

US EPA ARCHIVE DOCUMENT



# Concerns Identified for Eating Fish from the Blackstone River

A Fish Tissue Study Conducted in the Vicinity of the Peterson/Puritan, Inc. Superfund Site, Cumberland and Lincoln, Rhode Island

U.S. EPA | HAZARDOUS WASTE PROGRAM AT EPA NEW ENGLAND



**THE SUPERFUND PROGRAM** protects human health and the environment by investigating and cleaning up often-abandoned hazardous waste sites and engaging communities throughout the process. Many of these sites are complex and need long-term cleanup actions. Those responsible for contamination are held liable for cleanup costs. EPA strives to return previously contaminated land and groundwater to productive use.

## PURPOSE:

The purpose of this fact sheet is to raise awareness among fishermen, and to provide additional information concerning contamination of native (resident) fish in the Rhode Island segment of the Blackstone River (between Albion and Lonsdale, Rhode Island). The United States Environmental Protection Agency (EPA) continues to support recreational fishing in the Blackstone River but urges fishermen to use caution with regard to fish consumption.

The Blackstone River was a heavily used urbanized river during the late 1700's to mid 1900's that supported industrial uses from Worcester, Massachusetts to the Narragansett Bay. With the enactment of the Clean Water Act in 1972, impairments to the River began to be addressed and the River has undergone significant positive changes with water quality and habitat improvement. Through increased compliance monitoring, water quality permitting, environmental cleanups, and changes in land use practices, the River has improved significantly and is now used extensively for various non-contact recreational opportunities including boating and fishing.

The Peterson/Puritan, Inc. Superfund Site is located along the Blackstone River in the towns of Cumberland and Lincoln, Rhode Island. The Site occupies about 500 acres and is approximately two miles long by 1,500 to 2,000 feet wide. The area became a Superfund Site in 1983 after it was discovered that groundwater supply wells along the Blackstone River had been contaminated and had to be taken offline in 1979. The reason the Site was included on the National Priorities List (NPL) was because exposure to contaminated groundwater posed a potential threat to human health and the environment. Due to the large size

of the Site and the number of potential contaminant sources discovered during early investigations, EPA divided the Site in 1990 into two areas known as operable units. Operable Unit 1 includes the northern portion of the Site, encompassing an industrial park in the vicinity of Martin Street in Cumberland. The selected remedy addressing contaminated groundwater in the vicinity of Martin Street has been in operation since 1997.

In 2001, EPA in cooperation with the Rhode Island Department of Environmental Management (RIDEM) entered into an agreement with potentially responsible parties to conduct an investigation concerning the extent of contamination at Operable Unit 2 of the Site. Since August 2003, field studies have been conducted throughout the Site and along the Blackstone River. As part of that investigation, in 2005, EPA initiated a bottom dwelling native fish study in various locations along the Blackstone River adjacent to and in the Site. The fish samples were assessed for health based risk. (See Blackstone River Fish Sampling Locations Map)

In summary, the study found that people who catch and eat the fish may be at risk from contaminants found in the fish tissues of some native, bottom

