Advisories	Lake Acres Under Specific Advisory	Lake Acres Under Statewide Advisory	Total Lake Acres	River Miles Under Specific Advisory	River Miles Under Statewide Advisory	Total River Miles	Total Spent on Recreational Fishing in State, 2001
AL	17	6	0	**6**	271	0	**271**	$723,467,000
AR	20	3,659	0	**3,659**	260	0	**260**	$445,778,000
AZ	10	3,504	0	**3,504**	0	0	**0**	$336,293,000
CA	23	70,216	0	**70,216**	70	0	**70**	$2,029,581,000
CO	5	17,105	0	**17,105**	0	0	**0**	$645,891,000
CT	11	Statewide	64,973	**64,973**	Statewide	5,830	**5,830**	$224,139,000
DE	3	79	0	**79**	0	0	**0**	$69,956,000
FL	65	Statewide	2,085,120	**2,085,120**	Statewide	51,858	**51,858**	$4,083,409,000
GA	123	41,079	0	**41,079**	2,587	0	**2,587**	$543,504,000
HI	1*	0	0	**0**	0	0	**0**	$107,002,000
ID	7	48,846	0	**48,846**	0	0	**0**	$310,872,000
IL	10	Statewide	309,340	**309,340**	Statewide	32,190	**32,190**	$598,376,000
IN	172	54,038	0	**54,038**	Statewide	35,673	**35,673**	$518,863,000
KY	6	Statewide	228,385	**228,385**	Statewide	89,431	**89,431**	$544,660,000
LA	36	24,460	0	**24,460**	915	0	**915**	$703,373,000
MA	99	Statewide	151,173	**151,173**	Statewide	8,229	**8,229**	$464,991,000
MD	1	Statewide	77,965	**77,965**	Statewide	17,000	**17,000**	$480,185,000
ME	4	Statewide	986,776	**986,776**	Statewide	31,672	**31,672**	$250,939,000
MI	91	Statewide	887,019	**887,019**	521	0	**521**	$838,558,000
MN	1,110	Statewide	3,290,101	**3,290,101**	4,144	0	**4,144**	$1,284,522,000
MO	1	Statewide	288,315	**288,315**	Statewide	51,015	**51,015**	$745,514,000
MS	11	35,324	0	**35,324**	264	0	**264**	$210,697,000
MT	28	Statewide	844,802	**844,802**	Statewide	176,750	**176,750**	$292,050,000
NC	2	227,164	0	**227,164**	4,361	0	**4,361**	$1,118,028,000
ND	5	Statewide	632,016	**632,016**	Statewide	11,868	**11,868**	$159,023,000
NE	20	4,666	0	**4,666**	144	0	**144**	$146,359,000
NH	7	Statewide	163,012	**163,012**	Statewide	10,881	**10,881**	$164,634,000
NJ	85	Statewide	24,000	**24,000**	Statewide	6,450	**6,450**	$699,826,000
NM	26	29,519	0	**29,519**	93	0	**93**	$176,476,000
NV	2	23	0	**23**	549	0	**549**	$216,721,000
NY	39	74,875	0	**74,875**	155	0	**155**	$1,073,019,000
OH	40	Statewide	188,461	**188,461**	Statewide	29,113	**29,113**	$761,619,000
OR	12	16,058	0	**16,058**	460	0	**460**	$601,780,000
PA	77	Statewide	161,445	**161,445**	Statewide	53,962	**53,962**	$580,351,000
RI	9	Statewide	17,328	**17,328**	Statewide	1,106	**1,106**	$105,649,000
SC	62	45,804	0	**45,804**	1,749	0	**1,749**	$558,731,000
SD	4	10,219	0	**10,219**	0	0	**0**	$182,480,000
TN	2	0	0	**0**	6	0	**6**	$480,221,000
TX	12	329,784	0	**329,784**	2	0	**2**	$1,950,902,000
VA	6	0	0	**0**	134	0	**134**	$517,802,000

State	# of Mercury Advisories	Lake Acres Under Specific Advisory	Lake Acres Under Statewide Advisory	Total Lake Acres	River Miles Under Specific Advisory	River Miles Under Statewide Advisory	Total River Miles	Total Spent on Recreational Fishing in State, 2001
VT	10	Statewide	228,383	**228,383**	Statewide	5,264	**5,264**	$92,536,000
WA	4	Statewide	466,296	**466,296**	Statewide	73,886	**73,886**	$853,761,000
WI	85	Statewide	982,163	**982,163**	Statewide	57,698	**57,698**	$1,005,149,000
WV	1	0	0	**0**	310	0	**310**	$102,281,000

Total Active Advisories in U.S. in 2003	**2,364**
Total Lake Acres (Including Statewide Advisories)	**13,113,501**
Total River Miles (Including Statewide Advisories)	**766,871**
Total Dollars Spent on Recreational Fishing in States with Mercury Advisories, 2001	**$27,999,968,000**

* Hawaii's only advisory is a statewide advisory for its 930 miles of coastline.

Appendix C. Mercury Air Emissions from Power Plants by State or Territory, 2002

State	Emissions (lbs)
Texas	9815
Ohio	7358
Pennsylvania	7002
Indiana	4927
Illinois	4318
Alabama	3931
West Virginia	3680
Kentucky	3540
North Carolina	3434
Missouri	3084
Georgia	2749
Wisconsin	2615
Michigan	2589
Florida	2411
North Dakota	2365
Iowa	2132
Tennessee	2130
Kansas	2048
Maryland	1900
Wyoming	1762
Minnesota	1572
Arizona	1561
Virginia	1290
Louisiana	1262
Oklahoma	1255

State	Emissions (lbs)
New Mexico	1210
New York	1182
Montana	875
Arkansas	820
South Carolina	674
Mississippi	651
Nevada	524
New Jersey	477
Utah	454
Nebraska	414
Colorado	356
Hawaii	280
Delaware	266
Washington	265
South Dakota	263
Puerto Rico	212
Massachusetts	190
Virgin Islands	171
Oregon	143
Connecticut	100
California	16
New Hampshire	16
Alaska	11
Total	**90,300**

Source: U.S. EPA, 2002 Toxics Release Inventory, downloaded from www.epa.gov/triexplorer 27 September 2004.

