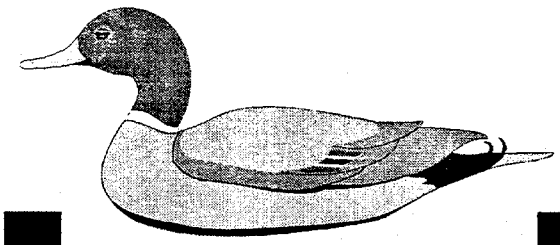
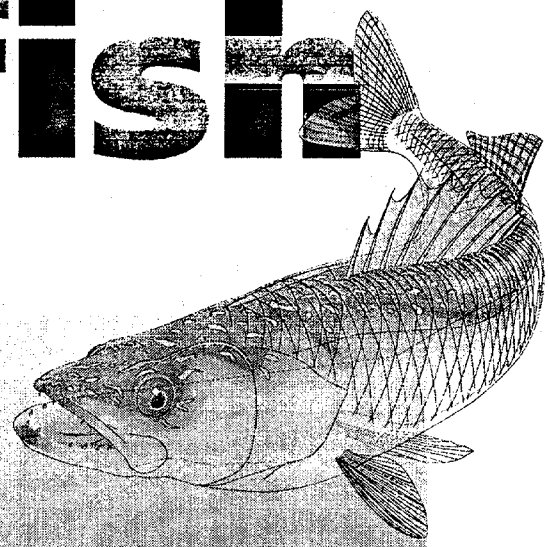
New York State Department of Health

Health Advisories



Chemicals in Game and Sportfish



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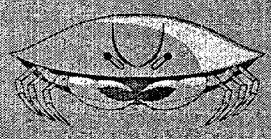

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These advisories are also available from the New York State Department of Health Web site on the Internet: *http://www.health.state.ny.us/nysdoh/environ/fish.htm*

In an effort to reduce the costs of printing, please notify us if you wish your name to be deleted from our mailing list or if your address has changed. Comments regarding the format or content of this booklet are welcome. Use the telephone number for Environmental Health Information listed on page 18 or e-mail: *BTSA@health.state.ny.us*

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1999-2000 Health Advisories: Chemicals in Sportfish and Game

Summary

The New York State Department of Health (DOH) issues advisories on eating sportfish and game because some of these foods contain chemicals at levels that may be harmful to your health. These advisories are for sportfish and game that people take and are not for fish and game sold in markets. The health advisories are: (1) general advice on sportfish taken from waters in New York State; (2) advice on sportfish from specific waterbodies; and (3) advice on eating game. The advisory tells you how to minimize your exposure to contaminants in sportfish and game and reduce whatever health risks are associated with them. The advisories are updated yearly.

Background

Fish and game are nutritious and good to eat. But some fish may take in contaminants from the water they live in and the food they eat. Game, too, may take in contaminants from their food and water. Some of these contaminants build up in fish and game--and in people--over time. These contaminants could harm people, so it is important to keep your exposure to these contaminants as low as possible.

The federal government sets standards for chemicals in food that is sold commercially, including fish. The decision to eat sportfish or game that you take is not regulated by government. Instead, state governments issue advisories. In New York State, the Department of Environmental Conservation (DEC) routinely monitors contaminant levels in fish and game and DOH issues advisories when sportfish have contaminant levels greater than federal standards.

These advisories are not intended to discourage you from eating fish or game, but should be used as a guide to minimize your exposure to contaminants.

Health Benefits

When properly prepared, fish provide a diet high in protein and low in saturated fats. Almost any kind of fish may have real health benefits if it replaces a high-fat source of protein in the diet. You can get the health benefits of fish and reduce unwanted contaminants by following the guidelines in these advisories.

Contaminants in Fish and Game

Long-lasting contaminants, such as PCBs, DDT and cadmium, build up in your body over time. It may take months or years of regularly eating contaminated fish or game to build up amounts that are a health concern. Health problems that may result from the contaminants found in fish or game range from small changes in health that are hard to detect to birth defects and cancer. Mothers who eat highly contaminated fish and game before becoming pregnant may have children who are slower to develop and learn. The meal advice in this advisory is also intended to protect children from these potential developmental problems. Women beyond their childbearing years and men face fewer health risks from contaminants than children do. People in this group should follow the advisory to reduce their total exposure to contaminants.

Some contaminants cause cancer in animals. We cannot predict with certainty your risks of cancer from eating contaminated fish or game. Cancer currently affects about one in every three people, primarily due to smoking, diet and hereditary risk factors. Exposure to contaminants in the fish and game you eat may not increase your cancer risk at all. If you follow this advisory over your lifetime, you will minimize your exposure and reduce whatever cancer risk is associated with these contaminants.

More information about the chemicals that have led to advisories in New York State sportfish and game and potential health effects can be found on page 15. When the federal

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government sets standards for fish, it generally assumes that people eat about a half-pound of fish each month. The contaminant levels are measured in a skin-on fillet which has not been trimmed; this sample is used in determining whether or not the fish exceeds standards. Fish cannot be legally sold if they contain a contaminant at a level greater than its standard. When sportfish from a waterbody contain contaminants at levels greater than the federal standards, DOH issues a specific advisory.

General Advisory for Eating Sportfish

The general health advisory for sportfish is that you eat no more than one meal (one-half pound) per week of fish taken from the state's freshwaters and some marine waters at the mouth of the Hudson River. These include the New York waters of the Hudson River, Upper Bay of New York Harbor (north of Verrazano Narrows Bridge), Arthur Kill, Kill Van Kull, Harlem River and the East River to the Throgs Neck Bridge (see map on page 13). This general advisory is to protect against eating large amounts of fish that have not been tested or may contain unidentified contaminants. The general advisory does not apply to most marine waters.

Specific Advisories for Freshwater, the Hudson River and the Upper Bay of New York Harbor

Fish from more than 60 waterbodies in New York have contaminant levels that are greater than federal standards. For these waters, DOH recommends either limiting or not eating a specific kind of fish (see pages 5 to 11). In some cases, enough information is available to issue advisories based on the length of the fish. Older (larger) fish are often more contaminated than younger (smaller) fish.

The contaminants that led to the advisory (mercury, cadmium, PCBs, chlordane, dioxin, DDT and mirex) are listed next to each advisory. If you eat fish from more than one water body with these advisories, you should limit consumption from all of the waters you fish. For example, if you eat a meal of Saw Mill River carp, you should not eat American eel from Kinderhook Lake for the rest of that month since both of these fish species have EAT NO MORE THAN ONE MEAL PER MONTH advisories and both are based on PCB contamination.