*continued >*

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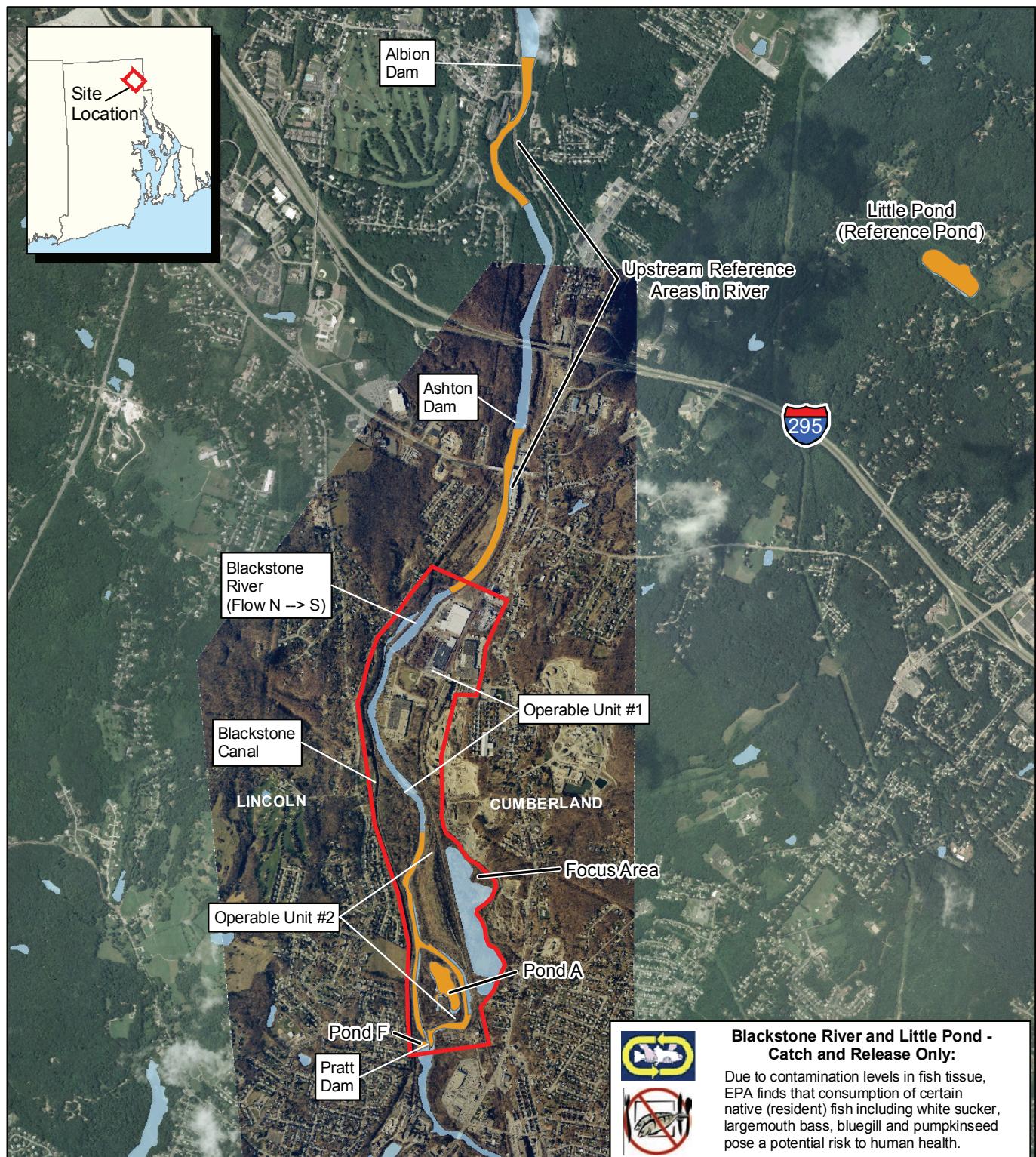
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Blackstone River  
Fish Sampling Locations  
Peterson/Puritan, Inc.  
Superfund Site

Cumberland/Lincoln, Rhode Island

Fish Survey Locations  
 Area Under Investigation

Produced By The EPA Region 1 GIS Center  
January 31, 2008

Note: Study area and fish survey boundaries are approximate and are for presentation purposes only.  
Data Sources: Background aerial photo, RIGIS Waterbodies, TeleAtlas

dwelling and predatory species. Similar findings were documented in fish from both within the boundary of Peterson/Puritan, Inc. Superfund Site as well as in the comparative reference areas upstream. This result further indicates that the potential cause for the associated risk in eating fish may be due to many sources within the watershed.

Based on the results of this study, EPA finds that eating contaminated fish may pose a risk to public health and therefore recommends against the taking of resident fish for consumption from the water bodies identified in these investigations (see Fish Sampling Location Map). EPA also emphasizes that progress in water quality improvements continues to be made throughout the watershed and supports non-contact recreational uses (kayaking, canoeing, fishing) within the Blackstone River. The Rhode Island Department of Health (RIDOH) advises that, with the exception of stocked trout, fish should not be eaten from the Blackstone River. However, "catch-and-release" sport fishing can still be enjoyed in this waterway, as in other urban rivers and ponds within the State.

Additional information can be found on EPA's Peterson/Puritan Site web page at: <http://www.epa.gov/region1/superfund/sites/peterson>. Below are some Frequently Asked Questions about contamination in native fish in the Blackstone River.

