

Mud Creek Brook Trout

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July 3, 2001

Introduction:

Mud Creek (PB-183) is a cold water tributary stream to Robinson Pond (P883) located in East Patchogue, NY. Robinson Pond discharges to the tidal section of Mud Creek, which flows into Patchogue Bay. The United States Geological Survey does not operate a gaging station on the creek; however, on August 31, 1998, the Bureau of Fisheries estimated the discharge to be 7.1 cubic feet/second using a standard salt slug method. Velocity was estimated at 0.8 feet per second. Immediately upstream of Montauk Highway, the stream splits into two segments. The eastern branch (mainstem) flows along the north side of Montauk Highway for several hundred feet before bending northeast away from the highway. This segment has a firm sand bottom with some gravel mixed in. The western branch (tributary 1) flows north from the highway culvert. It is very muddy with little in the way of sand or gravel areas. Most of the stream is privately owned north of Montauk Highway.

Mud Creek is significant because it is the only Long Island stream system where where brook trout are naturally reproducing and the NYSDEC does not have any records of brook trout ever being stocked into the system. Other streams have naturally reproducing brook trout, but all have had brook trout stocked at some time in the past. Mud Creek brook trout were genetically tested in 1985 as part of the Heritage Brook Trout Project. The Heritage Brook Trout Project report (Perkins, D.L., C.C. Krueger, and B. May) concluded that the Mud Creek brook trout evolved in isolation from other river basin strains of brook trout in New York and is classified as a heritage strain brook trout. The report also concluded that “the genetic diversity found among New York’s heritage strain brook trout is a substantial and irreplaceable portion of the total diversity within the species complex, the protection of which should be a high priority for all fishery managers.”

A 1938 survey of Mud Creek described the section upstream of Robinson Pond as spring water with several small trout seen. Duck farms were operating along the creek during this time. The farms pumped water from wells for use in the duck yards, and was then allowed to flow into the stream, causing a pollution problem. It was reported to be a good brook trout stream for the 0.9 mile stretch above the source of the pollution. The pollution was reported to enter Mud Creek approximately 0.1 miles above Robinson Pond. It is not known when the duck farms became defunct.

Electrofishing Surveys:

The DEC Region 1 Bureau of Fisheries conducted electrofishing surveys of Mud Creek on August 1, 1985, September 26, 1993, and June 26, 2001. These surveys were conducted for a variety of purposes. All surveys used backpack electrofishing units.

The purpose of the 1985 survey was to collect brook trout for genetic testing. The survey was a 150 foot section of stream north of Montauk Highway. During the 1985 survey, 19 brook trout were caught ranging in size from 3.4 to 8.1 inches (Figure 1). The water temperature was 63.5 °F.

The purpose of the 1993 survey was to take brook trout from Mud Creek and transfer them to the Peconic River at Conneticut Avenue in the attempts to introduce a trout fishery. The survey was done in two sections: 300 yards south of Montauk Highway (including between Montauk Highway and the LIRR) and 300 yards north of Montauk Highway along tributary 1. During the 1993 survey, 50 brook trout were caught, ranging between 2.8 and 5.1 inches (Figure 1). Larger brook trout were not collected and measured. Bruce Cronmeyer, one of the fisheries technicians in 1993, did not recall there being any larger trout north of Montauk Highway (Bruce Cronmeyer, personal communication 2001). Thirty-one of the 50 brook trout were captured south of Montauk Highway. All fish captured were removed for stocking in the Peconic River. Water temperature was 55.4°F.

The purpose of the 2001 survey was to remove trout for display at the Cold Spring Harbor Fish Hatchery and Aquarium. Fisheries staff accompanied Cold Spring Harbor Fish Hatchery Staff to take advantage of the collection to gather data on the brook trout population. The 2001 survey electrofished 100 yards of tributary 1 upstream from Montauk Highway, 30 yards of the mainstem upstream of the confluence with tributary 1, and 10 yards south of Montauk Highway. During the 2001 survey, 45 brook trout were caught, ranging between 2.4 and 10.0 inches (Figure 1). Water temperatures in 2001 ranged from 58.5°F just south of Montauk Highway to 60.9°F 30 yards upstream of Montauk Highway along the mainstem.