Appendix D. Mercury Air Emissions by Power Plant, 2002

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
LIMESTONE ELECTRIC GENERATING STATION	TX	JEWETT	LIMESTONE	1,800
TXU MONTICELLO STEAM ELECTRIC STATION & LIGNITE MINE	TX	MOUNT PLEASANT	TITUS	1,324
AMERICAN ELECTRIC POWER CONESVILLE PLANT	OH	CONESVILLE	COSHOCTON	1,300
RELIANT ENERGY KEYSTONE POWER PLANT	PA	SHELOCTA	ARMSTRONG	1,235
JEFFREY ENERGY CENTER	KS	SAINT MARYS	POTTAWATOMIE	1,216
W.A. PARISH ELECTRIC GENERATING STATION	TX	THOMPSONS	FORT BEND	1,100
ALABAMA POWER CO MILLER STEAM PLANT	AL	QUINTON	JEFFERSON	1,077
MARTIN LAKE STEAM ELECTRIC STATION & LIGNITE MINE	TX	TATUM	RUSK	1,027
AMERICAN ELECTRIC POWER H.W. PIRKEY POWER PLANT	TX	HALLSVILLE	HARRISON	1,000
GEORGIA POWER SCHERER STEAM ELECTRIC GENERATING PLANT	GA	JULIETTE	MONROE	943
BIG CAJUN 2	LA	NEW ROADS	POINTE COUPEE	880
NORTHERN STATES POWER CO.	MN	BECKER	SHERBURNE	876
J. M. STUART STATION	OH	MANCHESTER	ADAMS	845
PLEASANT PRAIRIE POWER PLANT	WI	KENOSHA	KENOSHA	838
GREAT RIVER ENERGY COAL CREEK STATION	ND	UNDERWOOD	MC LEAN	833
L.C.R.A. FAYETTE POWER PROJECT	TX	LA GRANGE	FAYETTE	811
ALABAMA POWER CO GASTON STEAM PLANT	AL	WILSONVILLE	SHELBY	807
AMERICAN ELECTIC POWER ROCKPORT PLANT	IN	ROCKPORT	SPENCER	800
AMERICAN ELECTRIC POWER AMOS PLANT	WV	WINFIELD	PUTNAM	790
BRUCE MANSFIELD	PA	SHIPPINGPORT	BEAVER	790
AMERENUE LABADIE POWER PLANT	MO	LABADIE	FRANKLIN	763
COLSTRIP STEAM ELECTRIC STATION	MT	COLSTRIP	ROSEBUD	760
DUKE ENERGY BELEWS CREEK STEAM STATION	NC	BELEWS CREEK	STOKES	730
BRANDON SHORES & WAGNER COMPLEX	MD	BALTIMORE	BALTIMORE CITY	709
U.S. TVA PARADISE FOSSIL PLANT	KY	DRAKESBORO	MUHLENBERG	700
GEORGIA POWER BOWEN STEAM ELECTRIC GENERATING PLANT	GA	CARTERSVILLE	BARTOW	697
PROGRESS ENERGY CAROLINAS INC ROXBORO STEAM ELECTRIC PLANT	NC	SEMORA	PERSON	670
WHITE BLUFF GENERATING PLANT	AR	REDFIELD	JEFFERSON	670
AMERICAN ELECTRIC POWER GAVIN PLANT	OH	CHESHIRE	GALLIA	660
O.W. SOMMERS /J.T. DEELY/J.K. SPRUCE GENERATING COMPLEX	TX	SAN ANTONIO	BEXAR	636

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
RELIANT ENERGY SHAWVILLE STATION	PA	SHAWVILLE	CLEARFIELD	632
DUKE ENERGY MARSHALL STEAM STATION	NC	TERRELL	CATAWBA	621
DETROIT EDISON MONROE POWER PLANT	MI	MONROE	MONROE	618
CINERGY GIBSON GENERATING STATION	IN	PRINCETON	GIBSON	595
TUCSON ELECTRIC POWER SPRINGERVILLE GENERATING STATION	AZ	SPRINGERVILLE	APACHE	592
SAN JUAN GENERATING STATION	NM	WATERFLOW	SAN JUAN	591
FOUR CORNERS STEAM ELECTRIC STATION	NM	FRUITLAND	SAN JUAN	591
AMERICAN ELECTRIC POWER CARDINAL PLANT	OH	BRILLIANT	JEFFERSON	560
EME HOMER CITY GENERATION L P	PA	HOMER CITY	INDIANA	545
W. H. SAMMIS PLANT	OH	STRATTON	JEFFERSON	540
EDISON INTL. POWERTON GENERATING STATION	IL	PEKIN	TAZEWELL	527
MILTON R YOUNG STATION	ND	CENTER	OLIVER	502
AMERENUE RUSH ISLAND POWER PLANT	MO	FESTUS	JEFFERSON	502
PACIFICORP DAVE JOHNSTON PLANT	WY	GLENROCK	CONVERSE	498
RELIANT ENERGY CONEMAUGH POWER PLANT	PA	NEW FLORENCE	INDIANA	496
IPL PETERSBURG	IN	PETERSBURG	PIKE	493
WP & L COLUMBIA ENERGY CENTER	WI	PARDEEVILLE	COLUMBIA	491
PROGRESS ENERGY CRYSTAL RIVER ENERGY COMPLEX	FL	CRYSTAL RIVER	CITRUS	491
U.S. TVA KINGSTON FOSSIL PLANT	TN	HARRIMAN	ROANE	480
SOUTHERN CO BARRY STEAM PLANT	AL	BUCKS	MOBILE	476
R.M. SCHAHFER GENERATING STATION	IN	WHEATFIELD	JASPER	470
ST. JOHNS RIVER POWER PARK/NORTHSIDE GENERATING STATION	FL	JACKSONVILLE	DUVAL	465
PACIFICORP JIM BRIDGER PLANT & BRIDGER COAL CO	WY	POINT OF ROCKS	SWEETWATER	461
AMERICAN ELECTRIC POWER WELSH POWER PLANT	TX	PITTSBURG	CAMP	450
JOLIET GENERATING STATION (#9 & #29)	IL	JOLIET	WILL	431
MIRANT CHALK POINT GENERATING STATION	MD	AQUASCO	PRINCE GEORGES	428
DYNEGY MIDWEST GENERATION INC BALDWIN ENERGY COMPLEX	IL	BALDWIN	RANDOLPH	427
BIG BROWN STEAM ELECTRIC STATION & LIGNITE MINE	TX	FAIRFIELD	FREESTONE	424
FORT MARTIN POWER STATION	WV	MAIDSVILLE	MONONGALIA	421
ALLEGHENY ENERGY INC HATFIELD POWER STATION	PA	MASONTOWN	GREENE	421
BASIN ELECTRIC POWER CO-OP ANTELOPE VALLEY STATION	ND	BEULAH	MERCER	420
ALABAMA POWER CO GORGAS STEAM PLANT	AL	PARRISH	WALKER	417
U.S. TVA CUMBERLAND FOSSIL PLANT	TN	CUMBERLAND CITY	STEWART	410
BASIN ELECTRIC POWER CO-OP LARAMIE RIVER STATION	WY	WHEATLAND	PLATTE	410
LACYGNE GENERATING STATION	KS	LA CYGNE	LINN	400

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
RELIANT ENERGY AVON LAKE POWER PLANT	OH	AVON LAKE	LORAIN	398
KENTUCKY UTILITIES CO GHENT STATION	KY	GHENT	CARROLL	393
DOMINION MOUNT STORM POWER STATION	WV	MOUNT STORM	GRANT	390
AMERICAN ELECTRIC POWER MOUNTAINEER PLANT	WV	NEW HAVEN	MASON	390
KYGER CREEK STATION	OH	CHESHIRE	GALLIA	390
MIRANT MORGANTOWN GENERATING STATION	MD	NEWBURG	CHARLES	387
EDISON MOHAVE GENERATING STATION	NV	LAUGHLIN	CLARK	386
AMEREN ENERGY GENERATING NEWTON POWER STATION	IL	NEWTON	JASPER	377
J H CAMPBELL GENERATING PLANT	MI	WEST OLIVE	OTTAWA	370
DOMINION KINCAID GENERATION LLC	IL	KINCAID	CHRISTIAN	369
AN ELECTRIC POWER MUSKINGUM RIVER PLANT	OH	BEVERLY	WASHINGTON	360
CINERGY ZIMMER GENERATING STATION	OH	MOSCOW	CLERMONT	359
CHESTERFIELD POWER STATION	VA	CHESTER	CHESTERFIELD	359
CINERGY MIAMI FORT GENERATING STATION	OH	NORTH BEND	HAMILTON	356
WILL COUNTY GENERATING STATION	IL	ROMEOVILLE	WILL	353
ELECTRIC ENERGY INC	IL	JOPPA	MASSAC	351
U.S. TVA WIDOWS CREEK FOSSIL PLANT	AL	STEVENSON	JACKSON	350
MIDAMERICAN ENERGY CO GEORGE NEAL NORTH	IA	SERGEANT BLUFF	WOODBURY	350
GEORGIA POWER WANSLEY STEAM ELECTRIC GENERATING PLANT	GA	ROOPVILLE	HEARD	349
DAIRYLAND POWER COOPERATIVE ALMA SITE	WI	ALMA	BUFFALO	349
GIBBONS CREEK STEAM ELECTRIC STATION	TX	CARLOS	GRIMES	348
NAVAJO GENERATING STATION	AZ	PAGE	COCONINO	348
CINERGY BECKJORD GENERATING STATION	OH	NEW RICHMOND	CLERMONT	347
MOUNT CARMEL COGEN FACILITY	PA	MARION HEIGHTS	NORTHUMBERLAND	327
LOUISVILLE GAS & ELECTRIC CO MILL CREEK STATION	KY	LOUISVILLE	JEFFERSON	327
AMERICAN ELECTRIC POWER TANNERS CREEK PLANT	IN	LAWRENCEBURG	DEARBORN	320
EASTLAKE PLANT	OH	EASTLAKE	LAKE	320
MIDAMERICAN ENERGY CO COUNCIL BLUFFS ENERGY CENTER	IA	COUNCIL BLUFFS	POTTAWATTAMIE	320
OG&E MUSKOGEE GENERATING STATION	OK	FORT GIBSON	MUSKOGEE	320
ALABAMA POWER CO GREENE COUNTY STEAM PLANT	AL	FORKLAND	GREENE	317
SPURLOCK POWER STATION	KY	MAYSVILLE	MASON	316
DETROIT EDISON CO BELLE RIVER POWER PLANT	MI	CHINA TOWNSHIP	ST CLAIR	311
OTTER TAIL POWER CO COYOTE STATION	ND	BEULAH	MERCER	310
SUNBURY GENERATION LLC	PA	SHAMOKIN DAM	SNYDER	309
GEORGIA POWER BRANCH STEAM ELECTRIC GENERATING PLANT	GA	MILLEDGEVILLE	PUTNAM	303
CLIFTY CREEK STATION	IN	MADISON	JEFFERSON	300

