

**Big Brown Brook Biological Survey (Survey # 517075)**  
 Tom Shanahan, Region 5 Fisheries

8/07/2018

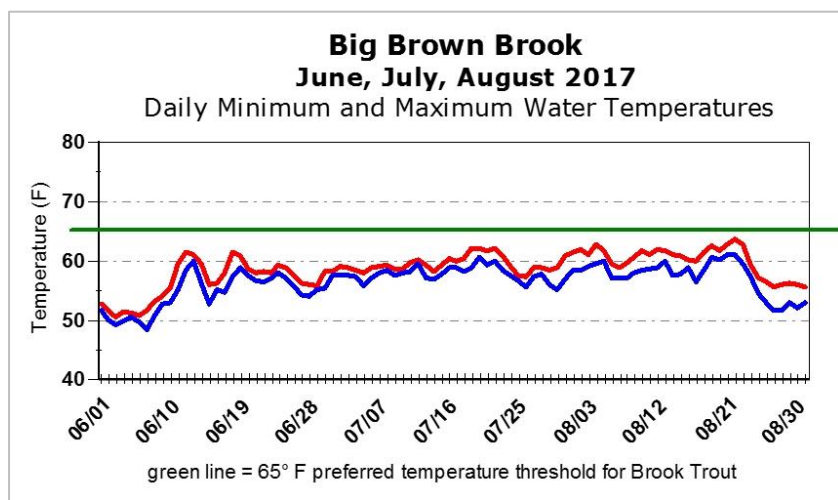
Big Brown Brook (C-25-26-6) is a small (approximately 7 feet wide) stream located in the Town of Wilmington in Essex County. Although the sampled section is on state land, much of the stream both above and below is privately owned. It is part of the Champlain drainage and is a tributary of the West Branch of the Ausable River. This was a general survey, the first since 1992, and is also part of a larger effort to look at the distribution of wild brook trout in the Ausable system. Lastly, the sampling provided a source of wild brook trout for genetic analysis. A portion of the caudal fin was removed from 30 fish for this purpose, and those samples were transferred to the New York State Museum’s Spencer Bruce for analysis.

A single site, replicated from one of the 1992 sites, was surveyed in August 2017 using backpack electrofishing units. There is no record of fish stocking for this stream and the only salmonids collected at this site were brook trout, the same results as the '92 survey (Table 1). No other species were collected in 2017; the earlier effort caught one slimy sculpin in addition to the brook trout.

Table 1. Numbers and size ranges of brook trout caught in Big Brown Brook, 2017.

Year	# caught	# wild	range (in.)	# per linear ft.
2017	71	71	2 - 7	0.16
1992	33	31	2 - 6	0.17

More brook trout were captured in the 2017 survey, but we electrofished a longer section than we typically do to ensure adequate numbers for DNA testing. If we look at the number of fish collected per linear foot of stream, the results are nearly identical between the two years. Big Brown Brook continues to be a very good wild brook trout stream, so no management changes are proposed. A temperature recorder deployed at the sampling site revealed summer water temperatures that are outstanding. This reach of the stream has nearly 100% tree canopy coverage and water temperatures were always cooler than 65°F. These temperatures are very likely the primary factor in allowing the brook trout to continue to be the dominant fish species in this segment of the brook. We will periodically check



temperatures and species composition in the future.