



Hammond Bay Biological Station

The USGS Great Lakes Science Center is dedicated to providing scientific information for restoring, enhancing, managing, and protecting living resources and their habitats in the Great Lakes region. The USGS Great Lakes Science Center is headquartered in Ann Arbor, Michigan, and has biological stations and research vessels located across the Great Lakes Basin.



The Station

Hammond Bay Biological Station (HBBS), located near Millersburg, Michigan, is a field station of the USGS Great Lakes Science Center (GLSC). HBBS was established by congressional action in 1950 under initial supervision by the Bureau of Commercial Fisheries. HBBS has subsequently been supervised by the Bureau of Sport Fisheries and Wildlife (1970) and U.S. Fish and Wildlife Service (1971), finally joining the GLSC in 1974, which transferred to the USGS in 1996.

The facility was opened in 1876 and served as a U.S. Life-Saving Service station, and later a U.S. Coast Guard station, until being decommissioned in 1947. With the growing threat to Great Lakes fisheries caused by sea lamprey invasion, the facility was converted into a biological station. Since then, the primary mission of HBBS, to develop control measures for sea lamprey, has been pursued with great success.

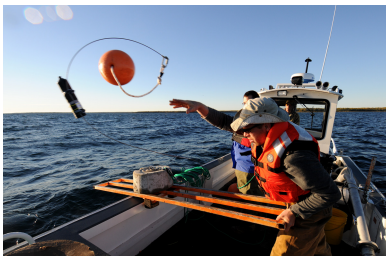
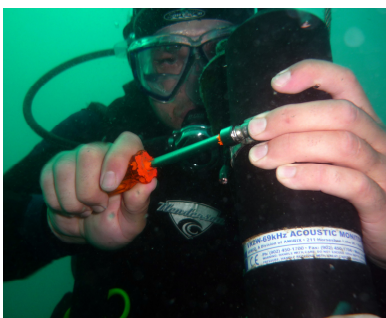
Research

In cooperation with the Great Lakes Fishery Commission, HBBS is one of the leading research facilities in the Great Lakes for invasive species control and native fish restoration.

Station research focuses primarily on the sea lamprey, a fish species that invaded the Great Lakes in the 1800s and subsequently devastated many native fish populations, particularly lake trout. HBBS scientists study all stages of the sea lamprey life cycle, including the larval stage that burrows into stream bottoms, the metamorphosing stage that migrates downstream to lakes, the juvenile stage that feeds on host fishes, and the adult stage that migrates upstream to spawn. HBBS scientists are responsible for major developments in sea lamprey control, such as designing barriers to migration, discovering selective chemical toxicants (lampricides), and developing alternative (non-lampricide) control technologies. HBBS scientists also undertake cutting-edge research on sea lamprey biology and ecology of other fish populations, such as lake trout, walleye, whitefish, Chinook salmon, and lake sturgeon.

HBBS researchers are currently studying new technologies to improve sea lamprey control, fishery management, and native fish restoration. Researchers are testing sea lamprey odorants (pheromones) for disrupting natural migration and





reproduction, and for luring sea lampreys into traps. Researchers are also testing sea lamprey alarm odorants (repellents) for diverting lampreys away from favorable spawning habitats, and toward poor habitats or better trapping locations. Sea lamprey behavior is also being studied to improve accuracy of population size estimation and to develop new trapping technologies, including electrical systems to guide metamorphosing and adult lampreys into collection traps and fish wheels on large rivers. Station researchers also use advanced telemetry technology to track fish movements, including sea lamprey migration through the St. Marys and Cheboygan Rivers, lake trout spawning behavior in northern Lake Huron, and walleye movement in the Great Lakes. The expertise and diverse research programs at HBBS are continuing a tradition of delivering important advancements in Great Lakes fish ecology and management.

Facilities & Vessels

HBBS is located on a 60 acre property along Lake Huron. Facilities include newly renovated offices, wet and dry labs, two workshops, and several buildings for storage and housing boats. The station is able to pump more than one million gallons of Lake Huron water per day for holding fish for extended periods. Multiple on-site artificial channels provide controlled experimental settings for fish behavioral studies and nearby streams provide natural experimental environments. The station is equipped to conduct tests of various environmental parameters on toxicity of lampricides to sea lamprey and other fishes.

HBBS operates four small vessels that allow research to be conducted over a wide range of environments

and conditions. The Sea Ark is a 25 ft aluminum roustabout with a front deck, electric winch, and heated cabin. The Parker is a 25 ft fiberglass v-hull with a large cabin and rear deck. Both vessels are equipped with twin 175 hp outboard engines, GPS, and radar navigation. The vessels are well-suited for Great Lakes and large river research. Two skiffs also provide access to rivers, bays, and inland lakes.

Partners

HBBS collaborates with a diversity of management and research partners, and is largely funded by the Great Lakes Fishery Commission (GLFC). Station scientists conduct research and provide technical support to the GLFC and its sea lamprey control agents, the U.S. Fish and Wildlife Service and Fisheries and Oceans Canada. Cooperative studies are conducted with GLFC-funded researchers from U.S. and Canadian universities, and with biologists from federal, state, provincial, and tribal agencies across the Great Lakes basin. Through an agreement with the GLFC, HBBS is formally partnered with Michigan State University and the University of Guelph. Station facilities are routinely provided to other researchers worldwide who are engaged in research on lampreys and other Great Lakes fishes.



Field test of an electric barrier to block sea lamprey migration.