## ARE THE FISH IN THE BLACKSTONE RIVER CONTAMINATED? CAN I EAT THEM?

As part of its investigation in the nature and extent of contamination at the Superfund Site, EPA required river sediments and fish tissue along the Blackstone River to be tested. While Blackstone River sediments in the immediate vicinity of the Site warranted much less concern, fish samples collected from this study area are seen as problematic. People who catch and eat the fish may be at risk for contaminants found in the fish tissues of some native, bottom dwelling, and preda-

tory species. The attached map shows the sampling locations within the river study area incorporating the Superfund Site.

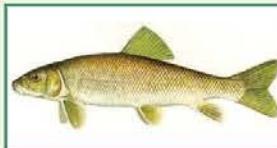
EPA collected native fish and had the fish tissue samples tested. Results indicate elevated levels of Polychlorinated Biphenyls (PCBs), Polycyclic Aromatic Hydrocarbons (PAHs), metals, and pesticides in fish tissue. The following species of fish have been found to contain high levels of PCBs, PAHs, pesticides, and heavy metals in their tissue:

in the environment and can cause harmful health effects. (Reference: ATSDR's TOXFAQS for PCBs).

PCBs pose a potential health risk to everyone, particularly sensitive populations including children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers. PCBs can cause skin, liver, stomach, immune system, and thyroid gland damage. PCBs can also cause birth defects. The State of Massachusetts maintains a freshwater

### EPA RECOMMENDS "CATCH AND RELEASE" SPORT FISHING FOR:

White Sucker



Largemouth Bass



Bluegill and Pumpkinseed



Levels of contaminants found in fish taken from this Blackstone River Study:

	White Sucker	Largemouth Bass	Bluegill/Pumpkinseed
PCBs*	✓	✓	✓
PAHs	✓	✓	✓
Metals	✓	✓	✓
Pesticides	✓	✓	✓

✓ Exceeds EPA's safe levels

\* PCBs are the primary contaminant of concern

## WHAT ARE PCBs? WHAT ARE THE HEALTH RISKS?

PCBs are the primary contaminant of concern in the fish tissue. PCBs are either oily liquids or solids that range from colorless to light yellow. Because PCBs do not burn easily and are good insulators, they are used as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they bio-accumulate

fish advisory for PCBs in the Massachusetts segment of the Blackstone River. As of January 2008, RIDOH, in review of these findings, has also identified the Rhode Island segment of the river as a body of water where fish should not be taken for consumption. PCBs

<sup>1</sup>The results of this study do not apply to farm-raised, state stocked fish such as Trout or otherwise anadromous (spawning) species such as Herring, Shad or Alewife which were not sampled as a part of this study.

and other contaminants (listed above) can bioaccumulate in the food chain and can be passed on to humans which is why people may be at risk should they consume quantities of these fish. Kayaking, canoeing, boating and "catch and release" fishing, which involve mostly incidental contact with sediments and surface water, do not pose a significant health risk (based on samples collected within the study area). Practicing sensible preventative measures (such as washing up after being in contact with the river) will lessen any potential risks for people who wish to enjoy this much improved and highly valuable resource.

### **WHAT ARE THE ACCEPTABLE LEVELS OF PCBs IN FISH? WHAT ARE THE PCB LEVELS FOUND IN THE NATIVE FISH TISSUE IN THE BLACKSTONE RIVER?**

The Food and Drug Administration (FDA) requires commercially sold food products (infant foods, eggs, milk and other dairy products, fish and shellfish, poultry and red meat) to contain no more than 0.2-3 parts per million (0.2-3 ppm) of PCBs in food. Many states have established fish and wildlife consumption advisories for PCBs (reference ATSDR; TOXFAQs for PCB's). EPA results indicate PCB levels up to 2 ppm in the native (resident) fish tissue sampled for this study.

### **WHERE CAN I FIND OUT MORE?**

#### **USEPA Fish Consumption web site:**

[http://water.epa.gov/scitech/swguidance/fishshellfish/outreach/advice\\_index.cfm](http://water.epa.gov/scitech/swguidance/fishshellfish/outreach/advice_index.cfm)

#### **RIDOH Fish Advisory web site:**

<http://www.health.ri.gov/healthrisks/poisoning/mercury/about/fish> <http://www.health.ri.gov/publications/brochures/FishIsGoodMercuryIsBad.pdf>

#### **ATSDR PCB facts:**

<http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=140&tid=26>

#### **EPA Region 1 Site Fact Page:**

<http://www.epa.gov/region1/superfund/sites/peterson>

#### **Blackstone River Do's and Dont's Brochure:**

<http://www.epa.gov/ne/superfund/sites/peterson/236978.pdf>

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