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
U.S. TVA JOHN SEVIER FOSSIL PLANT	TN	ROGERSVILLE	HAWKINS	300
PPL BRUNNER ISLAND STEAM ELECTRIC STATION	PA	YORK HAVEN	YORK	298
ALLEGHENY ENERGY INC HARRISON POWER STATION	WV	HAYWOOD	HARRISON	298
BOSWELL ENERGY CENTER	MN	COHASSET	ITASCA	297
AMERICAN ELECTRIC POWER MITCHELL PLANT	WV	MOUNDSVILLE	MARSHALL	290
MIDAMERICAN ENERGY GEORGE NEAL SOUTH	IA	SALIX	WOODBURY	290
TWIN OAKS POWER L.P.	TX	BREMOND	ROBERTSON	282
AMERICAN ELECTRIC POWER BIG SANDY PLANT	KY	LOUISA	LAWRENCE	280
U.S. TVA BULL RUN FOSSIL PLANT	TN	CLINTON	ANDERSON	280
ALCOA INC WARRICK OPERATIONS	IN	NEWBURGH	WARRICK	280
MIDAMERICAN ENERGY CO LOUISA GENERATING STATION	IA	MUSCATINE	LOUISA	280
NEW MADRID POWER PLANT	MO	MARSTON	NEW MADRID	280
MONTOUR STEAM ELECTRIC STATION	PA	DANVILLE	MONTOUR	277
LAWRENCE ENERGY CENTER	KS	LAWRENCE	DOUGLAS	270
U.S. TVA JOHNSONVILLE FOSSIL PLANT	TN	NEW JOHNSONVILLE	HUMPHREYS	270
TRANSALTA CENTRALIA GENERATION MINING	WA	CENTRALIA	LEWIS	265
THOMAS HILL ENERGY CENTER - POWER DIV	MO	CLIFTON HILL	RANDOLPH	263
AMERICAN ELECTRIC POWER PHILIP SPORN PLANT	WV	NEW HAVEN	MASON	260
MAYO ELECTRIC GENERATING PLANT PROGRESS ENERGY CAROLINA -	NC	ROXBORO	PERSON	260
F.J. GANNON STATION	FL	TAMPA	HILLSBOROUGH	260
DICKERSON GENERATING STATION	MD	DICKERSON	MONTGOMERY	259
WAUKEGAN GENERATING STATION	IL	WAUKEGAN	LAKE	257
DETROIT EDISON CO SAINT CLAIR POWER PLANT	MI	EAST CHINA TOWNSHIP	ST CLAIR	252
BIG STONE PLANT	SD	BIG STONE CITY	GRANT	250
DUNKIRK STEAM STATION	NY	DUNKIRK	CHAUTAUQUA	250
ALLEGHENY ENERGY INC ARMSTRONG POWER STATION	PA	KITTANNING	ARMSTRONG	247
NEW CASTLE POWER PLANT	PA	WEST PITTSBURG	LAWRENCE	240
CONSUMER ENERGY DE KARN JC WEADOCK GENERATING PLANT	MI	ESSEXVILLE	BAY	240
HUNTLEY GENERATING STATION	NY	TONAWANDA	ERIE	240
DOLET HILLS POWER STATION	LA	MANSFIELD	DE SOTO	238
DUKE ENERY PLANT ALLEN	NC	BELMONT	GASTON	238
OTTUMWA GENERATING STATION	IA	OTTUMWA	WAPELLO	237
CORONADO GENERATING STATION	AZ	SAINT JOHNS	APACHE	233
SANDOW STEAM ELECTRIC STATION	TX	ROCKDALE	MILAM	230
GERALD GENTLEMAN STATION	NE	SUTHERLAND	LINCOLN	230
U.S. TVA GALLATIN FOSSIL PLANT	TN	GALLATIN	SUMNER	230
AMERICAN ELECTRIC POWER NORTHEASTERN STATION	OK	OOLOGAH	ROGERS	230
EDGEWATER GENERATING STATION	WI	SHEBOYGAN	SHEBOYGAN	222

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
AMERICAN ELECTRIC POWER KAMMER PLANT	WV	MOUNDSVILLE	MARSHALL	220
TRACTEBEL POWER INC. RED HILLS POWER PLANT	MS	ACKERMAN	CHOCTAW	220
INTERMOUNTAIN POWER GENERATING STATION	UT	DELTA	MILLARD	219
GRAND RIVER DAM AUTHORITY COAL FIRED COMPLEX	OK	CHOUTEAU	MAYES	218
AMERENUE SIOUX POWER PLANT	MO	WEST ALTON	ST CHARLES	217
CHOLLA POWER PLANT	AZ	JOSEPH CITY	NAVAJO	213
CINERGY CAYUGA GENERATING STATION	IN	CAYUGA	VERMILLION	211
OKLAHOMA GAS & ELECTRIC CO SOONER GENERATING STATION	OK	RED ROCK	NOBLE	210
MEROM GENERATING STATION	IN	SULLIVAN	SULLIVAN	210
RELIANT ENERGY NILES POWER PLANT	OH	NILES	TRUMBULL	204
LOUISVILLE GAS & ELECTRIC CO TRIMBLE COUNTY STATION	KY	BEDFORD	TRIMBLE	204
DETROIT EDISON-TRENTON CHANNEL POWER PLANT	MI	TRENTON	WAYNE	202
REID/GREEN/HMP&L STATION II	KY	ROBARDS	HENDERSON	199
STANTON ENERGY CENTER	FL	ORLANDO	ORANGE	196
R. D. MORROW SR. GENERATING PLANT	MS	PURVIS	LAMAR	193
SIKESTON POWER STATION	MO	SIKESTON	SCOTT	191
U.S. TVA COLBERT FOSSIL PLANT	AL	TUSCUMBIA	COLBERT	190
CHARLES R. LOWMAN POWER PLANT	AL	LEROY	WASHINGTON	190
IATAN GENERATING STATION	MO	WESTON	PLATTE	190
KENTUCKY UTILITIES CO E. W. BROWN STATION	KY	HARRODSBURG	MERCER	188
CHESWICK POWER PLANT	PA	SPRINGDALE	ALLEGHENY	187
GULF POWER CO PLANT CRIST	FL	PENSACOLA	ESCAMBIA	186
OAK CREEK POWER PLANT	WI	OAK CREEK	MILWAUKEE	185
WESTERN FARMERS ELECTRIC COOP	OK	HUGO	CHOCTAW	183
BLACK RIVER POWER ELECTRIC GENERATING FACILITY	NY	FORT DRUM	JEFFERSON	181
WILLIAMS STATION - GENCO	SC	GOOSE CREEK	BERKELEY	180
U.S. TVA SHAWNEE FOSSIL PLANT	KY	WEST PADUCAH	MC CRACKEN	180
PACIFICORP WYODAK PLANT	WY	GILLETTE	CAMPBELL	178
ALLEGHENY ENERGY INC PLEASANTS/WILLOW ISLAND POWER STATIONS	WV	WILLOW ISLAND	PLEASANTS	176
DAYTON POWER & LIGHT CO KILLEN STATION	OH	MANCHESTER	ADAMS	175
AMEREN ENERGY GENERATING COFFEEN POWER STATION	IL	COFFEEN	MONTGOMERY	174
MORGANTOWN ENERGY ASSOCIATES	WV	MORGANTOWN	MONONGALIA	172
BASIN ELECTRIC POWER CO-OP LELAND OLDS STATION	ND	STANTON	MERCER	170
CINERGY WABASH RIVER GENERATING STATION	IN	WEST TERRE HAUTE	VIGO	169
AMERENUE MERAMEC POWER PLANT	MO	SAINT LOUIS	SAINT LOUIS CITY	168