Electrofishing Results for Brook Trout from 1985, 1993, and 2001 Surveys of Mud Creek

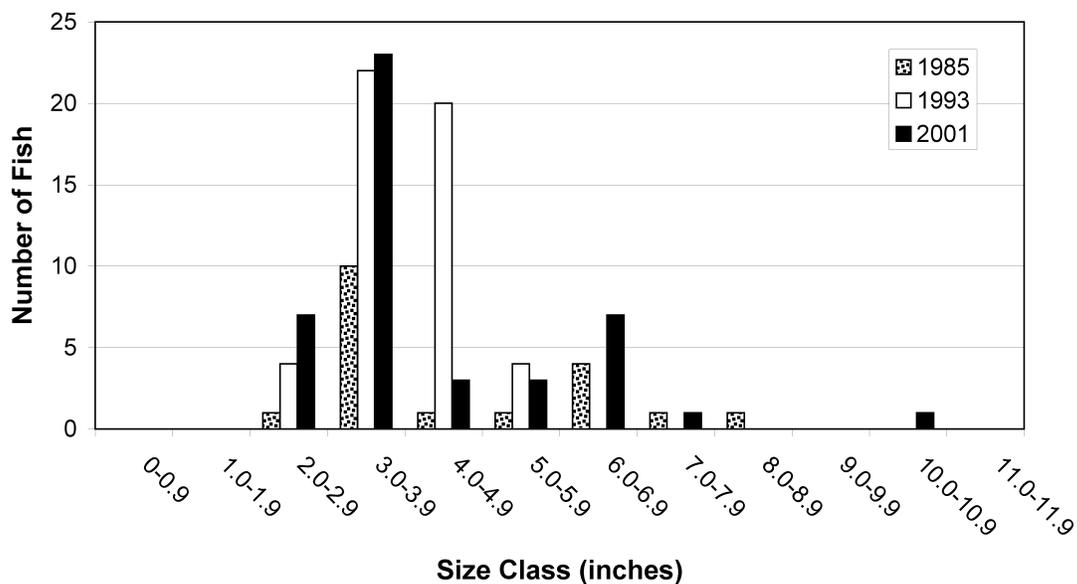


Figure 1

Table 1. Section, Block and Lot Numbers of property listed in the South Shore Estuary Reserve: Open Space Preservation Study (1998) as potential open space land purchases.		
Section	Block	Lot Numbers
975.70	1	7, 18.1
975.70	2	51.1, 51.2, 52, 55, 54.1, 54.2, 53, 25, 26, 27, 28, 29, 29, 47, 48, 49, 50, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 (these are old-filed maps, lots <1 acre)
977.70	1	1, 2
977.70	3	18.5
977.80	1	1, 5.1, 3

Observations made during the 2001 Survey:

While conducting the survey, two For Sale signs were observed east of the mainstem along Montauk Highway. Upon consultation with the Bureau of Real Property, it was realized that the two parcels were part of the former Gallo Duck Farm, East Patchogue. A report on the South Shore Estuary Reserve: Open Space Preservation Study (1999) identified 34 lots north of Montauk Highway in the Mud Creek drainage as potential open space purchases (26 of the 34 were less than 1 acre). Table 1 lists the section, block and lot numbers. If all the lots were combined, they would form approximately 100 acres of land in the headwaters of Mud Creek, including sections of the creek where brook trout were captured. Figure 2 shows an aerial photo of the Mud Creek drainage north of Montauk Highway with the approximate boundaries of mapped freshwater wetlands and the area bounded by the 34 lots recommended for purchase.

There were several storm drains along Montauk Highway that appeared to discharge directly into the wetland on the north side of the highway to the east of where the stream flows under the highway. There were also two storm drains that discharged directly into Mud Creek where it flows under Montauk Highway. These storm drains should be analyzed to see if improvements can be made to recharge the water before it is discharged directly into the creek.

Recommendations:

- 1- Mud Creek is the only Long Island brook trout stream that the DEC does not have any records of brook trout stocked into it. The brook trout inhabiting the creek are considered to be heritage strain brook trout of significant genetic importance. The opportunity exists to purchase approximately 100 acres of open space in the headwaters of Mud Creek. The parcels have also been identified in the South Shore Estuary Reserve Study as potential open space purchases. The parcels should be purchased to preserve this natural resource that is unique on Long Island.
- 2- During the next road work conducted on Montauk Highway, plans should be reviewed to reduce direct stormwater inputs into Mud Creek and its surrounding wetlands.

