



# Vessel Program Newsletter

March 3, 2020

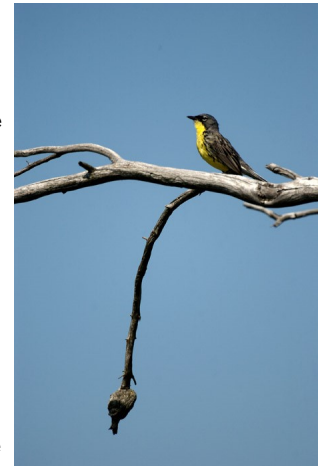
## Putting fuel in the tank and bodies on the boat...

You don't have to be a die-hard fisherperson catching your limit of walleye on Saginaw Bay to enjoy the rewards of successful natural resource management. You may be a backpack hiker on public trails or a birdwatcher seeing your first Kirtland's Warbler. Regardless, the amazing natural resources around us are managed and often continuously maintained by the Department of Natural Resources.

As fisheries research vessel crews and captains head out on the water, there are the daily questions like, "What will the weather do?" and "What heading or net setting direction will be most appropriate?". But these days, there are bigger questions that captains, crew and managers across natural resource management are wrestling with. Specifically, where are we going to get the money to do this?

The nation's natural resource management funding model is suffering (if not broken). Relying heavily upon dollars collected from hunting and fishing equipment and license sales, the revenue stream is slowly drying up. Generations of outdoors-people are aging out of the stream and fewer young people are embarking on "traditional" outdoor activities like hunting and fishing.

Outdoor recreation is alive and well, but often in non-consumptive forms like kayaking, hiking, bird-watching or just generally enjoying the natural resources available to all of the public.



For these activities there are no fees—there is no payment for use. Yet, natural resource agencies are often engaged in managing and maintaining the availability of such recreational opportunities for the public-good—without appropriated funding.

Nationally, there is interest in bringing about a more stable funding model for natural resource management. Bipartisan support for conservation has traction and legislative bills such as Restoring America's Wildlife



Act (RAWA) have garnered support.

It will take efforts by *everyone* to move the needle in the right direction for conservation funding, however. Buying fishing and hunting licenses aren't enough anymore. Voicing support for conservation legislation directly to legislators and government officials can help to make sure that not only will there be warblers to watch, but bodies on the boat and fuel in the tanks to do the research that is integral to the management of our Great Lakes fish species.

### Inside this issue:

R/V Lake Char update	2
R/V Channel Cat update	3/4
S/V Steelhead update	5/6
RV Tanner update	7
Hot Topic / Crewmember Highlight	8
Contact Information	8

**Research Mission:** The mission of the Research Section is to provide information, models, and advice to make possible science-based management of Michigan's fishery resources.

This mission is pursued by synthesis of existing information gained through direct application of the scientific method into decision support tools. Research section includes biologists, analysts, technicians, and other support professionals. Research works closely with the other sections in Fisheries Division to assist in their missions by pursuing long-term or in-depth investigations that are normally outside the scope of other Fisheries Division units.

## R/V Lake Char-Marquette Fisheries Research Station



The Research Vessel Lake Char operates out of the home port of Marquette, MI and surveys the Michigan waters of Lake Superior. The vessel is manned with the following crew members based out of the Marquette Fisheries Research Station.

Boat Captain—Kevin Rathbun

Boat Captain—Chris Little

Research Biologist—Shawn Sitar

Fisheries Technician—Dan Traynor

Fisheries Assistant—Greg Kleaver

**Vessel business:** The R/V Lake Char was launched after winter layup on April 23, 2019 and prep

coming field season began in the days to follow. We set our first nets of the season on April 29 and lifted our last nets on October 24. We were on the schedule to set nets on Buffalo Reef and Traverse Island the week of November 11, weather permitting. It did not permit, and we ran the boat home from MTU on November 13.