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
BREMO POWER STATION	VA	BREMO BLUFF	FLUVANNA	168
GEORGIA POWER YATES STEAM ELECTRIC GENERATING PLANT	GA	NEWNAN	COWETA	167
IPL HARDING STREET STATION	IN	INDIANAPOLIS	MARION	163
CHESAPEAKE ENERGY CENTER	VA	CHESAPEAKE	CHESAPEAKE CITY	160
AMERICAN ELECTRIC POWER CLINCH RIVER PLANT	VA	CLEVELAND	RUSSELL	160
U.S. TVA ALLEN FOSSIL PLANT	TN	MEMPHIS	SHELBY	160
AMERICAN ELECTRIC POWER OKLAUNION POWER STATION	TX	VERNON	WILBARGER	160
RELIANT ENERGY SEWARD POWER PLANT	PA	NEW FLORENCE	INDIANA	156
CRAWFORD GENERATING STATION	IL	CHICAGO	COOK	153
ARIZONA ELECTRIC POWER COOPERATIVE INC	AZ	COCHISE	COCHISE	151
HAWAIIAN ELECTRIC CO INC KAHE GENERATING STATION	HI	KAPOLEI	HONOLULU	151
BIG BEND STATION	FL	APOLLO BEACH	HILLSBOROUGH	150
AMERICAN ELECTRIC POWER FLINT CREEK POWER PLANT	AR	GENTRY	BENTON	150
EDGE MOOR/HAY ROAD POWER PLANTS	DE	WILMINGTON	NEW CASTLE	148
PSEG POWER LLC HUDSON GENERATING STATION	NJ	JERSEY CITY	HUDSON	145
RODEMACHER POWER STATION	LA	LENA	RAPIDES	144
MICHIGAN CITY GENERATING STATION	IN	MICHIGAN CITY	LA PORTE	143
WATEREE STATION - S C E & G	SC	EASTOVER	RICHLAND	143
EXELON FAIRLESS HILLS STEAM GENERATING STATION	PA	FAIRLESS HILLS	BUCKS	141
PACIFICORP NAUGHTON PLANT	WY	KEMMERER	LINCOLN	139
AMEREN ENERGY RESOURCES GENERATING CO.	IL	BARTONVILLE	PEORIA	139
STATE LINE GENERATING LLC	IN	HAMMOND	LAKE	138
BOARDMAN PLANT	OR	BOARDMAN	MORROW	137
COOPER POWER STATION	KY	BURNSIDE	PULASKI	137
CLIFFSIDE STEAM STATION	NC	MOORESBORO	RUTHERFORD	137
ADM COGEN DECATUR	IL	DECATUR	MACON	135
C.D. MCINTOSH JR. POWER PLANT	FL	LAKELAND	POLK	131
PSEG POWER LLC MERCER GENERATING STATION	NJ	HAMILTON TOWNSHIP	MERCER	131
TRI-STATE GENERATION & TRANSMISSION CRAIG STATION	CO	CRAIG	MOFFAT	130
MUSCATINE POWER & WATER GENERATION	IA	MUSCATINE	MUSCATINE	130
AMERICAN ELECTRIC POWER COLETO CREEK POWER PLANT	TX	FANNIN	GOLIAD	130
CP&L-L. V. SUTTON STEAM ELECTRIC PLANT	NC	WILMINGTON	NEW HANOVER	130
PROGRESS ENERGY CAROLINAS INC ASHEVILLE PLANT	NC	ARDEN	BUNCOMBE	129
B.L. ENGLAND GENERATING STATION	NJ	BEESLEYS POINT	CAPE MAY	129
REID GARDNER GENERATING STATION	NV	MOAPA	CLARK	128

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
ALLEGHENY ENERGY INC ALBRIGHT POWER STATION	WV	ALBRIGHT	PRESTON	126
HAWTHORN GENERATING FACILITY	MO	KANSAS CITY	JACKSON	125
USGEN NEW ENGLAND INC	MA	SOMERSET	BRISTOL	124
PACIFICORP HUNTER PLANT	UT	CASTLE DALE	EMERY	124
DETROIT EDISON RIVER ROUGE POWER PLANT	MI	RIVER ROUGE	WAYNE	123
CINERGY EAST BEND GENERATING STATION	KY	UNION	BOONE	122
MISSISSIPPI POWER CO PLANT DANIEL	MS	ESCATAWPA	JACKSON	121
BAYSHORE PLANT	OH	OREGON	LUCAS	120
MISSISSIPPI POWER CO PLANT WATSON	MS	GULFPORT	HARRISON	117
RELIANT ENERGY PORTLAND POWER PLANT	PA	PORTLAND	NORTHAMPTON	115
SIGECO A. B. BROWN GENERATING STATION	IN	MOUNT VERNON	POSEY	114
COLEMAN	KY	HAWESVILLE	HANCOCK	112
DUKE ENERGY RIVERBEND STEAM STATION	NC	MOUNT HOLLY	GASTON	110
PROGRESS ENERGY CAROLINAS H. F. LEE STEAM ELECTRIC PLANT	NC	GOLDSBORO	WAYNE	110
R. E. BURGER PLANT	OH	SHADYSIDE	BELMONT	110
MONTROSE GENERATING STATION	MO	CLINTON	HENRY	110
CINERGY GALLAGHER GENERATING STATION	IN	NEW ALBANY	FLOYD	109
GEORGIA POWER HAMMOND STEAM ELECTRIC GENERATING PLANT	GA	ROME	FLOYD	109
EDDYSTONE GENERATING STATION	PA	EDDYSTONE	DELAWARE	106
LGE ENERGY WILSON STATION	KY	CENTERTOWN	OHIO	104
EXCEL ENERGY RIVERSIDE GENERATING PLANT	MN	MINNEAPOLIS	HENNEPIN	104
LANSING BOARD OF WATER & LIGHT ECKERT	MI	LANSING	INGHAM	102
SIGECO F B CULLEY GENERATING STATION	IN	NEWBURGH	WARRICK	100
DOMINION RESOURCES INC YORKTOWN POWER STATION	VA	YORKTOWN	YORK	100
POSSUM POINT POWER STATION	VA	DUMFRIES	PRINCE WILLIAM	100
GREAT RIVER ENERGY STANTON STATION	ND	STANTON	MERCER	100
SAMUEL CARLSON GENERATING STATION	NY	JAMESTOWN	CHAUTAUQUA	99
AMERICAN ELECTRIC POWER KANAWHA RIVER PLANT	WV	GLASGOW	KANAWHA	99
WP & L NELSON DEWEY GENERATING STATION	WI	CASSVILLE	GRANT	99
DAIRYLAND POWER CO-OP GENOA SITE	WI	GENOA	VERNON	97
RAWHIDE ENERGY STATION	CO	WELLINGTON	LARIMER	96
RICHARD H GORSUCH STATION	OH	MARIETTA	WASHINGTON	95
MCDONOUGH/ATKINSON STEAM ELECTRIC GENERATING PLANT	GA	SMYRNA	COBB	95
AES SHADY POINT LLC	OK	PANAMA	LE FLORE	94
IP&L - BURLINGTON GENERATING STATION	IA	BURLINGTON	DES MOINES	93
TAMPA ELECTRIC CO POLK POWER STATION	FL	MULBERRY	POLK	91
RUSSELL STATION	NY	ROCHESTER	MONROE	91
PRESQUE ISLE POWER PLANT	MI	MARQUETTE	MARQUETTE	90
BAILLY GENERATING STATION	IN	CHESTERTON	PORTER	90

