# NPL Site Narrative for Patrick Bayou

## PATRICK BAYOU
## Deer Park, Texas

**Conditions at Proposal (June 14, 2001)**: The Patrick Bayou site consists of contaminated sediments within the Bayou, a portion of the East Fork tributary, and associated wetlands. Patrick Bayou is one of several small bayous of the Houston Ship Channel (HSC) located within the lower portion of the San Jacinto River Basin as it enters Galveston Bay in southeast Texas. Pesticides, polynuclear aromatic hydrocarbons (PAHs), metals, and polychlorinated biphenyls (PCBs) have been detected in sediments in the Bayou since the early to mid-1990s. For several years, Patrick Bayou has received an accumulation of permitted industrial wastewater discharges, municipal wastewater treatment plant effluent, and storm water runoff from adjacent industrial facilities and nearby urban/residential areas. These discharges are suspected to be the primary sources of the sediment contamination. The site is being placed on the NPL because sediment contamination has been detected in the wetlands bordering the Bayou and poses a threat to downstream fisheries.

Patrick Bayou is located in a mixed urban, highly industrialized petrochemical area in southeast Harris County approximately 1 mile north of the Deer Park, Texas, north of State Highway (SH) 225. Most of the upper portion of the Bayou consists of a series of open, concrete-lined storm water channels and large metal/concrete culverts. These structures were installed to receive storm water runoff and permitted wastewater discharges and for erosion control south of SH 225. Contaminated sediments have been documented within the bounds of Patrick Bayou originating below a series of culverts located 1/3 mile north of SH 225 extending to its convergence with the HSC and including a portion of the East Fork tributary. Patrick Bayou drains a total distance of 2.85 miles north to its confluence with the HSC. The Bayou is normally 200 feet wide expanding to 600 feet within the last 1/4 mile before entering the HSC.

Prior investigations conducted by the city of Houston in 1993 and 1994 along the HSC and its tributaries documented high to moderate levels of pesticides, PAHs, cadmium, chromium, mercury, nickel, zinc, and PCBs accumulating within Patrick Bayou sediments. Subsequent investigations were conducted in July 1994 during a joint Texas Natural Resource Conservation Commission (TNRCC)/EPA Ambient Toxicity and Water and Sediment Quality Survey. These investigations confirmed the accumulation of the following substances within Patrick Bayou sediments: arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, zinc, hexachlorobenzene (HCB), bis-2-ethylhexyl phthalate, PAHs, PCBs, and pesticides. Mercury levels were documented in the sediments as high as 8,300 µg/kg, with PCB levels ranging from 806 to 4,150 µg/kg. PAH levels were detected as high as 53,600 µg/kg. The TNRCC collected samples as part of an Site Inspection in July 2000, sediment samples collected from the Bayou showed mercury levels as high as a 41,500 µg/kg, and PCB levels as high as 300,000 µg/kg.

The upper portion of the Bayou and several small islands within the Bayou contain extensive wetland vegetation affording a natural habitat for waterfowl and migratory birds. Significant populations of fish and marine mammals have been documented near the mouth of Patrick Bayou. Local fishermen fish for blue crab and catfish along the HSC even though human consumption has been restricted by the Texas Department of Health (no-consumption advisory for children and women of childbearing age) due to high levels of dioxin. A fish kill was reported on March 21, 1990 in the East Fork tributary of Patrick Bayou, and a second fish kill was reported on September 10, 1990 in the Bayou.

**Status (September 2002)**: EPA is considering various alternatives for this site.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at ATSDR - ToxFAQs (http://www.atsdr.cdc.gov/toxfaqs/index.asp) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.