

NOAA Hazardous Waste Site Review

Enterprise Avenue (III-25)  
Philadelphia, Pennsylvania  
April 13, 1984

Location and Nature of the Site:

The Enterprise Avenue Site covers about 57 acres along the Delaware River in Philadelphia, Pennsylvania (Figure 1). From 1971 to mid-1976, the city operated the site as a municipal landfill. At least 10,000 drums of hazardous wastes were dumped there without permission of the city. In 1978, the city discovered that various toxic wastes were being disposed of illegally at the site. In 1982, the city started cleanup actions, including removal of drums and soil. In October 1982, after spending seven million dollars cleaning up the site, the city suspended cleanup activities, leaving 20,000 tons of contaminated soil on-site. Some waste generators have been identified as responsible parties.

Proximity and Risk to Coastal Waters:

The landfill is immediately adjacent to the Delaware River. A 1979 study by Roy J. Weston, Inc.(6) indicates that runoff might be likely to flow into the River but drainage predictions are complicated by the reversals in stream flow directions under various weather conditions.

Table 1. Overall Landfill Impact on Surface Water (6).

	Upstream Locations			Downstream Location	
	S-4	S-8	S-9	S-11	S-12
TOC (ppm)	5	50	15	33	27
TDS (ppm)	634	582	204	2494	512
pH (ppm)	7.3	7.4	8.5	7.4	7.5
Sp. Cond. (Mmhos/cm)	820	860	250	1380	685
Ti (ppm)	0.02	0.24	0.47	0.13	0.14
Hg (ppm)	0.0016	0.0003	0.0003	0.0003	0.0005
Cd (ppm)	0.02	0.007	0.004	0.068	0.012
Fe (ppm)	1.47	0.25	1.75	0.26	0.19
As (ppm)	0.0002	0.015	0.018	0.023	0.014