Advisory for Women, Infants and Children

Health advice is also given for infants, children under the age of 15 and women of childbearing age. DOH recommends that these groups not eat any fish from the specific waterbodies listed in the advisory. The reason for this specific advice is that chemicals may have a greater effect on developing organs in young children or in the fetus. They also build up in women's bodies and are often passed on in mother's milk. Waters that have specific advisories have at least one species of fish with an elevated contaminant level, which means that a contamination source is or was in or near the water.

When eating fish from waters where cadmium or mercury are listed as primary contaminants, it is important to space out fish meals according to the specific advisory for that waterbody. For example, if you eat a meal of yellow perch from Moshier Reservoir, you should not eat any more fish with the same mercury advisory for the rest of that month. However, for other contaminants, the total number of meals that you eat during the year is important and many of those meals can be eaten during a few months of the year. If most of the fish you eat are from the ONE MEAL PER WEEK category, you should not exceed 52 meals per year. Likewise, if most of the fish you eat are in the ONE MEAL PER MONTH category, you should not exceed 12 meals per year. Remember, eating one meal of fish from the ONE MEAL PER MONTH group is the same as eating four meals from the ONE MEAL PER WEEK group.

Advisories for Other Marine Waters

DOH also issues specific advisories for Long Island Sound, Block Island Sound, Peconic/Gardiners Bays, the Lower Bay of New York Harbor, Jamaica Bay and other Long Island south shore waters (see maps on pages 13 and 14). These apply to striped bass, bluefish and American eels and are the only fish advisories that apply to these waters. Ocean fish, although tested less often, are generally less contaminated than freshwater fish. However, striped bass, bluefish and eels have

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specific habits or characteristics that make them more likely to have contaminants than other marine species (see page 14).

Advisories for Chemical Contaminants in Crabs and Lobsters

DOH has a special advisory to eat no more than six Hudson River blue crabs per week and to avoid consuming crab cooking liquid due to cadmium and PCB contamination. DOH also recommends that you not eat the soft green substance (mustard, tomalley, liver or hepatopancreas) found in the body section of crabs and lobsters from any waters, because cadmium, PCBs and other contaminants concentrate there.

Advisories for Eating Game

DOH also issues advisories about eating some game. These are on page 14 of this booklet and include advisories for eating snapping turtles and waterfowl statewide because they contain PCBs and other contaminants. Because these contaminants concentrate in fat, you can minimize your exposure by not eating fat from these game and by following the cooking and eating advice on page 14.

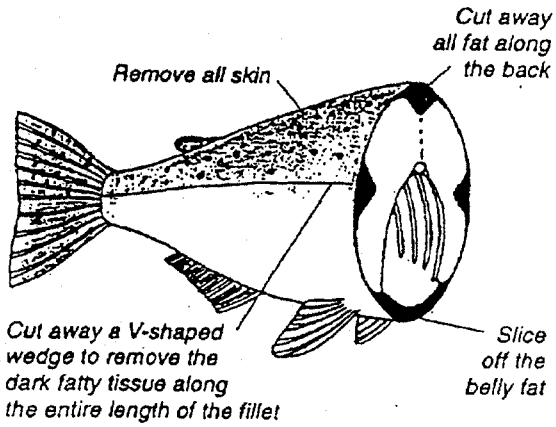
Deformed or Abnormal Fish

The health implications of eating deformed or abnormal fish are unknown. Any obviously diseased fish (marked by tumors, lesions or other abnormal condition of the fish skin, meat or internal organs) should be discarded.

Cleaning and Cooking Your Fish

Many contaminants are found at higher levels in the fat of fish. You can reduce the amount of these contaminants in a fish meal by properly trimming, skinning and cooking your catch. Remove the skin and trim all the fat from the belly flap, the line along the sides, the fat along the back and under the skin (see the diagram at the top of the next column).

Cooking or soaking fish cannot eliminate the contaminants, but heat from cooking melts some of the fat in fish and allows



some of the contaminated fat to drip away. Broil, grill or bake the trimmed, skinned fish on a rack so that the fat drips away. Do not use drippings to prepare sauces or gravies.

These precautions will not reduce the amount of mercury or other metals. Mercury is distributed throughout a fish's muscle tissue (the part you eat), rather than in the fat and skin. Therefore, the only way to reduce mercury intake is to reduce the amount of contaminated fish you eat.

Good sanitary practices should be followed when preparing any fish. Fish should be kept iced or refrigerated until cleaned and filleted and then refrigerated until cooked. Hands, utensils and work surfaces should be washed before and after handling any raw food, including fish. Seafood should be cooked to an internal temperature of 140°F.

Advice on Eating Raw or Partially Cooked Fish, Shellfish and Other Meats

Foods of animal origin, such as pork, poultry, beef, dairy products, fish and shellfish, can be contaminated with bacteria, viruses or parasites that can cause illness. Persons at high risk (for example, those who are immunocompromised, suffer from liver disease or other chronic diseases) can be more susceptible to and more severely affected by these infectious diseases. This is why the Department of Health recommends that all of these foods be thoroughly cooked before eating. Government agencies, universities and the food industry have active programs that strive to minimize contamination of raw animal foods and assure safe food products.

Information on rules and regulations, including areas in which clam, oyster and

mussel collection is permitted, can be obtained from DEC by calling (516) 444-0475. DEC routinely tests clam, oyster and mussel beds for bacteria. Based on these tests, an area may be closed to clam, oyster and mussel harvesting. Call DEC at (516) 444-0480 for a list of emergency closures.

Fish From Waters Affected by Beach Wash-ups

There is no indication that the wash-up of medical-type waste and garbage on New York and Long Island beaches has affected the sanitary condition of marine fish, lobster and crabs. Fish do not carry the AIDS virus. Consumers need not worry about eating these foods because of these problems. Good sanitary practices should be followed when preparing fish or any other food.

Reducing Exposure To Chemical Contaminants From Fish

Fish are an important source of protein and are low in saturated fat. Naturally occurring fish oils lower plasma cholesterol and triglycerides, thereby decreasing the risk of coronary heart disease. Increasing fish consumption is useful in reducing dietary fat and controlling weight. By eating a diet that includes food from a variety of protein sources, an individual is more likely to have a diet that is adequate in all nutrients.

