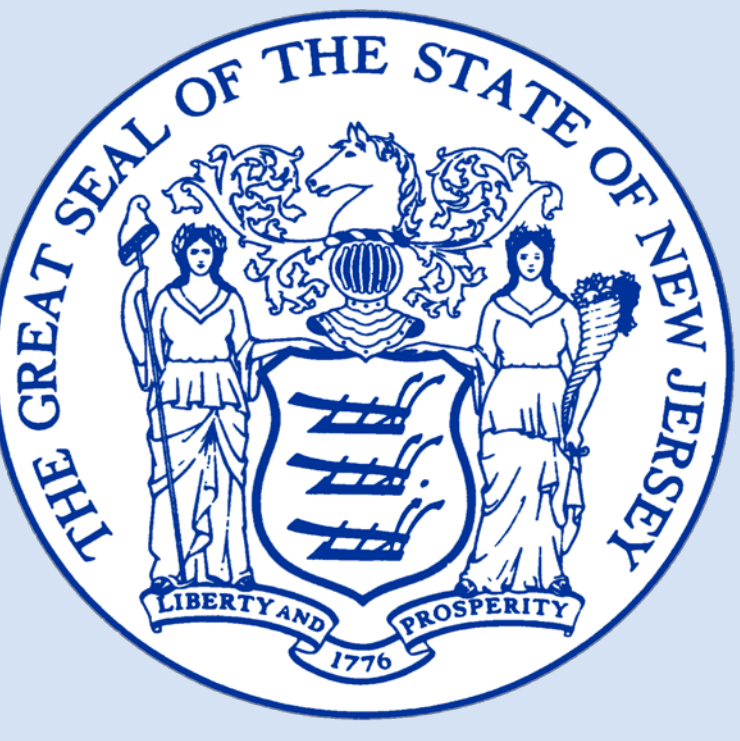
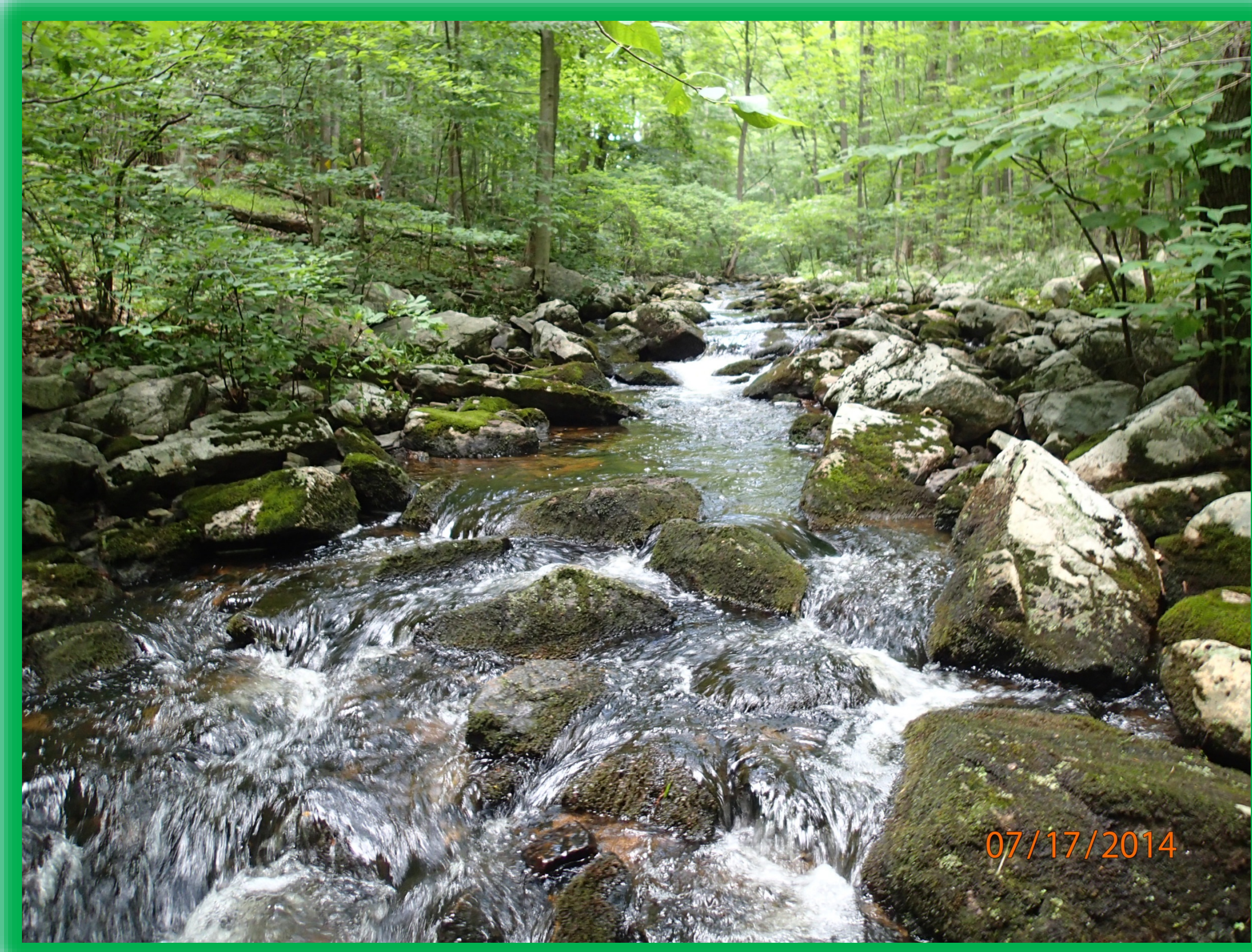




