



Michigan Department of Natural Resources

Research Section: Large Vessel Program

The Great Lakes are ecologically significant on a worldwide scale, as they contain 20 percent of the world's fresh water. The state of Michigan, which includes 43 percent of the Great Lakes, has a considerable responsibility in the protection, management and rehabilitation of this important fresh water resource. To meet our public trust responsibilities, Fisheries Division funds and operates four research vessels to investigate, monitor and evaluate the status of aquatic habitats and fisheries resources of the Great Lakes. These vessels are essential to fulfill the division's constitutional and statutory responsibilities as trustee for the preservation of public resources in Michigan waters of the Great Lakes.

S/V Steelhead



The largest vessel in the fleet, the survey vessel *Steelhead* was constructed in 1967 as a commercial trawler. The T. D. Vinette Company, Escanaba, Michigan designed and constructed the *S/V Steelhead* for the Department of Natural Resources for the purpose of sampling fisheries and deep-water habitats of the Great Lakes. It has operated out of the Charlevoix Fisheries Research Station since 1968. The *Steelhead* is primarily setup for gill netting, trawling and hydro-acoustics but has proven to be an excellent platform for other sampling gear. The *Steelhead* operates with a crew of four including a captain, assistant captain, fisheries technician, and fisheries assistant. Onboard there is a pilot house,

laboratory, five sleeping berths, shower, electric toilet, full galley with refrigerator, stove/oven, microwave, sink, and small dining table. The *Steelhead* is the only state vessel to use on-board crew accommodations.

The *Steelhead* typically operates from April through October on Lake Michigan conducting fisheries assessments. Assessments begin in the spring with a bottom gill net survey targeting primarily lake trout, whitefish, and yellow perch. In August the *Steelhead* takes part in a multi-agency acoustic survey to quantify Lake Michigan forage fish populations. Following the acoustics survey, the *Steelhead* is employed in a bottom trawling survey to measure abundance of young yellow perch. Along side the standard assessments, the *Steelhead* collects various samples for both state and federal agencies, and academic institutions. The *Steelhead* performs a majority of its work out the the ports of South Haven, Saugatuck, Grand Haven, Ludington, Leland and Charlevoix.



R/V Channel Cat



The research vessel *Channel Cat* is a steel hulled fish tug designed for a trap net fishery operation, similar to the Lake Erie trap net tugs. She was built for the DNR in 1968 by the Maybee Boat Company. Since that time, the *Channel Cat* has served as a work platform for Great Lakes fisheries research. The *Channel Cat's* home port is the Michigan Department of Natural Resources Lake St. Clair Fisheries Research Station located at the mouth of the Clinton River on Lake St. Clair.

The *R/V Channel Cat* is involved in annual survey activities on the Great Lakes and connecting waters of southeast Michigan from April through October. The survey season begins with a trap net survey on Anchor Bay, Lake St. Clair in late April that focuses on smallmouth bass, walleye, northern pike and muskellunge. In late May, and again in early September, the fish community of Lake St. Clair, including yellow perch, is monitored with a bottom trawl survey. The *Channel Cat* spends most of the month of June surveying lake sturgeon in the St. Clair River – North Channel with setline gear. The sturgeon population in Lake St. Clair is surveyed with bottom trawling during July and August. In early September, the *Channel Cat* makes the 2-day trek to Saginaw Bay to spend 2-3 weeks bottom

Specifications:

Length - 65 feet
Beam (width) - 16 feet
Draft - 6 feet
Displacement - 70 tons
Hull – Welded steel plates
Engines – Twin V-6 380 hp Cummins diesels
Max Speed - 10.5 knots (12mph)
Year Launched – 1968
Home Port – Charlevoix Fisheries Research Station

trawling as part of an annual fall fish community survey that dates back to the early 70's. After returning to Lake St. Clair, the vessel travels further south to conduct the annual Lake Erie index walleye gill net survey in mid-October. In addition to these standard, long-term surveys, the *Channel Cat* occasionally serves as the work platform for short term or one time sampling efforts in collaboration with other state and federal agencies or academic institutions.

The standard crew includes a captain, assistant captain, biologist, technician and fisheries assistant.