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
DUKE ENERGY BUCK STEAM STATION	NC	SALISBURY	ROWAN	89
TECUMSEH ENERGY CENTER	KS	TECUMSEH	SHAWNEE	88
WPS WESTON POWER PLANT	WI	ROTHSCHILD	MARATHON	88
VIRGIN ISLANDS WATER AND POWER AUTHORITY	VI	SAINT THOMAS	ST THOMAS	86
ALABAMA POWER CO GADSDEN STEAM PLANT	AL	GADSDEN	ETOWAH	85
ADM CORN PROCESSING	IA	CEDAR RAPIDS	LINN	85
VIRGIN ISLANDS WATER AND POWER AUTHORITY	VI	CHRISTIANSTED	ST CROIX	85
BC COBB GENERATING PLANT	MI	MUSKEGON	MUSKEGON	85
DYNERGY HAVANA POWER STATION	IL	HAVANA	MASON	85
GAINESVILLE REGIONAL UTILITIES DEERHAVEN GENERATING STATION	FL	GAINESVILLE	ALACHUA	84
CANADYS STATION	SC	CANADYS	COLLETON	84
C.P. CRANE GENERATING STATION	MD	BALTIMORE	BALTIMORE CITY	82
SEMINOLE GENERATING STATION	FL	PALATKA	PUTNAM	82
DYNEGY WOOD RIVER POWER STATION	IL	ALTON	MADISON	81
LOUISVILLE GAS & ELECTRIC CO CANE RUN STATION	KY	LOUISVILLE	JEFFERSON	81
WPS PULLIAM POWER PLANT	WI	GREEN BAY	BROWN	81
JR WHITING GENERATING PLANT	MI	ERIE	MONROE	80
FISK GENERATING STATION	IL	CHICAGO	COOK	80
PROGRESS ENERGY CAROLINAS CAPE FEAR STEAM ELECTRIC PLANT	NC	MONCURE	CHATHAM	79
SIBLEY GENERATING STATION	MO	SIBLEY	JACKSON	79
DALE POWER STATION	KY	WINCHESTER	CLARK	79
HOOSIER ENERGY FRANK E. RATTS GENERATING STATION	IN	PETERSBURG	PIKE	78
IPL EAGLE VALLEY	IN	MARTINSVILLE	MORGAN	77
NRG ENERGY INC INDIAN RIVER GENERATING STATION	DE	MILLSBORO	SUSSEX	73
RELIANT ENERGY TITUS POWER PLANT	PA	BIRDSBORO	BERKS	72
DYNEGY HENNEPIN POWER STATION	IL	HENNEPIN	PUTNAM	72
JAMES RIVER POWER STATION	MO	SPRINGFIELD	GREENE	71
POTOMAC RIVER GENERATING STATION	VA	ALEXANDRIA	ALEXANDRIA CITY	71
EXCEL ENERGY A. S. KING GENERATING PLANT	MN	BAYPORT	WASHINGTON	70
PREPA AGUIRRE POWER GENERATION COMPLEX	PR	AGUIRRE	SALINAS	69
DANSKAMMER GENERATING FACILITY	NY	NEWBURGH	ORANGE	69
LANSING POWER STATION	IA	LANSING	ALLAMAKEE	69
AES SOMERSET LLC	NY	BARKER	NIAGARA	67
EXCEL ENERGY HIGH BRIDGE GENERATING PLANT	MN	SAINT PAUL	RAMSEY	67
HAWAIIAN ELECTRIC CO INC WAIAU GENERATING STATION	HI	PEARL CITY	HONOLULU	67
SOUTHWEST POWER STATION	MO	BROOKLINE STATION	GREENE	66
AMERICAN ELECTRIC POWER GLEN LYN PLANT	VA	GLEN LYN	GILES	65

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
LEE STEAM STATION	SC	PELZER	ANDERSON	64
ASHTABULA	OH	ASHTABULA	ASHTABULA	63
GULF POWER CO PLANT LANSING SMITH	FL	SOUTHPORT	BAY	62
M. L. KAPP GENERATING STATION	IA	CLINTON	CLINTON	62
HOLCOMB UNIT 1	KS	HOLCOMB	FINNEY	62
AMEREN ENERGY GENERATING MEREDOSIA POWER STATION	IL	MEREDOSIA	MORGAN	62
OWENSBORO MUNICIPAL UTILITIES ELMER SMITH STATION	KY	OWENSBORO	DAVIESS	61
RELIANT ENERGY INC ELRAMA POWER PLANT	PA	ELRAMA	WASHINGTON	61
PPL J.E. CORETTE STEAM ELECTRIC STATION	MT	BILLINGS	YELLOWSTONE	59
SOUTHERN ILLINOIS POWER COOPERATIVE	IL	MARION	WILLIAMSON	56
AMEREN ENERGY RESOURCES GENERATING CO	IL	CANTON	FULTON	55
VALLEY POWER PLANT	WI	MILWAUKEE	MILWAUKEE	55
PLATTE GENERATING STATION	NE	GRAND ISLAND	HALL	55
PRAIRIE CREEK GENERATING STATION	IA	CEDAR RAPIDS	LINN	54
PROGRESS ENERGY CAROLINA'S INC H B ROBINON S. E. P.	SC	HARTSVILLE	DARLINGTON	54
AES-CAYUGA LLC	NY	LANSING	TOMPKINS	54
AES - PUERTO RICO COGENERATION PLANT	PR	GUAYAMA	GUAYAMA	53
BLACK HILLS CORP NEIL SIMPSON COMPLEX	WY	GILLETTE	CAMPBELL	52
SOUTHWESTERN PUBLIC SERVICE CO HARRINGTON STATION	TX	AMARILLO	POTTER	52
DYNEGY VERMILION POWER STATION	IL	OAKWOOD	VERMILION	51
KENTUCKY UTILITIES CO GREEN RIVER STATION	KY	CENTRAL CITY	MUHLENBERG	50
AES THAMES LLC	CT	UNCASVILLE	NEW LONDON	50
PPL MARTINS CREEK STEAM ELECTRIC STATION	PA	BANGOR	NORTHAMPTON	50
INTERSTATE POWER & LIGHT CO SUTHERLAND STATION	IA	MARSHALLTOWN	MARSHALL	49
EXCEL ENERGY BLACK DOG GENERATING PLANT	MN	BURNSVILLE	DAKOTA	48
O. H. HUTCHINGS STATION	OH	MIAMISBURG	MONTGOMERY	47
TACONITE HARBOR ENERGY CENTER	MN	SCHROEDER	COOK	46
OMAHA PUBLIC POWER DISTRICT NEBRASKA CITY STATION	NE	NEBRASKA CITY	OTOE	45
AES BEAVER VALLEY LLC	PA	MONACA	BEAVER	45
NRG ENERGY CENTER DOVER	DE	DOVER	KENT	45
MITCHELL POWER STATION	PA	COURTNEY	WASHINGTON	44
AES WESTOVER	NY	JOHNSON CITY	BROOME	44
PORT WASHINGTON POWER PLANT	WI	PORT WASHINGTON	OZAUKEE	43
LEWIS & CLARK STATION	MT	SIDNEY	RICHLAND	43
LAKESHORE PLANT	OH	CLEVELAND	CUYAHOGA	43
MIDAMERICAN ENERGY RIVERSIDE GENERATING STATION	IA	BETTENDORF	SCOTT	42
PACIFICORP CARBON PLANT	UT	HELPER	CARBON	42

