



## Natural History Field Seminars, Workshops, and Courses at Eagle Hill on the Eastern Maine Coast

# Species ID and Assessment of Northeastern Freshwater Fish Assemblages

June 10 – June 16, 2012

Freshwater fish in the northeastern United States number over 150 species, inclusive of native and introduced forms, resident to ponded and flowing waters of varying habitats and water quality. Sportfish species (trout, salmon, bass, pike and perch) are most recognizable, while many of the vast minnow (one-third of the fish fauna) and non-game species are more difficult to identify, particularly in the field. This seminar will focus on the taxonomy and field/laboratory identification of 28 freshwater fish families, inclusive of diadromous (migratory) species. Through lectures, actual field sampling (minnow trapping, beach seining, and backpack electrofishing), examination of fresh and preserved-aquarium specimens, and use of technical keys, participants will gain an understanding of the taxonomy, morphology, and ecology of freshwater fish. Fish origins, distributions, and conservation status will be emphasized and development of Indices of Biotic Integrity (IBI) and the Biological Condition Gradient (BCG) reviewed. There will also be an introduction to pre-Columbian fish remains found at Maine archaeological sites, and a listing of historical and current scientific literature will be provided. This seminar will be of great interest to aquatic-wildlife-conservation biologists-scientists, environmental consultants, natural historians, and others who wish to learn more about freshwater fish and resident fish species assemblages.

Dave Halliwell ([david.halliwell@maine.gov](mailto:david.halliwell@maine.gov)) is a certified AFS Fisheries Professional with a Ph.D. in Fishery Biology from the University of Massachusetts, Amherst, specializing in fish conservation, aquatic habitat classification, and vertebrate taxonomy. He has been employed as an Aquatic Biologist with Maine DEP (Augusta) since 1999. Dave has spent over three decades identifying and investigating the habitats of freshwater fishes while working with northeastern State and Federal fish and water quality agencies and has considerable experience teaching University and field courses related to New England fish and wildlife. Related interests include pre-European indigenous fish (archaeological) studies, aquatic habitat restoration, hydropower-flow issues, reservoir water levels, lake water quality assessment, and fish zoogeographic studies. Dr. Halliwell is a co-author of the *Inland Fishes of Massachusetts* (2002).

Rich Langdon ([rich.langdon@state.vt.us](mailto:rich.langdon@state.vt.us)) has a M.S. in Fisheries Science from Humboldt State University, CA and will co-instruct this seminar in 2012. Rich also provides over two decades of experience as an aquatic biologist with the Vermont DEC (Waterbury Lab), specializing in the study of resident fish assemblages in running waters. He has developed modifications for the Index of Biotic Integrity and Biological Condition Gradient analysis of New England wadeable streams. His research interests include the classification of running water fish assemblages and post-glacial fish distribution patterns. Rich is co-author of *Fishes of Vermont* (2006).