Although eating fish has some health benefits, fish with high contaminant levels should be avoided. When deciding whether or not to eat fish that may be contaminated, the benefits of eating those fish can be weighed against the risks.

For young women, eating contaminated fish is a health concern not only for themselves but also for any unborn or nursing child, since the chemicals may reach the unborn babies and can be passed on in mother's milk. For an older person with heart disease, the risks, especially of long-term health effects, may not be as great a concern when compared to the benefits of reducing the risks of heart disease.

Everyone can benefit from eating the fish they catch and can minimize their contaminant intake by following these general recommendations:

1. Choose fish from waterbodies that are not listed in the DOH advisories. Follow the advice in this booklet.
2. Use a method of filleting the fish that will reduce the skin, fatty material and dark meat. These parts of the fish contain many of the contaminants.
3. Choose smaller fish, consistent with DEC regulations, within a species since they may have lower contaminant levels. Older (larger) fish within a species may be more contaminated because they have had more time to accumulate contaminants in their bodies.
4. Do not eat the soft green tissue (mustard, tomalley, liver or hepatopancreas) found in the body section of crab and lobster. This tissue has been found to contain high levels of chemical contaminants, including PCBs and heavy metals.
5. Cooking methods such as broiling, poaching, boiling and baking, which allow contaminants from the fatty portions of fish to drain out, are preferable. Pan frying is not recommended. The cooking liquids of fish from contaminated waters should be discarded since these liquids may retain contaminants.
6. Anglers who want to enjoy the fun of fishing but who wish to eliminate the potential risks associated with eating contaminated sportfish may want to consider "catch and release" fishing. Refer to the DEC *New York State Fishing Regulations Guide* for suggestions on catch and release fishing techniques.

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1999-2000 Health Advisories

The following recommendations are based on contaminant levels in fish and game. To minimize potential adverse health impacts, the DOH recommends:

- **Eat no more than one meal (one-half pound) per week** of fish from the state's freshwaters, the Hudson River estuary, Upper Bay of New York Harbor (north of the Verrazano Narrows Bridge), Arthur Kill, Kill Van Kull, East River to the Throgs Neck Bridge and Harlem River, except as recommended below.
- **Women of childbearing age, infants and children under the age of 15 should not eat** any fish species from waters listed below.
- **Follow trimming and cooking advice.**
- Observe the following restrictions on eating fish from these waters and their tributaries to the first barrier impassable by fish.
- Advice for other marine waters is on page 14.

Water (County)	**Species**	**Recommendations**	**Chemical(s) of Concern**
Arthur Kill [52] (Richmond)	See Hudson River (south of Catskill)		PCBs
Ashokan Reservoir [47] (Ulster)	Smallmouth bass over 16"	Eat no more than one meal per month	Mercury
Barge Canal [4] Tonawanda Creek Lockport to Niagara River (Erie & Niagara)	Carp	Eat no more than one meal per month	PCBs
Belmont Lake [64] (Suffolk)	Carp	Eat no more than one meal per month	Chlordane, PCBs
Big Moose Lake [28] (Herkimer)	Yellow perch	Eat no more than one meal per month	Mercury
Buffalo River/Harbor [6] (Erie)	Carp	Eat none	PCBs
Canadice Lake [9] (Ontario)	Lake or brown trout	Eat no more than one meal per month	PCBs
Canandaigua Lake [10] (Ontario & Yates)	Lake trout over 24"	Eat no more than one meal per month	PCBs
Carry Falls Reservoir [31] (St. Lawrence)	Walleye	Eat no more than one meal per month	Mercury
Cayuga Creek [2] (Niagara)	All species	Eat none	Dioxin

Waters with changes from 1998-99 Health Advisories are **underlined.**
Numbers in brackets refer to map on page 12.

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Water (County)	Species	Recommendations	Chemical(s) of Concern
Cranberry Lake [30] (St. Lawrence)	Smallmouth bass	Eat no more than one meal per month	Mercury
Delaware Park Lake [5] (Erie)	Carp	Eat no more than one meal per month	PCBs
East River [51] (NYC)	American eel	Eat none	PCBs
	Atlantic needlefish, bluefish, striped bass and white perch	Eat no more than one meal per month	PCBs
Eighteen Mile Creek [3] (Niagara)	All species	Eat none	PCBs
Ferris Lake [20] (Hamilton)	Yellow perch over 12"	Eat none	Mercury
	Smaller yellow perch	Eat no more than one meal per month	Mercury
Fourth Lake [21] (Herkimer & Hamilton)	Lake trout	Eat none	DDT
Francis Lake [23] (Lewis)	Yellow perch	Eat no more than one meal per month	Mercury
Freeport Reservoir [62] (Nassau)	Carp	Eat no more than one meal per month	Chlordane
Grant Park Pond [57] (Nassau)	Carp	Eat no more than one meal per month	PCBs
Grasse River [34] Mouth to Massena Power Canal (St. Lawrence)	All species	Eat none	PCBs
Halfmoon Lake [22] (Lewis)	Yellow perch	Eat no more than one meal per month	Mercury
Hall's Pond [58] (Nassau)	Carp and goldfish	Eat none	Chlordane
Harlem River [50] (NYC)	American eel	Eat none	PCBs
	Atlantic needlefish, bluefish, striped bass and white perch	Eat no more than one meal per month	PCBs

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Numbers in brackets refer to map on page 12.
Please note the special advice for **women of childbearing age, infants and children under the age of 15** on page 5.