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
SOUTH CAROLINA ELECTRIC & GAS CO COPE STATION	SC	COPE	ORANGEBURG	40
PROGRESS ENERGY CAROLINAS INC W.H. WEATHERSPOON ELECTRIC	NC	LUMBERTON	ROBESON	40
OMAHA PUBLIC POWER DISTRICT NORTH OMAHA STATION	NE	OMAHA	DOUGLAS	39
AMEREN ENERGY GENERATING HUTSONVILLE POWER STATION	IL	HUTSONVILLE	CRAWFORD	39
HUNLOCK CREEK ENERGY VENTURES (FORMERLY UGI DEVELOPMENTCO.)	PA	HUNLOCK CREEK	LUZERNE	39
SOUTHWESTERN PUBLIC SERVICE CO TOLK STATION	TX	SUDAN	LAMB	38
PSEG POWER CONNECTICUT LLC BRIDGEPORT HARBOR STATION	CT	BRIDGEPORT	FAIRFIELD	38
WPS WESTWOOD GENERATION LLC	PA	TREMONT	SCHUYLKILL	37
AES-GREENIDGE LLC	NY	DRESDEN	YATES	36
PACIFICORP HUNTINGTON PLANT	UT	HUNTINGTON	EMERY	36
R. PAUL SMITH POWER STATION	MD	WILLIAMSPORT	WASHINGTON	36
PREPA - SOUTH COAST POWER PLANT	PR	GUAYANILLA	GUAYANILLA	35
RELIANT ENERGY WARREN STATION	PA	WARREN	WARREN	35
SAVANNAH ELECTRIC PLANT KRAFT	GA	PORT WENTWORTH	CHATHAM	34
COGENTRIX OF ROCKY MOUNT	NC	BATTLEBORO	EDGECOMBE	33
SALEM HARBOR STATION/USGEN NEW ENGLAND INC	MA	SALEM	ESSEX	33
WHITEWATER VALLEY GENERATING STATION	IN	RICHMOND	WAYNE	33
CEDAR BAY GENERATING CO	FL	JACKSONVILLE	DUVAL	32
OTTER TAIL POWER CO HOOT LAKE PLANT	MN	FERGUS FALLS	OTTER TAIL	32
DEEPWATER GENERATING STATION	NJ	PENNSVILLE	SALEM	31
CROMBY GENERATING STATION	PA	PHOENIXVILLE	CHESTER	31
R.M. HESKETT STATION	ND	MANDAN	MORTON	30
MAALAEA GENERATING STATION	HI	KIHEI	MAUI	30
PREPA PALO SECO STEAM PLANT	PR	TOA BAJA	TOA BAJA	29
TRI-STATE GENERATION & TRANSMISSION ESCALANTE STATION	NM	PREWITT	MC KINLEY	29
SAVANNAH ELECTRIC PLANT MCINTOSH	GA	RINCON	EFFINGHAM	28
ALLEGHENY ENERGY INC RIVESVILLE POWER STATION	WV	RIVESVILLE	MARION	28
DUKE ENERGY DAN RIVER STEAM STATION	NC	EDEN	ROCKINGHAM	28
LANSING BOARD OF WATER & LIGHT ERICKSON	MI	LANSING	INGHAM	28
INDIANTOWN COGENERATION LP	FL	INDIANTOWN	MARTIN	27
EBENSBURG POWER CO	PA	EBENSBURG	CAMBRIA	26
CITY WATER LIGHT & POWER CITY OF SPRINGFIELD	IL	SPRINGFIELD	SANGAMON	26
CINERGY EDWARDSPORT GENERATING STATION	IN	EDWARDSPORT	KNOX	25

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
JAMES RIVER COGENERATION CO INC	VA	HOPEWELL	HOPEWELL CITY	25
CITY OF PAINESVILLE POWER PLANT	OH	PAINESVILLE	LAKE	25
AMERICAN ELECTRIC POWER PICWAY PLANT	OH	LOCKBOURNE	PICKAWAY	25
URQUHART STATION	SC	BEECH ISLAND	AIKEN	25
MIRANT LOVETT GENERATING STATION	NY	TOMKINS COVE	ROCKLAND	25
IRVINGTON GENERATING STATION	AZ	TUCSON	PIMA	24
FLORIDA POWER & LIGHT CO MARTIN POWER PLANT	FL	INDIANTOWN	MARTIN	24
BONANZA POWER PLANT	UT	VERNAL	UINTAH	24
MITCHELL STEAM ELECTRIC GENERATING PLANT	GA	ALBANY	DOUGHERTY	24
BLACK HILLS CORP OSAGE POWER PLANT	WY	OSAGE	WESTON	24
CITY OF FREMONT DEPARTMENT OF UTILITIES LON D. WRIGHT POWER	NE	FREMONT	DODGE	23
COMMONWEALTH CHESAPEAKE POWER STATION	VA	NEW CHURCH	ACCOMACK	22
FLORIDA CRUSHED STONE CO. CPL	FL	BROOKSVILLE	HERNANDO	22
XCEL ENERGY - WISCONSIN (FRENCH ISLAND)	WI	LA CROSSE	LA CROSSE	22
MOBILE ENERGY SERVICES LLC	AL	MOBILE	MOBILE	22
MIRANT CANAL LLC	MA	SANDWICH	BARNSTABLE	22
PUBLIC SERVICE CO OF COLORADO COMANCHE STATION	CO	PUEBLO	PUEBLO	21
ASBURY GENERATING STATION	MO	ASBURY	JASPER	21
ALLIANT ENERGY INTERSTATE POWER LIGHT 6TH ST. GENERATING STA	IA	CEDAR RAPIDS	LINN	21
AMERICAN BITUMINOUS POWER PARTNERS LP	WV	GRANT TOWN	MARION	20
CITY OF AMES	IA	AMES	STORY	19
PUBLIC SERVICE CO OF COLORADO PAWNEE STATION	CO	BRUSH	MORGAN	19
LASKIN ENERGY CENTER	MN	HOYT LAKES	ST LOUIS	19
PROGRESS ENERGY FLORIDA INC ANCLOTE POWER PLANT	FL	HOLIDAY	PASCO	19
RAY D. NIXON POWER PLANT	CO	FOUNTAIN	EL PASO	18
MANITOWOC PUBLIC UTILITIES	WI	MANITOWOC	MANITOWOC	18
TUSCOLA GENERATING FACILITY	IL	TUSCOLA	DOUGLAS	18
COGENTRIX OF NORTH CAROLINA SOUTHPORT	NC	SOUTHPORT	BRUNSWICK	18
MARQUETTE BOARD OF LIGHT & POWER	MI	MARQUETTE	MARQUETTE	18
SCANA D-AREA SAVANNAH RIVER FACILITY	SC	AIKEN	BARNWELL	18
COLORADO SPRINGS UTILTITIES MARTIN DRAKE POWER PLANT	CO	COLORADO SPRINGS	EL PASO	17
SOUTH CAROLINA ELECTRIC & GAS CO MCMEEKIN STATION	SC	COLUMBIA	LEXINGTON	17
DUBUQUE POWER PLANT	IA	DUBUQUE	DUBUQUE	16
AQUILA LAKE ROAD STATION	MO	SAINT JOSEPH	BUCHANAN	16
GRAND HAVEN BOARD OF LIGHT & POWER	MI	GRAND HAVEN	OTTAWA	16
NORTHERN STATES POWER CO. - WISCONSIN (BAY FRONT)	WI	ASHLAND	ASHLAND	16