The rough seas and ice buildup on the vessel made for a white knuckled run back to Marquette. The Lake Char was then dry docked on November 25 for a long winter nap.

**2019 Maintenance:** We had some work done on the boat by MCM Marine in Sault Ste. Marie, MI during the month of July. We had the hull painted, rudders re-packed, additional sacrificial anodes added, cutlass bearings and strut bearings replaced. We took advantage of the boat being in dry dock and added a transducer for the Garmin MFD (Multi-Function Display). After summer survey work was complete, we continued working on maintenance and im-

provement projects on the vessel. One huge improvement we made was to replace fluorescent lighting with LED lighting. Towards the end of the season we discovered the starboard block heater had quit working. Fortunately, we caught it in time and placed heaters in the engine room. We scheduled the repair work to be done with Fabick CAT after we pulled the boat. Since the fluid had to be completely flushed, it was decided to also replace the thermostat and other pertinent components within the coolant system. This was done on both engines as preventative maintenance. (Fire it before it fails.)



Spherical, sacrificial anodes were added to the Char's prop shafts to decrease galvanic corrosion on props and shafts.

The **Spring Survey** was performed to assess lake trout populations in the Michigan waters of Lake Superior from April 29 to May 8 and then continued May 28 to June 14. Four and half inch stretch multi-filament gill net is used for this assessment. From May 13 thru May 21 the Lake Char and crew went to **Isle Royale** to assess Lake Trout populations. This survey is conducted every 5 years. Graded multi-filament gill nets consisting of 2700' and 1800' gangs with 2" to 6" mesh changing ½" every 100' are used for this study. We ventured out to **Big Reef the week of June 17** to continue evaluating isolated Lake Trout relative to sport fishing pressure. Big Reef, like Stannard Rock, is a popular offshore fishing destination. The same types of gill nets that were fished at Isle Royale are used for this study. The **Summer Survey** was conducted to assess Lake Trout recruitment to the spawning stock in Lake Superior from August 5 to September 6. Graded multi-filament gill nets gangs with 2" to 2 3/4" mesh changing ¼" every 100' were used for this assessment. **October 7-8**, the Lake Char and crew were commissioned to collect 60 fish from the near shore spawning reefs around Marquette for EEDv sampling. The ves-

### Recent Surveys

sel was then staged at MTU's Great Lakes Research Center on October 10<sup>th</sup> to await netting the spawning reefs at Traverse Island (control reef) and Buffalo Reef (study reef). This project involved netting 40 Lake Trout and 30 Lake Whitefish spawning on each reef. Each fish was then implanted with a hydroacoustic tag so their movement could



be monitored. The purpose of this is to see if the dredging of the stamp sands is altering spawning habitat use across Buffalo Reef. (Click [HERE](#) for information.) This was a multi-agency project involving MIDNR, USFWS, GLIFWC, USGS and MSU. The Lake Trout were captured and tagged on October 22 thru October 24. Due to unseasonably cold temperatures the Lake Char was run back to Marquette and a local tribal fisherman was contracted for the whitefish tagging. This was completed November 13 thru November 15.

During the 2019 field season the crew collected 4874 fish of various species in 221,100 feet (41.9 statute miles) of gill net. The Lake Char had 390 hours of sea time and consumed 5288 gallons of fuel at an average of 13.5 gallons per hour.

For more information :

[Click](#)

## R/V Channel Cat-Lake St. Clair Fisheries Research Station

The Research Vessel *Channel Cat* operates out of the Lake St. Clair Research Station and works primarily on lakes Erie, Huron, and St. Clair. The crew aboard the *Channel Cat* consists of:

Captain-Roy Beasley  
 Assistant Captain-Jeremy Maranowski  
 Fisheries Technician-Brad Utrup  
 Fisheries Technician-Jason Pauken  
 Research Biologist-Andrew Briggs  
 Research Biologist- Jan-Michael Hessenauer