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Water (County)	Species	Recommendations	Chemical(s) of Concern
Herrick Hollow Creek [44] (Delaware)	Brook trout	Eat no more than one meal per month	PCBs
Hoosic River [39] (Rensselaer)	Brown trout over 14"	Eat no more than one meal per month	PCBs
Hudson River [43] Sherman Island Dam downstream to Feeder Dam at South Glens Falls	Carp	Eat no more than one meal per month	PCBs
Hudson Falls to Troy Dam	All species	Eat none	PCBs
Troy Dam south to bridge at Catskill	All species except Alewife, American shad, blueback herring, rock bass and yellow perch	Eat none	PCBs
	Alewife, blueback herring, rock bass and yellow perch	Eat no more than one meal per month	PCBs
	American shad (general advisory)	Eat no more than one meal per week	PCBs
Bridge at Catskill south to and including the Upper Bay of New York Harbor (north of Verrazano Narrows Bridge), Arthur Kill and Kill Van Kull	American eel, Atlantic needlefish, bluefish, carp, goldfish, largemouth bass, smallmouth bass, rainbow smelt, striped bass, walleye, white catfish and white perch	Eat no more than one meal per month	PCBs
	Blue crab	Eat no more than six crabs per week	Cadmium, PCBs
	--hepatopancreas (mustard, tomalley, or liver)	Eat none	Cadmium, PCBs
	--cooking liquid	Discard	Cadmium, PCBs
Dobbs Ferry south to Greystone	American eel	Eat none	PCBs
	Other species	See advisories for Hudson River south of Catskill (above)	

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Water (County)	Species	Recommendations	Chemical(s) of Concern
Indian Lake [29] (Lewis)	All species	Eat no more than one meal per month	Mercury
Irondequoit Bay [8] (Monroe)	Carp	Eat none	PCBs, Mirex
Keuka Lake [11] (Yates & Steuben)	Lake trout over 25"	Eat no more than one meal per month	DDT
Kill Van Kull [53] (Richmond)	See Hudson River (south of Catskill)		PCBs
Kinderhook Lake [42] (Columbia)	American eel	Eat no more than one meal per month	PCBs
Koppers Pond [12] (Chemung)	Carp	Eat no more than one meal per month	PCBs
Lake Capri [65] (Suffolk)	Carp	Eat no more than one meal per month	Cadmium
Lake Champlain [36] Whole Lake	Lake trout over 25" and walleye over 19"	Eat no more than one meal per month	PCBs, Mercury
Bay within Cumberland Head to Crab Island	American eel, brown bullhead and yellow perch	Eat no more than one meal per month	PCBs
Lake Ontario [7] Including Niagara River below Niagara Falls (see Niagara River for additional advice)	American eel, channel catfish, carp, lake trout over 25", brown trout over 20" and chinook salmon	Eat none	PCBs, Mirex, Dioxin
	White sucker, rainbow trout, smaller lake trout, smaller brown trout and coho salmon over 25"	Eat no more than one meal per month	PCBs, Mirex, Dioxin
West of Point Breeze	White perch	Eat none	PCBs, Mirex, Dioxin
East of Point Breeze	White perch	Eat no more than one meal per month	PCBs, Mirex, Dioxin
Loft's Pond [60] (Nassau)	Carp and goldfish	Eat no more than one meal per month	Chlordane

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Water (County)	Species	Recommendations	Chemical(s) of Concern
Long Pond-Croghan [27] (Lewis)	Splake over 12"	Eat none	Mercury
Upper Massapequa Reservoir [63] (Nassau)	White perch	Eat no more than one meal per month	Chlordane
Massena Power Canal [33] (St. Lawrence)	Smallmouth bass	Eat no more than one meal per month	PCBs
Meacham Lake [35] (Franklin)	Yellow perch over 12"	Eat none	Mercury
	Smaller yellow perch	Eat no more than one meal per month	Mercury
Mohawk River [18] Between Oriskany and West Canada Creeks (Oneida & Herkimer)	Carp	Eat none	PCBs
	Largemouth bass and tiger muskellunge	Eat no more than one meal per month	PCBs
Moshier Reservoir [26] (Herkimer)	Yellow perch	Eat no more than one meal per month	Mercury
Nassau Lake [41] (Rensselaer)	All species	Eat none	PCBs
Neversink Reservoir [45] (Sullivan)	Smallmouth bass	Eat no more than one meal per month	Mercury
New York Harbor [54]	See Hudson River (south of Catskill) and marine waters advice on page 14		PCBs
Niagara River [1] Above Niagara Falls	Carp	Eat no more than one meal per month	PCBs
Below Niagara Falls (also see Lake Ontario)	White perch	Eat none	PCBs, Mirex, Dioxin
	Smallmouth bass	Eat no more than one meal per month	PCBs, Mirex, Dioxin
Onondaga Lake [14] (Onondaga)	Walleye	Eat none	Mercury
	All other species	Eat no more than one meal per month	Mercury

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800400

Water (County)	Species	Recommendations	Chemical(s) of Concern
Oswego River [15] Oswego power dam to upper dam at Fulton (Oswego)	Channel catfish	Eat no more than one meal per month	PCBs
Ridders Pond [56] (Nassau)	Goldfish	Eat none	Chlordane
Rondout Reservoir [46] (Sullivan and Ulster)	Smallmouth bass over 16"	Eat no more than one meal per month	Mercury
Round Pond [37] Town of Long Lake (Hamilton)	Yellow perch over 12"	Eat no more than one meal per month	Mercury
St. James Pond [66] (Suffolk)	All species	Eat no more than one meal per month	Chlordane, DDT
St. Lawrence River [32] Whole River	American eel, channel catfish, lake trout over 25", carp, brown trout over 20" and chinook salmon	Eat none	PCBs, Mirex, Dioxin
	White perch, white sucker, rainbow trout, smaller lake trout, smaller brown trout and coho salmon over 25"	Eat no more than one meal per month	PCBs, Mirex, Dioxin
Bay at St. Lawrence/ Franklin Co. line	All species	Eat none	PCBs
Salmon River [16] Mouth to Salmon Reservoir (also see Lake Ontario) (Oswego)	Smallmouth bass	Eat no more than one meal per month	PCBs, Mirex
Sauquoit Creek [19] Between dam at Clayville and Mohawk River (Oneida)	Brown trout	Eat none	PCBs
Saw Mill River [48] (Westchester)	American eel	Eat no more than one meal per month	Chlordane

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Water (County)	Species	Recommendations	Chemical(s) of Concern
Schroon Lake [38] (Warren & Essex)	Lake trout over 27"	Eat no more than one meal per month	PCBs
Sheldrake River [49] (Westchester)	American eel	Eat none	Chlordane, PCBs
	Goldfish	Eat no more than one meal per month	Chlordane
Skaneateles Creek [13] From dam at Skaneateles to Seneca River (Onondaga)	Brown trout over 10"	Eat no more than one meal per month	PCBs
Smith Pond - Rockville Centre [59] (Nassau)	White perch	Eat no more than one meal per month	Chlordane
Smith Pond - Roosevelt Park [61] (Nassau)	American eel	Eat none	Chlordane
	Carp and goldfish	Eat no more than one meal per month	Chlordane
Spring Pond - Middle Island [67] (Suffolk)	Carp and goldfish	Eat none	Chlordane
Stillwater Reservoir [25] (Herkimer)	Yellow perch over 9", smallmouth bass and splake	Eat no more than one meal per month	Mercury
Sunday Lake [24] (Herkimer)	Yellow perch	Eat no more than one meal per month	Mercury
Threemile Creek [17] (Oneida)	White sucker	Eat no more than one meal per month	PCBs
Valatie Kill [40] Between County Rt. 18 and Nassau Lake (Rensselaer)	All species	Eat none	PCBs
Whitney Park Pond [55] (Nassau)	Carp and goldfish	Eat no more than one meal per month	Chlordane