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
BERGEN GENERATING STATION	NJ	RIDGEFIELD	BERGEN	15
CROSS GENERATING STATION	SC	PINEVILLE	BERKELEY	15
MAUI ELECTRIC CO. LTD. KAHULUI GENERATING STATION	HI	KAHULUI	MAUI	15
PREPA SAN JUAN STEAM PLANT	PR	PUERTO NUEVO	SAN JUAN	15
HOPEWELL COGENERATION FACILITY	VA	HOPEWELL	PRINCE GEORGE	15
CAMBRIA COGEN CO	PA	EBENSBURG	CAMBRIA	14
CHAMOIS POWER PLANT	MO	CHAMOIS	OSAGE	14
RELIANT ENERGY ASTORIA GENERATING STATION	NY	ASTORIA	QUEENS	14
FPL FORT LAUDERDALE POWER PLANT	FL	FORT LAUDERDALE	BROWARD	14
CENTRAL IOWA POWER COOPERATIVE (CIPCO) - FAIR STATION	IA	MUSCATINE	MUSCATINE	14
PG&E INTL ENERGY GROUP NORTHAMPTON GENERATING PLANT	PA	NORTHAMPTON	NORTHAMPTON	13
JEFFERIES GENERATING STATION	SC	MONCKS CORNER	BERKELEY	13
DOMINION CLOVER POWER STATION	VA	CLOVER	HALIFAX	13
WINYAH GENERATING STATION	SC	GEORGETOWN	GEORGETOWN	13
PUBLIC SERVICE CO OF COLORADO ARAPAHOE STATION	CO	DENVER	DENVER	13
TRI-STATE GENERATION & TRANSMISSION - NUCLA STATION	CO	NUCLA	MONTROSE	13
COLSTRIP ENERGY LP ROSEBUD POWER PLANT	MT	COLSTRIP	ROSEBUD	13
EAGLE POINT COGENERATION PARTN ERSHIP (EPCP)	NJ	WESTVILLE	GLOUCESTER	13
HAWAII ELECTRIC LIGHT CO INC HILL GENERATING STATION	HI	HILO	HAWAII	13
MICHIGAN SOUTH CENTRAL POWER AGENCY	MI	LITCHFIELD	HILLSDALE	13
BLACK HILLS CORP BEN FRENCH POWER PLANT	SD	RAPID CITY	PENNINGTON	13
GULF POWER CO PLANT SCHOLZ	FL	SNEADS	JACKSON	13
POSDEF POWER CO LP	CA	STOCKTON	SAN JOAQUIN	12
NEBRASKA PUBLIC POWER DISTRICT SHELDON STATION	NE	HALLAM	LANCASTER	12
VANDOLAH POWER PROJECT	FL	WAUCHULA	HARDEE	12
NEW HAVEN HARBOR STATION	CT	NEW HAVEN	NEW HAVEN	12
FLORIDA POWER & LIGHT CO FORT MYERS POWER PLANT	FL	FORT MYERS	LEE	12
COGENTRIX OF RICHMOND INC	VA	RICHMOND	RICHMOND CITY	12
COGENTRIX VIRGINIA LEASING CORP	VA	PORTSMOUTH	PORTSMOUTH CITY	12
WYANDOTTE DEPARTMENT OF MUNICIPAL SERVICES-POWER PLANT	MI	WYANDOTTE	WAYNE	11
GOLDEN VALLEY ELECTRIC ASSOCIATES INC HEALY POWER PLANT	AK	HEALY	DENALI	11
MADISON GAS & ELECTRIC CO	WI	MADISON	DANE	11
MERRIMACK STATION	NH	BOW	MERRIMACK	11
HARDEE POWER STATION	FL	BOWLING GREEN	HARDEE	11

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
CINERGY NOBLESVILLE GENERATING STATION	IN	NOBLESVILLE	HAMILTON	10
SUNNYSIDE COGENERATION ASSOCIATES	UT	SUNNYSIDE	CARBON	10
NORTH VALMY STATION	NV	VALMY	HUMBOLDT	10
RIVERTON GENERATING STATION	KS	RIVERTON	CHEROKEE	10
PREPA CAMBALACHE COMBUSTION TURBINE PLANT	PR	ARECIBO	ARECIBO	10
KEYSPAN ENERGY NORTHPORT POWER STATION	NY	NORTHPORT	SUFFOLK	10
FLORIDA POWER & LIGHT CO SANFORD POWER PLANT	FL	DE BARY	VOLUSIA	10
WHELAN ENERGY CENTER	NE	HASTINGS	ADAMS	10
PROGRESS ENERGY FLORIDA INC PL BARTOW PLANT	FL	SAINT PETERSBURG	PINELLAS	9
PSEG-BURLINGTON GENERATING STATION	NJ	BURLINGTON	BURLINGTON	9
PUBLIC SERVICE CO OF COLORADO CHEROKEE STATION	CO	DENVER	ADAMS	9
ESCANABA GENERATING STATION	MI	ESCANABA	DELTA	9
DETROIT EDISON CO HARBOR BEACH POWER PLANT	MI	HARBOR BEACH	HURON	9
PUBLIC SERVICE CO OF COLORADO HAYDEN STATION	CO	HAYDEN	ROUTT	8
INDIAN RIVER POWER PLANT	FL	TITUSVILLE	BREVARD	8
SHELBY MUNICIPAL LIGHT PLANT	OH	SHELBY	RICHLAND	8
AUSTIN UTILITIES NORTHEAST POWER STATION	MN	AUSTIN	MOWER	7
HOLLAND BPW JAMES DE YOUNG GENERATION STATION	MI	HOLLAND	OTTAWA	7
COGENTRIX OF NORTH CAROLINA ROXBORO	NC	ROXBORO	PERSON	7
COLVER POWER PROJECT	PA	COLVER	CAMBRIA	7
KENTUCKY UTILITIES CO TYRONE STATION	KY	VERSAILLES	WOODFORD	7
MT TOM STATION	MA	HOLYOKE	HAMPDEN	7
CITY OF INDEPENDENCE	MO	INDEPENDENCE	JACKSON	6
U.S. DOE BONNEVILLE POWER ADMIN. CELILO CONVERTER STATION	OR	THE DALLES	WASCO	6
HIBBING PUBLIC UTILITIES COMMISSION	MN	HIBBING	ST LOUIS	6
T.E.S. FILER CITY STATION	MI	FILER CITY	MANISTEE	5
TRIGEN-NATIONS ENERGY CO LLLP	CO	GOLDEN	JEFFERSON	5
MEADWESTVACO NORTH CHARLESTON OPERATIONS	SC	NORTH CHARLESTON	CHARLESTON	5
CITY OF ORRVILLE DEPT OF PUBLIC UTILITIES ELECTRIC DEPT	OH	ORRVILLE	WAYNE	5
SOMERSET POWER LLC	MA	SOMERSET	BRISTOL	5
BIRCHWOOD POWER FACILITY	VA	KING GEORGE	KING GEORGE	4
GRAINGER GENERATING STATION	SC	CONWAY	HORRY	4
AES HAWAII INC.	HI	KAPOLEI	HONOLULU	4
AQUILA INC WN CLARK STATION	CO	CANON CITY	FREMONT	3
COLUMBIA MUNICIPAL POWER PLANT	MO	COLUMBIA	BOONE	3