The 2019, **Lake St. Clair Fish Community Survey**: The trap-net survey was plagued by tough spring weather, such that only 28 net lifts were achieved, compared to 36 net lifts in both 2018 and 2017. Still, data were collected for a total of 1,912 individual fish representing 25 unique species. 2019 was a big year for Channel Catfish. We observed the highest catch per 24-hour net



set since 2002 (5.1 fish per 24 hours) and lifted a total of 1,595.8 kgs (3,518 lbs) of Channel Catfish out of our nets. Catch rates for Smallmouth Bass were the highest they have been since 2012 averaging 3.8 fish per 24-hour standard lift. Catch rates for Walleye were down in 2019 (3.0 fish per 24-hours) but 2019 still represented the third highest catch rate since 2002. Yellow Perch catch rates were also down from 2018, and at 0.9 fish per 24-hours below the study average of 1.54 fish per 24 hours since 2002.

**Lake St. Clair, Spring and Fall Trawls:** We conducted 7 spring trawl tows, and 5 fall tows. During both the spring and fall

### Recent Surveys



index site. However, spring catches of yearling Yellow Perch increased relative to 2018. Fall catches of Smallmouth Bass were down from 2018 at our index sites. We have added additional trawl locations in other areas of the lake to attempt to contextualize our index site catches, but these sites will require several more years of collection before their utility is known.

The **Sturgeon Setline Survey** on the North Channel of the St. Clair River was completed on June 21<sup>st</sup>. A total of 95 setline lifts resulted in the capture of 100 unique Lake Sturgeon, including 37 recaptures of fish tagged in previous years. The longest sturgeon captured was

69 inches long and the heaviest weighed 82 pounds. Overall catch rate was slightly below average since the survey began in 1996 but catch rate of juvenile Lake Sturgeon was above average. Data collected during this survey are used to assess the population demographics of Lake Sturgeon in the St. Clair River.

To maximize the information gained from our sturgeon setline survey, every setline had minnow traps attached to each end. Minnow traps were baited with earthworms and targeted Northern Madtom. Northern Madtom are a state endangered species but are evidently abundant in the North Channel of the St. Clair River. This year 44 Northern Madtom were captured. Given our success at sampling them, we have been collecting length and weight data and collecting spines for aging.



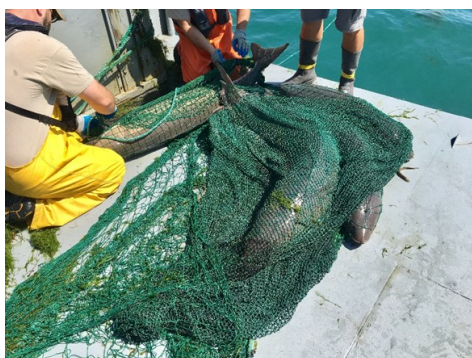
## Recent Surveys Continued

The 6<sup>th</sup> annual, **August Lake Erie Trawl Survey** was completed the week of August 5. A total of 7,806 fish



representing 18 different species were captured, which is more typical for the data series than the record high of 34,127 fish captured in 2018. Walleye and Yellow Perch catch rates reflected continued strong reproduction in the western basin; the relative abundance of age-0 Walleye in 2019 surpassed the record observed in 2018. Catch rates of age-0 Yellow Perch were the 2<sup>nd</sup> highest observed in the 6-year data series.

**Sturgeon Trawling** in Lake St. Clair was completed on August 23<sup>rd</sup>. A total of 35 trawls resulted in the capture of



44 Lake Sturgeon, including one recaptured fish tagged in a previous year. The longest sturgeon captured

was 73 inches long and the heaviest weighed 102 pounds. Since 2018 sturgeon trawling has been concentrated to one week near the end of August rather than periodically throughout July and August due to noticeably higher catch rates during this period. The 2019 sturgeon trawl catch rate (1.3/tow) was the highest since 2005. Similar to the set-line survey, data collected are used to assess Lake Sturgeon population demographics in Lake St. Clair.