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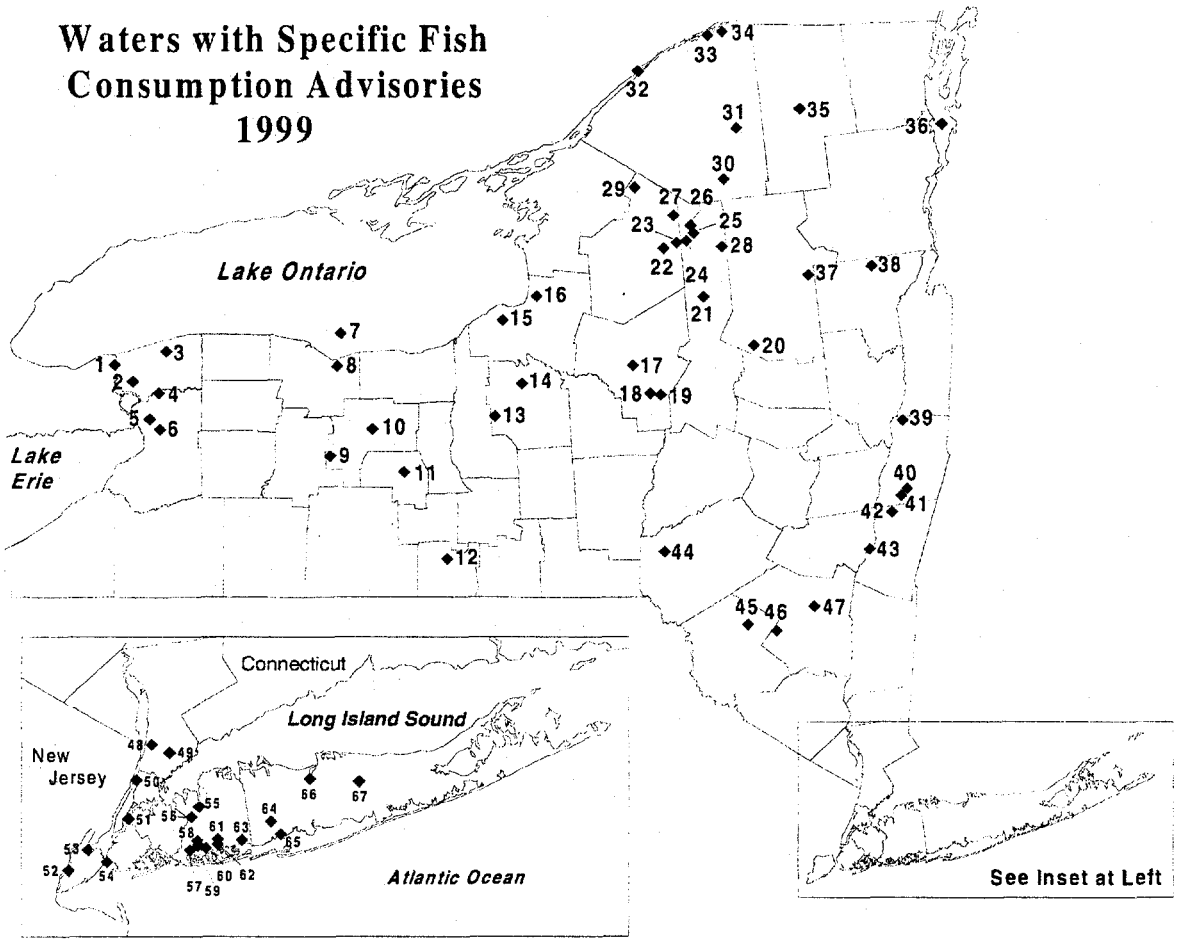
Waters with Specific Fish Consumption Advisories 1999



1	Niagara River	23	Francis Lake	45	Neversink Reservoir
2	Cayuga Creek	24	Sunday Lake	46	Rondout Reservoir
3	Eighteen Mile Creek	25	Stillwater Reservoir	47	Ashokan Reservoir
4	Barge Canal	26	Moshier Reservoir	48	Saw Mill River
5	Delaware Park Lake	27	Long Pond (Croghan)	49	Sheldrake River
6	Buffalo River and Harbor	28	Big Moose Lake	50	Harlem River
7	Lake Ontario	29	Indian Lake	51	East River
8	Irondequoit Bay	30	Cranberry Lake	52	Arthur Kill
9	Canadice Lake	31	Carry Falls Reservoir	53	Kill Van Kull
10	Canandaigua Lake	32	St. Lawrence River	54	New York Harbor
11	Keuka Lake	33	Massena Power Canal	55	Whitney Park Pond
12	Koppers Pond	34	Grasse River	56	Ridders Pond
13	Skaneateles Creek	35	Meacham Lake	57	Grant Park Pond
14	Onondaga Lake	36	Lake Champlain	58	Hall's Pond
15	Oswego River	37	Round Pond	59	Smith Pond (Rockville Centre)
16	Salmon River	38	Schroon Lake	60	Loft's Pond
17	Threemile Creek	39	Hoosic River	61	Smith Pond (Roosevelt Park)
18	Mohawk River	40	Valatie Kill	62	Freeport Reservoir
19	Sauquoit Creek	41	Nassau Lake	63	Upper Massapequa Reservoir
20	Ferris Lake	42	Kinderhook Lake	64	Belmont Lake
21	Fourth Lake	43	Hudson River	65	Lake Capri
22	Halfmoon Lake	44	Herrick Hollow Creek	66	St. James Pond
				67	Spring Pond (Middle Island)

