

Abstract:

Populations of wild Brook Trout, considered indicators of excellent water quality and healthy cold water ecosystems, have been extirpated or greatly reduced throughout much of their range in Pennsylvania. The local economies of the state have seen a reduction in economic benefits generated by angling for wild trout because of declines in this species. The distribution of trout within streams has been correlated with temperature, stream slope, and elevation. However, there are indications that pH may be linked to the distribution of Brook Trout and Brown Trout in Pennsylvania streams. The overall goal of my dissertation research is to evaluate the relative importance of pH in regulating the distribution and abundance of Brook Trout in Pennsylvania streams. The focus of this proposal is to establish the pH level actively avoided by wild, adult Brook Trout and Brown Trout. The study involves the collection of fish, construction of a steep gradient choice tank, and experimentation to determine the pH avoided by each species. The results of the proposed study are necessary to continue the proposed movement and interaction field studies. I expect that results from my overall study will aid efforts to restore Brook Trout throughout their native range.