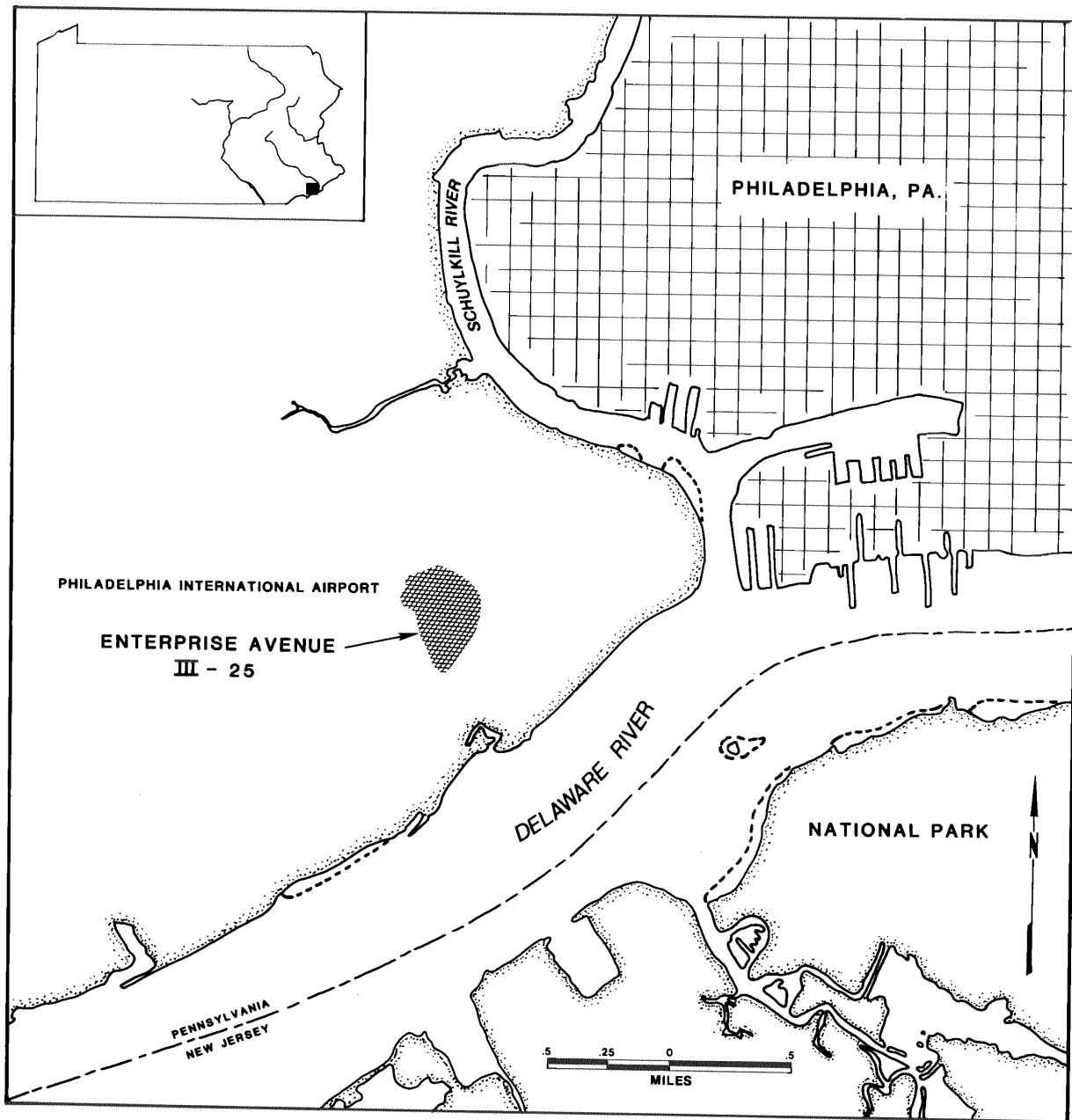


FIGURE 1. Site location.

Table 2. Fishery resources of the tidally influenced regions of the Delaware River near Philadelphia (1,2,5).

Finfish Species	Adult Habitat	Spawning Area	Nursery Area	Comm. Fish.	Rec. Fish.	Migr. Route	Season
<u>Anadromous</u>							
Alewife			X		X		X
Blueback herring			X		X		X
American shad			X		X		X
Shortnose sturgeon							X
Atlantic sturgeon							X
Striped bass			X		X		X
Gizzard shad			X				X
<u>Non-anadromous</u>							
Atlantic menhaden			X				
White perch			X		X		X
Flounder			X				
Bluefish			X				
Atlantic croaker			X				
Channel catfish	X			X			X
Brown bullhead				X			X
Bluegill	X						X
Black crappie	X						X

Anadromous fish migrate through the Delaware Bay estuarine system during the early spring on their way to freshwater spawning grounds. For most of the anadromous fish of the Delaware Bay this occurs upstream of Burlington, New Jersey although some spawning does occur in freshwater tributaries (4). The adults return to the lower parts of Delaware Bay. Juvenile fish, hatched in the spring, remain in the upper parts of Delaware Bay until the late summer and early fall when they migrate back into the lower parts of the Bay (3).

This region of the Delaware River is unlikely to be an important nursery or spawning area for other anadromous fish due to the fairly high level of development in this area and to their preference for less saline waters for spawning, but many fish migrate through this area en route to upstream spawning grounds. Among these is the shortnose sturgeon, a species of special federal concern.

Some species of fish may be harvested by recreational and commercial fishermen in the Delaware River adjacent to this site. In addition, tidal flats are present in the vicinity of Philadelphia.

The Delaware Bay estuarine system is an important wintering area for many waterfowl and seabirds, particularly loons, grebes, and gannets. They tend to concentrate in coastal bays and wetland areas.

Summary of Site-Related Actions:

The City of Philadelphia and the State have been cleaning up the site. Much of the contamination was removed during the last several

years. The remaining 20,000 tons of contaminated soil are being removed. There is a recovery and treatment operation of contaminated groundwater planned.

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References:

1. Anglers Guide to the United States Atlantic Coast, 1974. National Marine Fisheries Service.
2. Atlantic Coast Ecological Inventory, 1980. U.S. Fish and Wildlife Service.
3. Breder, C.N., and D.E. Rosen, 1966. Modes of Reproduction in Fishes. TFH Publications.
4. Byrne, D. Personal communication, Delaware River Anadromous Fishery Project, U.S. Fish and Wildlife Service.
5. Research Planning Institute, Environmental Sensitivity Atlas. Pennsylvania, (unpublished).
6. Roy J. Weston, Inc., August 1979. Enterprise Avenue Landfill Study Phase I. Weston Way. West Chester, PA. 19380.