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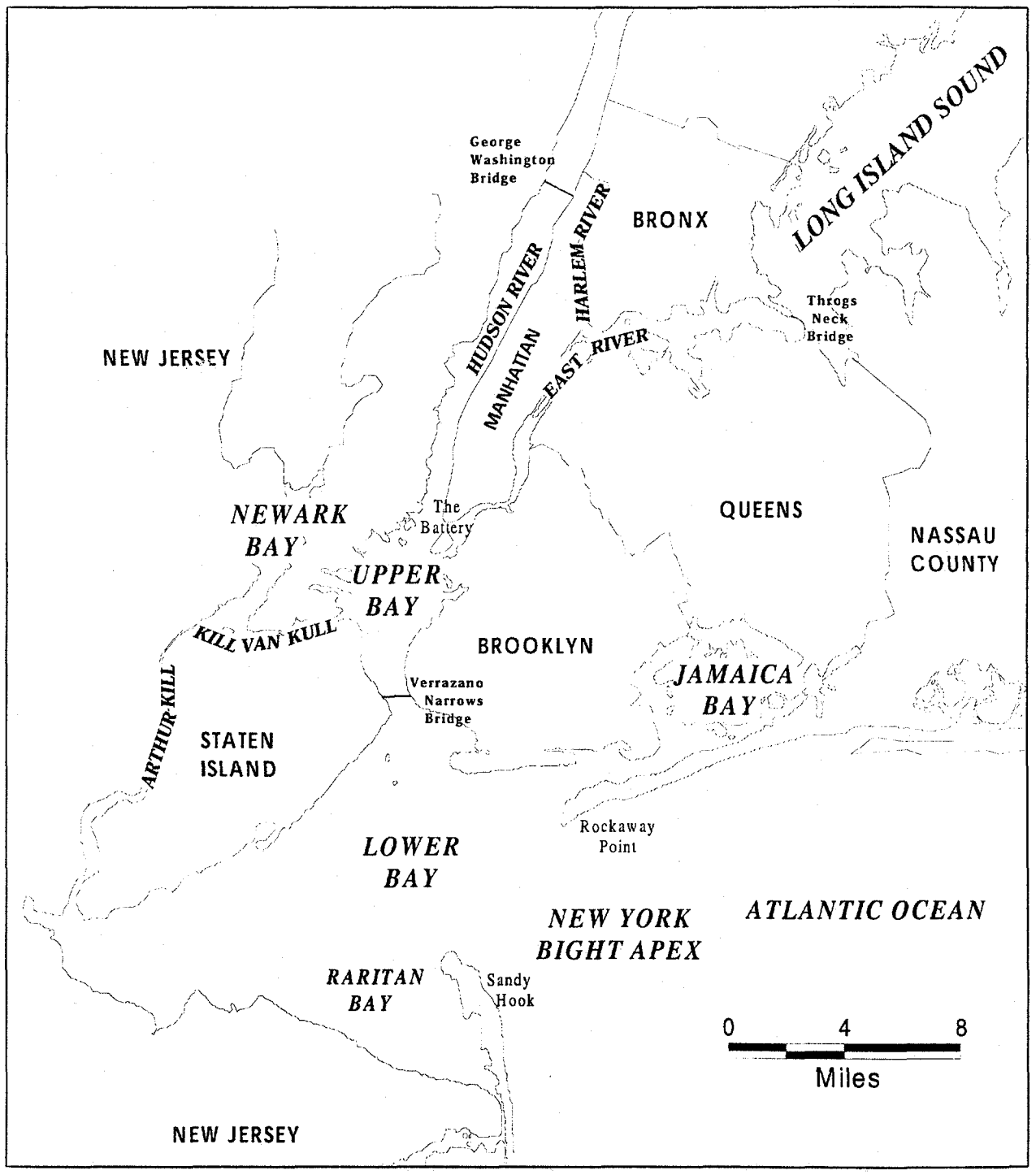
Map of New York City Harbor Region



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Additional Advice

Advisories for Lake Erie - Due to PCB contamination, women of childbearing age, infants and children under the age of 15 are advised to eat no more than one meal per week of chinook salmon less than 19 inches, burbot, freshwater drum, lake whitefish, rock bass and yellow perch and to EAT NO MORE THAN ONE MEAL PER MONTH of all other fish from Lake Erie. Other people should eat no more than one meal per week of any Lake Erie fish species.

Marine Bluefish and Eels - The general advisory {Eat no more than one meal (one-half pound) per week} applies to bluefish and American eels but not to most other fish (see Marine Striped Bass below) from Long Island Sound, Block Island Sound, Peconic/ Gardiners Bays, the Lower Bay of New York Harbor, Jamaica Bay and other Long Island south shore waters. (Contaminants of concern - PCBs)

Marine Striped Bass - Women of childbearing age and children under the age of 15 should eat no striped bass taken from Upper and Lower Bays of New York Harbor or Long Island Sound west of Wading River. Other people should EAT NO MORE THAN ONE MEAL PER MONTH of striped bass from these waters. Everyone should eat no more than one meal per week of striped bass taken from Jamaica Bay, Eastern Long Island Sound, Block Island Sound, Peconic/Gardiners Bay or Long Island south shore waters. (Contaminants of concern - PCBs)

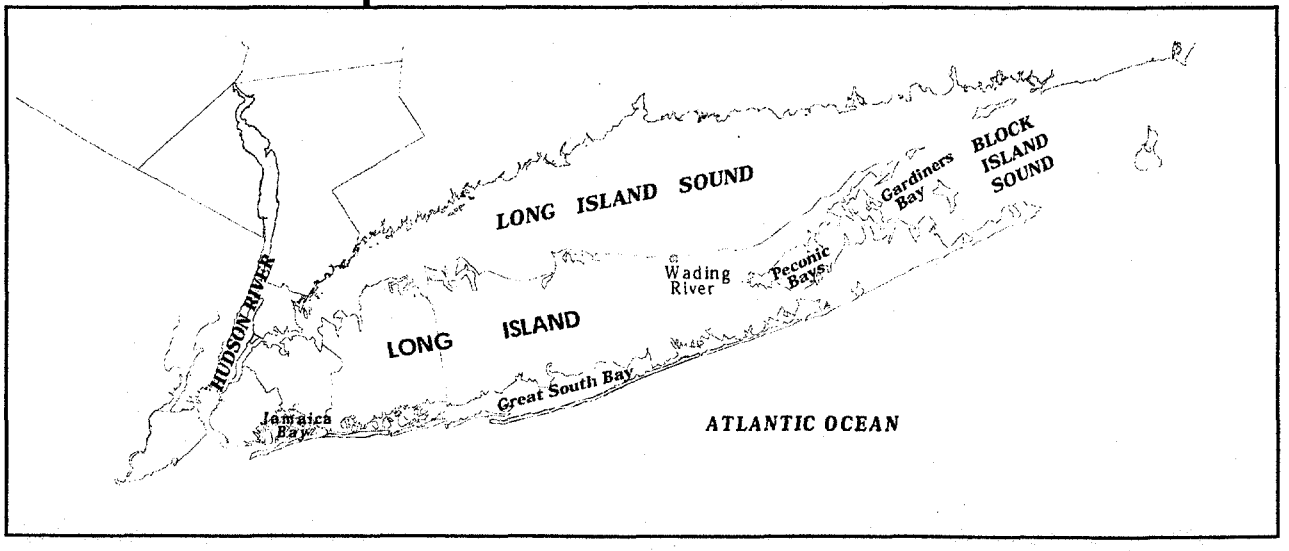
Crabs and Lobsters - The hepatopancreas (sometimes called mustard, tomalley or liver) of crabs and lobsters should not be eaten because it has high contaminant levels. (Contaminants of concern - PCBs, cadmium, dioxin)