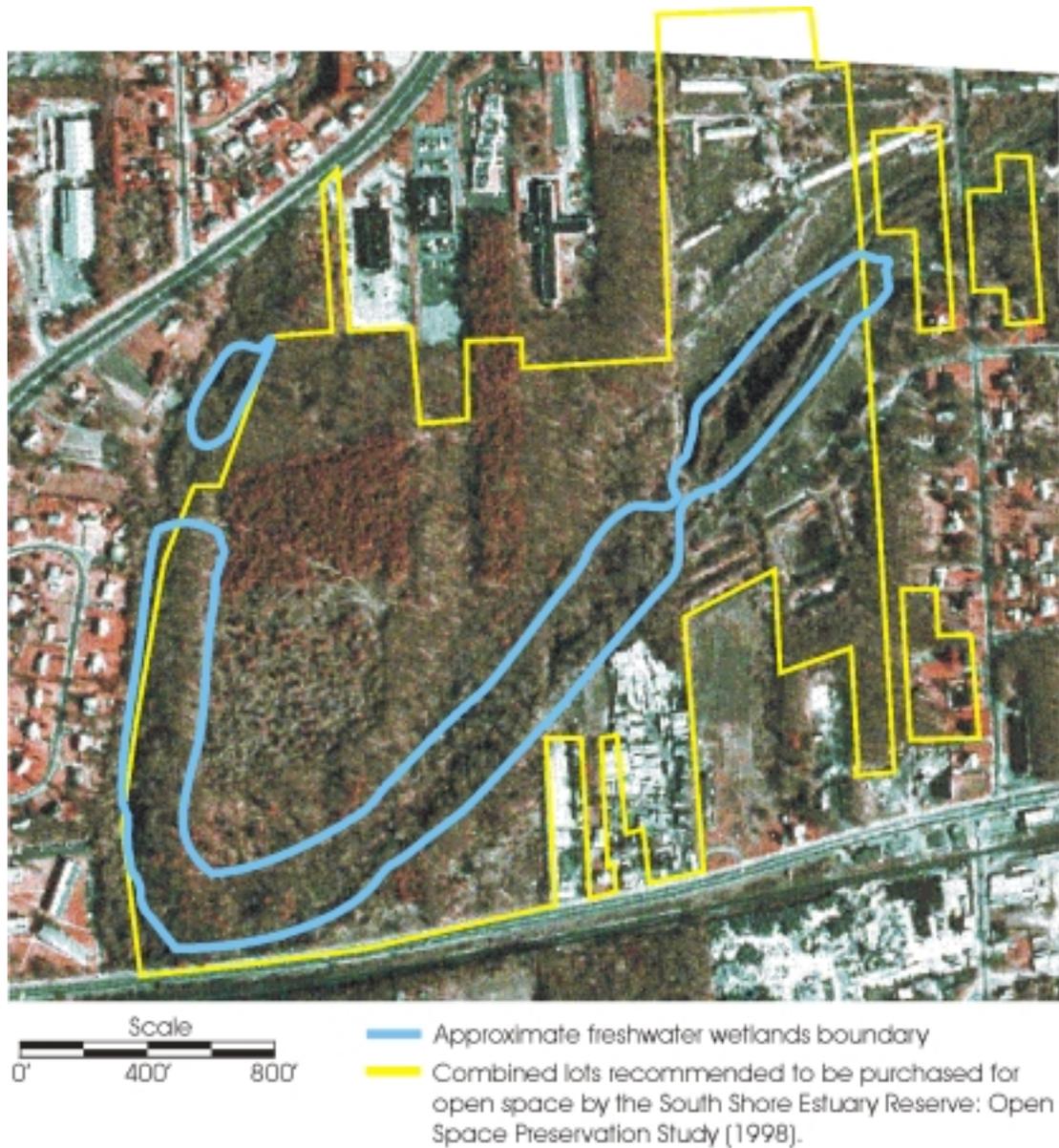


Figure 2. Aerial photo of the headwaters of Mud Creek with the approximate freshwater wetland boundary and recommended open space purchases.

References:

Allee, King, Rosen and Fleming. 1999. South Shore Estuary Reserve: Open Space Preservation Study. (October 1999).

Perkins, D.L., C.C. Krueger, and B. May. Heritage Brook Trout Project: Summary Report to the New York State Department of Environmental Conservation. Return a Gift to Wildlife Project 29-19-19.