Specifications:

Length - 46 feet

Beam (width) – 13 feet

Draft - 4 feet

Displacement – 15 tons

Hull – Steel hard chine modified deep displacement

Engines: Twin 210 hp 6V 53 Detroit Allison diesels

Max Speed – 12 knots (14 mph)

Year Launched – 1968

Home Port – Lake St. Clair Fisheries Research Station

R/V Tanner



The *R/V Tanner* is now the newest vessel in the DNR fleet and was launched in spring of 2016. She replaced the *R/V Chinook* which now resides at the Besser Museum in Alpena, MI after 69 years of service.

Designed by Seacraft Design LLC in Sturgeon Bay, WI and built by Andersen Boat Works in Douglas, MI, the *Tanner* brings increased efficiency, safety and scientific capability to the DNR's vessel-based, fisheries research on Lake Huron. She is fully rigged for gill-netting and bottom/midwater trawling and is fully equipped with state-of-the-art, scientific equipment

including a remotely operated vessel (ROV), side scan sonar and hydroacoustic technology.

The *Tanner's* season begins in April with variable-mesh gill-netting that targets lake trout. Fourteen stations are surveyed from Detour to Harbor Beach. Summer surveys include gill-netting and trawling that targets lake trout, whitefish and chubs. The fall season takes the vessel to Saginaw Bay in September where the fish community is sampled from Caseville to Tawas. The Les Cheneaux Islands fish community survey is conducted in October, as well as lake trout spawning assessments in Thunder Bay and Port Austin.

The crew consists of a captain, assistant captain, biologist, technician and a fisheries assistant.



Specifications:

Length – 57 feet

Beam (width) – 16 feet

Draft – 5 feet

Displacement – 26 tons

Hull – Aluminum planning hull

Engines (2): John Deere 6135SFM85 (450 HP each)

Max Speed – 22 knots (23 mph)

Launched – May 2016

Home Port – Alpena Fisheries Research Station

R/V Lake Char



The *R/V Lake Char* was constructed to replace the *R/V Judy* and to continue performing fisheries research on Lake Superior. The research vessel *Lake Char* was christened on May 1, 2007

in Marquette's lower harbor. The *Lake Char* was built for the Michigan Department of Natural Resources, Fisheries Division to be a dependable, reliable work platform on Lake Superior for 50+ years. "Lake Char" is a variation on the name for lake trout, the top native predator fish in Lake Superior. The *Lake Char* operates out of the Marquette Fisheries Research Station.

The vessel was designed by Tim Graul, a naval architect in Sturgeon Bay, Wisconsin, and built by Dave Andersen of Andersen Boat Works in Douglas, Michigan. The *Lake Char* allows the crew to continue their work with tremendous improvements in safety, flexibility and dependability. Greater flexibility comes from the capability to continue with current studies and take on new studies in the future.

The *Lake Char* conducts fish sampling on the Michigan waters of Lake Superior as far east as Grand Marais and then west to Black River Harbor. Studies at Isle Royale have been conducted aboard the *Lake Char* as well.

The operational season typically runs from late April through October. Fish sampling gear deployed from the vessel includes gill nets and hydro acoustic equipment. The ability to trawl is currently being addressed for future studies.

The standard crew of four includes a captain, assistant captain, biologist, technician, and fisheries assistant.



Specifications:

Length - 56 feet

Beam - 16 feet

Draft - 4 1/2 feet

Displacement - 26 tons

Hull - Aluminum displacement

Engines: Twin Caterpillar C12 diesels

Max Speed - 19 knots (22 mph)

Year Launched – 2007

Home Port – Marquette Fisheries Research Station

Vessel Contributions to Fisheries Division

Work performed by these vessels includes evaluations of fish population abundance levels, survival, age structure, growth, behavioral patterns, movements, reproductive ecology, as well as diet for fish stocks providing important resources for the people of Michigan. The vessels contribute to the process of evaluating stocking practices to determine optimal strains, densities, sizes, times and techniques to maximize survival and return to creel while minimizing cost. Vessels collect fish which are used for contaminant analysis to assess the potential risk to public health from consumption of fish from the Great Lakes. Data collected by the vessels are used to evaluate population level effects of habitat alterations on fish communities. Data are also used to develop and test models that predict the effects of regulation changes, predict the influence of aquatic exotic species on fish communities, as well as determine sustainable harvest levels and partition the allowable catch among sport, commercial and tribal fisheries. International multijurisdictional management plans that include fish community level objectives for major fish stocks depend heavily on data provided from our research vessels.