**Title:** Using a Multi-faceted Approach to Answer Applied Fisheries Questions

**Author:** Justin A. VanDeHey, Assistant Professor of Fisheries and Aquatic Sciences, University of Wisconsin-Stevens Point. Justin.vandehey@uwsp.edu

**Abstract:** Historically, fisheries management consisted of single-species management with a focus on recreationally and commercially important fishes. Management activities were conducted with little thought about the communities and ecosystems as whole and as a result, many management prescriptions failed to meet desired outcomes. While recreationally and commercially important fishes are still the focus of most management activities, biologists now understand these species do not exist in a vacuum, and hence understanding the complex interactions between fish populations, aquatic communities and associated habitats is critical to properly manage aquatic ecosystems. Fortunately, the advent and application of modern ecological methods now allows for a more comprehensive evaluation of fishes and aquatic ecosystems. The focus of my research has been to use a multi-faceted approach incorporating these modern ecological methods into traditional applied fisheries management. To illustrate this, my presentation will focus on several different case studies where I have used a variety of ecological methods to address complex questions. Case studies will include (1) developing stock-based management for Lake Whitefish, (2) understanding the effects of introductions and extirpations of a keystone species, Gizzard Shad, on aquatic communities, and (3) assessing the recovery of a previously extirpated species, Lake Sturgeon, in a modified habitat. Through these case studies I will demonstrate the utility of using a multi-faceted approach incorporating modern ecological methods with traditional management methods to better resolve applied fisheries questions.