Facility	State	City	County or County Equivalent	Air Emissions (lbs)
V.H. BRAUNIG A. VON ROSENBERG POWER PLANTS	TX	SAN ANTONIO	BEXAR	3
CHAMBERS COGENERATION LP	NJ	CARNEYS POINT	SALEM	3
TRIGEN-SYRACUSE ENERGY CORP	NY	SYRACUSE	ONONDAGA	3
CITY OF HAMILTON POWER PLANT	OH	HAMILTON	BUTLER	3
GREEN POWER KENANSVILLE LLC	NC	KENANSVILLE	DUPLIN	2
PG&E SCRUBGRASS GENERATING PLANT	PA	KENNERDELL	VENANGO	2
NEWINGTON STATION	NH	NEWINGTON	ROCKINGHAM	2
ACE COGENERATION FACILITY	CA	TRONA	SAN BERNARDINO	2
ROANOKE VALLEY ENERGY FACILITY	NC	WELDON	HALIFAX	2
SCHILLER STATION	NH	PORTSMOUTH	ROCKINGHAM	2
CROYDON GENERATING STATION	PA	CROYDON	BUCKS	2
SOUTHAMPTON POWER STATION	VA	FRANKLIN	SOUTHAMPTON	2
PUBLIC SERVICE CO OF COLORADO VALMONT STATION	CO	BOULDER	BOULDER	2
PACIFIC GAS & ELECTRIC CO. HUNTERS POINT POWER PLANT	CA	SAN FRANCISCO	SAN FRANCISCO	1
NORTHEASTERN POWER CO	PA	MC ADOO	SCHUYLKILL	1
LOGAN GENERATING CO LP	NJ	SWEDESBORO	GLOUCESTER	1
QUINDARO POWER STATION	KS	KANSAS CITY	WYANDOTTE	1
UAE MECKLENBURG COGENERATION LP	VA	CLARKSVILLE	MECKLENBURG	1
ALTAVISTA POWER STATION	VA	ALTAVISTA	CAMPBELL	1
PUBLIC SERVICE CO OF COLORADO CAMEO STATION	CO	PALISADE	MESA	1
MAYAGUEZ GAS TURBINES POWER PLANT	PR	MAYAGUEZ	MAYAGUEZ	1
NEARMAN CREEK POWER STATION	KS	KANSAS CITY	WYANDOTTE	1
PANTHER CREEK PARTNERS	PA	NESQUEHONING	CARBON	1
Total				**90,300**

Source: U.S. EPA, 2002 Toxics Release Inventory, downloaded from www.epa.gov/triexplorer, 27 September 2004.

Appendix E. Detailed Breakdown of Advisories (2003): Colorado

Colorado

Number of advisories:	**5**
Lake acres under advisory:	**17,105**
$$ Spent on Recreational Fishing (2001):	**$645,891,000**

Statewide Advisories

None

Specific Advisories

Advisory	Extent	Type	Advisory size	Year Issued	Species	Species size	Restriction/Population Covered
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	bass-largemouth	12-18"	No Consumption - Sub Population(s)
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	bass-largemouth	12-18"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	bass-smallmouth	1-6"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	bass-smallmouth	6-12"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	bass-smallmouth	1-6"	Restricted Consumption - Sub Population(s)
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	bass-smallmouth	6-12"	Restricted Consumption - Sub Population(s)
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	crappie-black	6-12"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	crappie-black	6-12"	Restricted Consumption - Sub Population(s)
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	perch-yellow	1-6"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	perch-yellow	6-12"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	perch-yellow	1-6"	Restricted Consumption - Sub Population(s)

Appendix E. Detailed Breakdown of Advisories (2003): Colorado

Advisory	Extent	Type	Advisory size	Year Issued	Species	Species size	Restriction/Population Covered
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	perch-yellow	6-12"	Restricted Consumption - Sub Population(s)
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	salmon-kokanee	12-18"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	salmon-kokanee	12-18"	Restricted Consumption - Sub Population(s)
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	trout-rainbow	12-18"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	trout-rainbow	6-12"	Restricted Consumption - General Population
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	trout-rainbow	12-18"	Restricted Consumption - Sub Population(s)
Mcphee Reservoir	Entire reservoir	Lake	1493 acres	1993	trout-rainbow	6-12"	Restricted Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	catfish-channel	18-24"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	catfish-channel	18-24"	Restricted Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	perch-yellow	1-6"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	perch-yellow	6-12"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	perch-yellow	1-6"	Restricted Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	perch-yellow	6-12"	Restricted Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	pike-northern	30-36"	No Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	pike-northern	12-18"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	pike-northern	18-24"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	pike-northern	24-30"	Restricted Consumption - General Population

Appendix E. Detailed Breakdown of Advisories (2003): Colorado

Advisory	Extent	Type	Advisory size	Year Issued	Species	Species size	Restriction/Population Covered
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	pike-northern	30-36"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	pike-northern	12-18"	Restricted Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	pike-northern	18-24"	Restricted Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	pike-northern	24-30"	Restricted Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	walleye	18-24"	No Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	walleye	12-18"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	walleye	18-24"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	walleye	6-12"	Restricted Consumption - General Population
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	walleye	12-18"	Restricted Consumption - Sub Population(s)
Narraguinnep Reservoir	Entire reservoir	Lake	577 acres	1993	walleye	6-12"	Restricted Consumption - Sub Population(s)
Navajo Reservoir	San Juan and Piedra arms	Lake	14934 acres	1993	bass-smallmouth	12-18"	Restricted Consumption - General Population
Navajo Reservoir	San Juan and Piedra arms	Lake	14934 acres	1993	bass-smallmouth	12-18"	Restricted Consumption - Sub Population(s)
Navajo Reservoir	San Juan and Piedra arms	Lake	14934 acres	1993	catfish-channel	12-18"	Restricted Consumption - General Population
Navajo Reservoir	San Juan and Piedra arms	Lake	14934 acres	1993	catfish-channel	12-18"	Restricted Consumption - Sub Population(s)
Navajo Reservoir	San Juan and Piedra arms	Lake	14934 acres	1993	pike-northern	36-42"	No Consumption - Sub Population(s)
Navajo Reservoir	San Juan and Piedra arms	Lake	14934 acres	1993	pike-northern	30-36"	Restricted Consumption - General Population
Navajo Reservoir	San Juan and Piedra arms	Lake	14934 acres	1993	pike-northern	36-42"	Restricted Consumption - General Population

Appendix E. Detailed Breakdown of Advisories (2003): Colorado

Advisory	Extent	Type	Advisory size	Year Issued	Species	Species size	Restriction/Population Covered
Navajo Reservoir	San Juan and Piedra arms	Lake	14934 acres	1993	pike-northern	30-36"	Restricted Consumption - Sub Population(s)
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	carp-common	24-30"	Restricted Consumption - General Population
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	carp-common	24-30"	Restricted Consumption - Sub Population(s)
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	perch-yellow	> 6"	Restricted Consumption - General Population
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	perch-yellow	> 6"	Restricted Consumption - Sub Population(s)
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	pike-northern	> 24"	No Consumption - Sub Population(s)
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	pike-northern	> 12"	Restricted Consumption - General Population
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	pike-northern	12-18"	Restricted Consumption - Sub Population(s)
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	trout-brown	18-24"	No Consumption - Sub Population(s)
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	trout-brown	18-24"	Restricted Consumption - General Population
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	walleye	> 12"	No Consumption - Sub Population(s)
Sanchez Reservoir	Entire reservoir	Lake	4 acres	1994	walleye	> 12"	Restricted Consumption - General Population
Teller Reservoir	Entire reservoir	Lake	97 acres	1994	bullhead	> 10"	No Consumption - Sub Population(s)
Teller Reservoir	Entire reservoir	Lake	97 acres	1994	bullhead	> 10"	Restricted Consumption - General Population
Teller Reservoir	Entire reservoir	Lake	97 acres	1994	catfish-channel	> 23"	No Consumption - Sub Population(s)
Teller Reservoir	Entire reservoir	Lake	97 acres	1994	catfish-channel	> 23"	Restricted Consumption - General Population
Teller Reservoir	Entire reservoir	Lake	97 acres	1994	crappie		No Consumption - Sub Population(s)

Appendix E. Detailed Breakdown of Advisories (2003): Colorado

Advisory	Extent	Type	Advisory size	Year Issued	Species	Species size	Restriction/Population Covered
Teller Reservoir	Entire reservoir	Lake	97 acres	1994	crappie		Restricted Consumption - General Population

No-restriction advisories

None

End Notes

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