Hudson River Shad - The advisory for women of childbearing age, infants and children under the age of 15 is EAT NONE for all fish from the lower Hudson River because of PCB contamination. However, shad have lower PCB levels than other species. A few meals of Hudson River shad meat and roe, especially using cooking and trimming methods that minimize PCB content, would not pose an unacceptable health risk for women of childbearing age and children, assuming this is their only significant exposure to PCBs.

Snapping Turtles - Snapping turtles retain contaminants in their fat, liver, eggs and, to a lesser extent, muscle. If you choose to consume snapping turtles, you can reduce your exposure by carefully trimming away all fat and discarding the fat, liver and eggs prior to cooking the meat or preparing soup. Women of childbearing age, infants and children under the age of 15 should AVOID EATING snapping turtles or soups made with their meat. (Contaminants of concern - PCBs)

Wild Waterfowl - Mergansers are the most heavily contaminated waterfowl species and should NOT BE EATEN. Other wild waterfowl should be skinned and all fat removed before cooking, stuffing should be discarded after cooking and EAT NO MORE THAN TWO MEALS PER MONTH. Monitoring data indicate that wood ducks and Canada geese are less contaminated than other wild waterfowl species and diving ducks are more contaminated than dabbler ducks. (Contaminants of concern - PCBs, mirex, chlordane, DDT)

Map of New York Marine Waters



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Information on Chemicals in Sportfish and Game

The following paragraphs give some basic information on chemicals in sportfish and game in New York State. Most of our knowledge of potential health effects comes from high dose animal studies or worker exposures. Chemicals that cause adverse health effects in humans and laboratory animals after high levels of exposure may increase the risk of adverse effects in humans exposed to lower levels for long periods of time. Following the suggestions in the advisory will minimize your exposure and any health risks from contaminants in fish.

Chlordane

Chlordane is a man-made pesticide that was used widely to control agricultural and home/garden pests until most uses were banned in the United States during the mid-1970s. In New York State, chlordane was used for the underground control of termites until that use was banned in 1985. Chlordane generally gets into bodies of water after improper waste disposal or run-off from treated areas. Chlordane builds up in the fatty tissues of fish, birds and mammals and can be found in fish and shellfish caught in chlordane-contaminated waters. Since chlordane is present in the fatty tissues of fish, exposure to chlordane in fish can be reduced by certain cleaning and cooking practices. For more information, see page 3.

People exposed to large amounts of chlordane may have nervous system damage. Exposure to high levels of chlordane damages the nervous system and liver of laboratory animals. Some animals exposed before birth and while nursing developed behavioral effects later. Chlordane causes cancer in laboratory animals exposed to high levels over their lifetimes. Whether chlordane causes cancer in humans is unknown. For general information, see the first paragraph of this section.

DDT

DDT is a man-made pesticide that was used widely to control insects on agricultural crops and biting insects, such as mosquitos and black flies. Its use was banned in New York in 1971 and throughout the United States in 1973. DDT generally gets into bodies of water after improper waste disposal, direct spraying of water bodies or run-off from treated areas. DDT builds up in the fatty tissues of fish, birds and mammals. It can be found in fish and shellfish caught in DDT-contaminated waters. Since DDT is present in the fatty tissues of fish, exposure to DDT in fish can be reduced by certain cleaning and cooking practices. For more information, see page 3.

People who accidentally ingested large amounts of DDT had effects on the nervous system that went away once the exposure stopped. Exposure of laboratory animals to high levels of DDT damages the liver and can cause reproductive, developmental and nervous system effects. DDT causes cancer in laboratory animals exposed to high levels over their lifetimes. Whether DDT causes cancer in humans is unknown. For general information, see the first paragraph of this section.

Mirex

Mirex is a man-made chemical that was used as a pesticide to control fire ants until its use was banned in the United States in the late 1970s. It was also used as a flame retardant in plastics, rubber, paint, paper and electrical goods until the early 1970s. Mirex generally gets into bodies of water after improper waste disposal or run-off from treated areas. Mirex builds up in the fatty tissues of fish, birds and mammals and can be found in fish and shellfish caught in mirex-contaminated waters. Since mirex is present in the fatty tissues of fish, exposure to mirex in fish can be reduced by certain cleaning and cooking practices. For more information, see page 3.

Laboratory animals exposed to mirex had damage to the eyes, nervous system, reproductive system, liver, thyroid and kidneys. Mirex causes cancer in laboratory animals exposed to high levels over their lifetimes. Whether mirex causes cancer in humans is unknown. For general information, see the first paragraph of this section.

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PCBs

PCBs are a family of man-made chemicals that were used in many commercial and electrical products until their manufacture was banned in the mid-1970s. Some electrical equipment still in use contains PCBs. In this country, most PCBs were sold as mixtures called Aroclors. PCBs build up in fatty tissues of fish, birds and mammals. Since PCBs are present in the fatty tissues of fish, exposure to PCBs in fish can be reduced by certain cleaning and cooking practices. For more information, see page 3.

Industrial workers exposed to large amounts of PCBs had skin damage. However, these workers were also exposed to other, more toxic chemicals that may have caused the skin effects. Some studies of pregnant women suggest a link between a mother's increased exposure to PCBs from eating contaminated fish or other environmental sources and slight effects on her child's birthweight, short-term memory and learning.

