The assessment of fish health can be an effective tool in regards to gaining an insight into the health of a fish population, as well as gaining an inference on the health of the water system in which these fish inhabit. The use of the fish health assessment index allows for a quick analysis of a large population of fish with only minimal amounts of equipment needed and researchers need little to no training to be able to perform the assessment. In addition to being a quick way to analyze fish health the health assessment index also is very customizable. The HAI allows for the integration of additional health metrics such as bacteriology, hematology, and histology which grant researchers the ability to assess a wide array of health parameters. Assessing multiple areas of health give a more detailed look at the health of a fish population. The health of Morone americana (White perch) will be assessed in the Choptank River and its tributaries in Maryland. Also, a flow cytometry protocol will be developed to rapidly quantify blood cells. Flow cytometry data will aid in obtaining an accurate count of blood cell population and to analyze the proportion of white blood cells, which may be important as an additional health metric.