

Dunk Pond General Biological Survey #521074

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Dunk Pond (UH-P581) is a 19-acre lake in Essex County in the Hudson Gorge Wilderness. Dunk Pond has a maximum depth of 46 feet and a circumneutral pH. It has been stocked annually with brook trout since 1941 and was last surveyed by DEC in 2014 (#514047).

Brook trout have been described as an obligate groundwater spawning species in both stream and lake environments (Webster and Eriksdottir 1976). In the 1980s, the Adirondack Lakes Survey Corporation (ALSC) collected detailed chemical, biological and physical information on 1,469 lakes in the Adirondack ecological zone. As part of that project, the relationships between habitat characteristics and the reproductive status of brook trout populations were explored (Schofield 1993). That analysis found a relationship between the reproductive status of brook trout populations and levels of silica (SiO₂) and sodium (Na), which are thought to be groundwater indicators. However, it was noted that survey timing and the vulnerability of young of year brook trout to the sampling gear complicated the reproductive assessments and limited the sample size of waters identified as having self-sustaining or Natural Spawning Adequate (NSA) brook trout populations.

In 2018 a multi-year project was begun in which NYSDEC and ALSC staff collected water samples from a number of lakes specifically to determine the current silica and sodium levels to help us better understand the relationship between spawning success and silica and sodium levels. Several brook trout waters with relatively high silica levels, where the natural reproduction of brook trout might take place, were identified. In a subset of these "high silica" waters, brook trout stocking was suspended for 2020 and 2021. These waters could then be surveyed in 2022 and perhaps identified as waters in which stocking could cease and the natural spawning of brook trout would maintain the population.

Dunk Pond was one of these waters. Additionally, Dunk Pond is a possible reclamation candidate, and if the pond could be reclaimed brook trout could be restocked and their population could, perhaps, become self-sustaining. The 2014 survey showed that brook trout, golden shiner, brown bullhead and redbreast sunfish were all present. This 2021 survey was an exploration (with a backpack electrofishing unit) of the tributaries of Dunk Pond to check for the presence of young brook trout. A total of nine young of year brook trout were collected, prior to fall stocking, at the mouth of a single tributary (Survey Site 1). Since this water has not been stocked since 2019 it seems clear that at least some brook trout reproduction is now occurring here. Two additional tributaries were shocked without success.

Table 1. Number and length ranges of fish collected at Dunk Pond, 2021.

Species	Number collected	Minimum length (in)	Maximum length (in)
Brook trout	9	1.9	3.2
Pumpkinseed	3	1.8	2.6

Literature cited:

Webster, D.A. and G. Eriksdottir. 1976. Upwelling water as a factor in the choice of spawning sites by brook trout (*Salvelinus fontinalis*) Trans. Am. Fish. Soc. 105(3): 416-421.

Schofield, C. L. 1993. Habitat suitability for brook trout (*Salvelinus fontinalis*) reproduction in Adirondack Lakes. Water Resources Research 29(4): 875-880.