Exposure to high levels of PCBs damages skin, liver and the nervous, immune and reproductive systems of laboratory animals. It also reduces the birthweight and changes the behavior of offspring born to animals exposed before, during and after pregnancy. Certain types of PCBs cause birth defects in offspring born to animals exposed to high levels during pregnancy. Some types of PCBs cause cancer in laboratory animals exposed to high levels over their lifetime. Whether PCBs cause cancer in humans is unknown. For general information, see the first paragraph of this section.

Polychlorinated dibenzo-*p*-dioxins (PCDDs, dioxins)

Polychlorinated dibenzo-*p*-dioxins (also known as PCDDs or dioxins) and chlorinated dibenzofurans (also known as PCDFs or furans) are two closely related families of chemical compounds. Some dioxins and furans are produced as unwanted by products in chemical manufacturing processes, such as in the production of certain herbicides and disinfectants. They are also found in the smoke or ash from motor vehicles, municipal waste incinerators and wood fires. Some dioxins and furans are environmentally and biologically persistent. They are highly soluble in fats and are stored in the fatty tissue of fish and other animals. Since dioxins and furans are present in fatty tissues of fish, exposure to dioxins and furans in fish can be reduced by certain cleaning and cooking practices. For more information, see page 3.

Dioxins and furans are thought to produce similar health effects. TCDD (2,3,7,8-tetrachlorodibenzo-*p*-dioxin) is the most potent of the dioxins and furans, and much of what we know about the toxicity of dioxins and furans comes from studies of TCDD.

People exposed to high levels of dioxins and furans during industrial accidents have developed a condition called chloracne (a severe acne-like skin condition) and other skin disorders, as well as skin, eye and respiratory tract irritation, dizziness, headaches, nausea, vomiting and possibly disorders of the liver and nervous system. In men exposed to lower levels over longer times, there is some evidence that TCDD can cause small changes in the liver function, levels of sex hormones and may disrupt the metabolism of glucose (sugar). Some studies have found that workers in plants where products contaminated with dioxins and furans (for example, some herbicides) were made developed cancers which may have been caused by TCDD.

In laboratory animals, TCDD has damaged the liver, skin, blood and immune and reproductive systems. It also affects prenatal development in animals whose mothers were exposed to TCDD. TCDD causes cancer in animals exposed to high levels over their lifetime. For general information, see the first paragraph of this section.

Mercury

Mercury is a metal that occurs naturally in the environment in several forms. The most common form, metallic or elemental, is a silvery, odorless liquid that can evaporate at room temperature to form a vapor. Mercury can also combine with other elements to form both inorganic and organic compounds. Mercury and mercury compounds can be found in air, soil and water. Most of the mercury that accumulates in the fleshy part of fish is

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methylmercury. Fish absorb methylmercury directly from water and from eating smaller organisms that contain methylmercury. Greater amounts of methylmercury are found in older fish which tend to eat other fish and organisms in water containing methylmercury. Methylmercury is found throughout the part of the fish that is eaten; therefore, cleaning and cooking methods which may reduce exposure to other contaminants are NOT effective for reducing exposure to mercury.

Exposure to high levels of metallic, inorganic or organic mercury can damage the nervous system and kidneys. People who ate fish and grain which contained large amounts of methylmercury had permanent damage to the nervous system, kidneys and fetus. Exposure to methylmercury is more of a concern for children and unborn babies because their nervous systems are still developing and the nervous system is a target organ for mercury. Health effects might include brain damage, behavioral and developmental problems. For general information, see the first paragraph of this section.

Cadmium

Cadmium is a naturally occurring metal found at low levels in soil and water. Cadmium is used in many industrial operations and in consumer products such as paints, plastics and batteries. Food, air and drinking water all contribute to a person's exposure to cadmium. Cadmium can be found in food items and in tobacco. Vegetables, fruits and cereals are the greatest source of cadmium. Cadmium can also be found in fish and shellfish from waters containing cadmium.

Eating food or beverages containing high levels of cadmium can cause nausea, vomiting, stomach upset, cramps and diarrhea. Because cadmium leaves the body slowly, it can accumulate in the body, mainly in the kidneys, with continuing exposure. Some people with long-term exposure had kidney, bone and blood damage. For general information, see the first paragraph of this section.

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Contacts for Additional Information

New York State Department of Health

For more information on **health effects** from exposure to chemical contaminants or to provide comments on the format or content of this report contact:

Environmental Health Information: 1-800-458-1158 (toll-free from New York State telephones). Calls are taken from 8:00AM-4:30PM, Monday through Friday. After hours leave a voice mail message. The full advisories are also available from the Internet: *http://www.health.state.ny.us/nysdoh/environ/fish.htm* or can be requested by e-mail: *BTSA@health.state.ny.us*

New York State Department of Environmental Conservation

For more information on **fishing inland waters**, contact:

Region 1
Freshwaters
Loop Rd.
Bldg. 40 SUNY
Stony Brook, NY 11790
(516) 444-0280

Marine waters
205 North Belle Mead Rd.
Suite 1
East Setauket, NY 11733
(516) 444-0435

Region 2
1 Hunter Point Plaza
4740 21st St.
Long Island City, NY 11101-5407
(718) 482-4900

Region 3
21 South Putt Corners Rd.
New Paltz, NY 12561-1696
(914) 256-3161

Region 4
Rt. 10, Jefferson Rd.
Stamford, NY 12167-9503
(607) 652-7366

Region 5
Rt. 86, P.O. Box 296
Raybrook, NY 12977-0296
(518) 897-1333

Region 6
317 Washington St.
Watertown, NY 13601-3787
(315) 785-2266

Region 7
1285 Fisher Ave.
Cortland, NY 13045-1090
(607) 753-3095

Region 8
6274 E. Avon-Lima Rd.
Avon, NY 14414-9519
(716) 226-2466

Region 9
270 Michigan Ave.
Buffalo, NY 14203-2999
(716) 851-7000

For more information on **fishing marine waters**, contact:

Bureau of Finfish and Crustaceans
205 North Belle Mead Road, Suite 1
East Setauket, NY 11733
(516) 444-0435

For information on **contaminant levels**, in fish and shellfish and wildlife contact:

Bureau of Habitat
50 Wolf Road
Albany, NY 12233
(518) 457-6178

Prepared by:
New York State Department of Health
Division of Environmental Health Assessment
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