# New Jersey Headwaters Index of Biotic Integrity



## HEALTHY



In healthy headwater streams, we expect to see a diverse habitat with alternating riffles, runs, and pools with numerous boulders, cobbles, and gravel substrate to provide fish, crayfish and salamanders with an assortment of habitats. Riparian vegetation and overhead canopy help to shade the stream and prevents water temperatures from being too high. The fish, crayfish and salamander species in healthy streams are often sensitive to pollution and have specialized feeding, habitat guilds, and behavioral strategies.



Brook trout



Slimy sculpin



Northern dusky salamander



Common Crayfish



Northern red salamander



In moderately impaired headwater streams, we expect to see a less diverse habitat, with the majority of the substrate may be dominated by one size and is often embedded with fine sediment. The fish and salamander species composition will be less diverse in a moderately impaired stream with more generalist species present which can use a variety of food and resources.



Blacknose dace



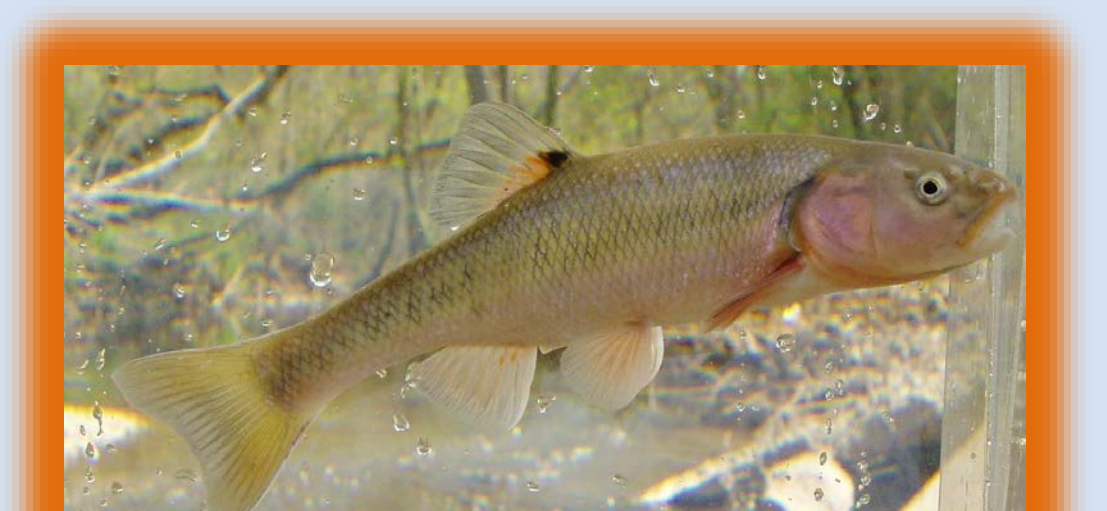
Redbreast sunfish



Tessellated darter



Two-lined salamander



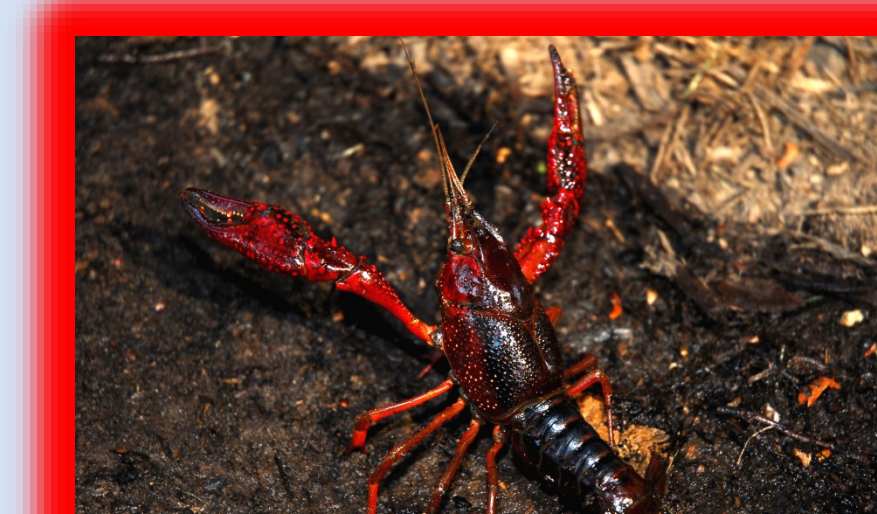
Creek Chub



In impaired headwater streams water quality and physical habitat will be degraded. Streams are often littered with trash, contain stormwater outfalls, have eroded banks and excessive sedimentation which limits fish and salamander habitat. The fish and crayfish community will be dominated by pollution tolerant species, with a large proportion being invasive species which can thrive in impaired ecosystems. Streamside salamanders are often absent in these conditions.



Fathead minnow



Red swamp crayfish



Banded killifish



White sucker



Green sunfish

## IMPAIRED