

The Development of an Index of Biotic Integrity for Headwater Streams in Northern New Jersey

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Biographical Sketches of Authors

Richard Horwitz received a B.A. from Cornell University and a Ph.D. from the University of Chicago. He is currently leader of the Fisheries Section of the Patrick Center for Environmental Research (PCER) at The Academy of Natural Sciences. He has also served as the leader of the Biometry Section at PCER. His research interests include factors affecting distribution and abundance of freshwater and estuarine fishes, particularly effects of watershed land use, hydrology, dams and habitat on stream fishes. He is also interested in the monitoring, assessment, and analysis of trends of ecological condition, such as measures of biotic integrity, abundance and contaminant concentrations. He is concerned with the design and evaluation of projects for the restoration of aquatic and terrestrial ecosystems, and he recently completed master planning for natural lands restoration within Fairmount Park in Philadelphia, one of the nation's largest urban parks.

Christina Faust is a Biologist with the Bureau of Freshwater and Biological Monitoring within New Jersey's Department of Environmental Protection. Her background includes research on both freshwater and marine fish. She is currently working on New Jersey's Index of Biotic Integrity monitoring program and headwater IBI development.

Abstract

Due to naturally low species richness, headwater streams are excluded from New Jersey's current Fish Index of Biotic Integrity (IBI) monitoring program. Recognizing their ecological significance and the need to monitor the health of headwater streams, the New Jersey Department of Environmental Protection (NJDEP), in collaboration with the Philadelphia of Academy of Natural Sciences (ANS) has begun the development of an IBI for streams smaller than five square miles. During the summer of 2003, NJDEP and ANS collected fish, amphibians and crayfish from eight reference and seven stressed headwater streams in northern New Jersey. Our poster will outline the sampling methodologies used and present preliminary findings from the first year of sampling.