Heartland Network

National Park Service
U.S. Department of the Interior

Heartland Inventory and Monitoring Network

Fish Communities at George Washington Carver National Monument

Importance: Fish indicate stream health

Fish community composition offers a good indication of long-term environmental conditions within a stream. Many native fish populations have decreased in abundance throughout their ranges, largely because of land use changes that contribute to habitat degradation. George Washington Carver NM streams may offer important habitat and protection for native fishes. Information on abundance and diversity of native species can indicate a stream's biotic integrity and the quality of fish habitat. Interpretation of data collected through long-term monitoring equips park managers with science-based understanding needed to make informed decisions on aquatic resource management that protects the entire aquatic community.

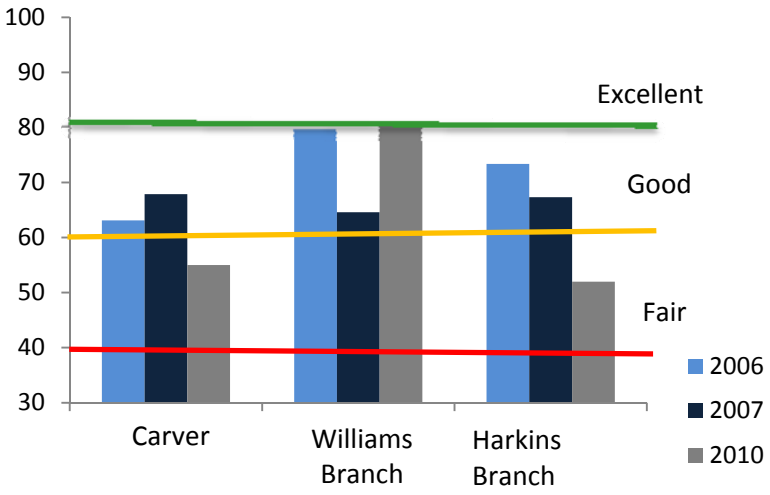
Harkins Branch at George Washington Carver National Monument - HTLN file photo.

Long-Term Monitoring:[1] Findings inform decision-making

The Heartland Inventory and Monitoring Network sampled fish communities in three streams in the park during 2006 and 2007, and repeated the sampling in 2010. The network collected physical habitat and water quality information in conjunction with fish sampling. These data contributed to determining the status of fish communities. The data also establish a baseline for long-term trends in fish community composition and for correlating community composition to water quality and habitat conditions.

Status and Trends: Diverse and stable fish communities

Scientists found that, generally speaking, the fish communities are diverse and healthy in the three creeks at George Washington Carver NM. Numerous native fish species live in these streams and community composition consists of several darter, sculpin, and madtom species that are sensitive to poor water quality and habitat conditions. Finding these species suggests good water quality and habitat availability within the creeks. Scientists also found:



Index of Biotic Integrity quantitatively assesses the composition of the fish community. Thresholds indicating overall biological health of a stream are set at fair, good, and excellent. None of the calculations fell in the poor range.

1. Low occurrence of fish anomalies or diseases and high biotic integrity scores suggest that the fish populations are healthy and that streams within the park are in good condition.

2. The temporal variation in water quality parameters suggests that annual differences in environmental conditions (rain, temperature, etc.) likely influence water quality in these streams.

Heartland Inventory and Monitoring Network of the National Park Service. Visit www.nps.gov/im/units/htln/index.htm

. . . protecting the habitat of our heritage

Heartland Network Natural Resource Monitoring

[1] Dodd, H.R., D.E. Bowles, and S.K. Mueller, and M.K. Clark. 2011. Fish community monitoring at George Washington Carver: 2006-2007, 2010 status report. Natural Resource Data Series NPS/HTLN/NRDS—2011/138. National Park Service, Fort Collins, Colorado.