

Project Title: Experimental Return of American Eels to Control Invasive Crayfish & Restore Ecological Structure in Streams & Rivers

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Study Sites: Pickering Creek and its named and unnamed tributaries

Project Description:

Scientists, anglers, and others visiting streams in and around the Schuylkill River corridor are increasingly aware of a growing problem for the health and integrity of our streams and rivers: the proliferation of invasive crayfish in stream after stream. Our team of scientists has found an important relationship between these crayfish invasions and American Eels, where even low to moderate densities of eels reduce or eliminate the invasive crayfish, while native crayfish show an ability to coexist with American Eels.

Part of the problem for the Schuylkill watershed is that American Eels have been steadily declining in numbers and distribution over the last 50 years, providing more and more places where invasive crayfish may have been able to get a foothold and exploit the lack of an effective predator like eels to facilitate their invasion. To test whether the return of American Eels to the Schuylkill River and its tributaries at ecologically-effective densities can reverse the trends in the invasive crayfish proliferation, our team has secured funding to bring moderate numbers of American Eels to a single watershed (Pickering Creek) to test the response of both native and invasive crayfish to the return of eels to that stream. (*note: in Pickering Creek, the invasive crayfish is the Virile Crayfish, *Faxonius virilis**)

In the summer of 2019, our team will first conduct detailed surveys of the existing abundance and distribution of fish and crayfish at 5 study sites in the Pickering Creek watershed. Following these baseline surveys, American Eels from multiple sources will be re-introduced to Pickering Creek at multiple locations, with varying sizes of eels included in the reintroduction to extend the expected time period of residency before these eels choose to make their epic journey back to the Sargasso Sea for spawning and reproduction. The 5 study sites will then be monitored both in the short-term following eel release and over the next 4-5 years to evaluate how both the native and invasive crayfish as well as the entire fish community respond to the return of American Eels.