The annual **Saginaw Bay Fish Community Trawl Survey** was conducted between September 5<sup>th</sup> and September 18<sup>th</sup>. The young-of-year Walleye catch rate was 26.3/tow, above the long-term average for the survey since Walleye recovery in 2003. The young-of-year Yellow Perch catch rate was 82.1/tow, below the long term average and the lowest since 2014 and second lowest since 2002. A total of 21,748 fish were caught representing 20 different species. The most common forage species were Mimic Shiner (223/tow), Trout-perch (207/tow), Round Goby (126/tow), and White Perch (94/tow). Also captured in 2019 was one large net stake or dock piling (pictured below) that destroyed one of our trawls. Data from this survey help inform managers on the status of forage fish along with the reproductive success and recruitment of Yellow Perch and Walleye in Saginaw Bay.

The 42<sup>nd</sup> annual **Lake Erie Fall Walleye Index Gill Net Survey** in the west basin of Lake Erie was complet-

ed the week of October 7. A total of 569 fish representing 13 different species were captured in four overnight gill net sets split between index stations near Stony Point and Luna Pier. The average gill net catch rate for Walleye in 2019 (83 fish/net lift) decreased from 2019 due to a lower proportion of fish from the large 2015 year class being represented in the



catch, an artifact of the gear's size selectivity. Clearly, the 2015 year class continues to be a strong contributor to the fishery as indicated by fishery-dependent data from the annual creel survey. While slightly lower than 2018, the 2019 catch rate of yearling walleye remained above average for the second year in a row and is the 4<sup>th</sup> highest yearling CPUE observed since 2004, when the very strong 2003 year class was sampled as age-1 fish.

Fisheries Division shares the information collected from all its annual Lake Erie survey efforts with partner agencies in Ohio, Pennsylvania, New York and Ontario through annual meetings fostered by the Great Lakes Fishery Commission. Collaboration through the commission's Lake Erie Committee supports fisheries management efforts across the Lake Erie basin, including setting of quotas for recreation and commercial harvest of Yellow Perch and Walleye.

For great YouTube coverage:

[Click Here](#)

## S/V Steelhead-Charlevoix Fisheries Research Station

The Survey Vessel *Steelhead* operates out of the Charlevoix Research Station and works primarily on Lake Michigan. The crew aboard the *Steelhead* consists of:

Captain- Jerry Ranville

Assistant Captain—Pat O'Neill

Fisheries Technician-Kris Snyder

Fisheries Technician—vacant

Research Biologist-Jory Jonas

Research Biologist—Ben Turschak

**Vessel Business:** The S/V *Steelhead* and crew headed out on-time for the spring survey; only a few small icebergs had to be avoided. For the sixth straight year, we were down a crewperson due to budget constraints. That position was filled with a short-term worker. Fortunately for us, we had a returning college student that was familiar with a lot of the vessel procedures. As the spring survey was winding down, our generator cracked a glow plug and we were not able to finish our last port for the Lake Wide Assessment Program (LWAP). With some July down time, the generator was fixed, and the hydro-acoustic survey got under way. We never experienced another vessel problem for either the acoustic survey or the fall bottom trawl.

One lingering concern for the crew of the S/V *Steelhead* is the future need for repowering the two main engines. The main engines in the vessel are the original 855 Cummins and both have been rebuilt three times. A typical rebuild lasts about 10,000 hours or approximately 20 years



of service. Unfortunately, the port motor has a counter rotating shaft that is no longer made and is extremely hard to find. During the rebuild in 2006, mechanics commented this might be its last since parts were so hard to find. In the grand scheme of Agency budgeting and bid processing, the timeline for repowering is quickly approaching.



*"Icebergs dead-ahead"... sorry wrong movie!*

### Recent Surveys

The **Lake Wide Assessment Plan** (LWAP) survey was conducted in seven ports this year; St. Joseph, South Haven, Saugatuck, Grand Haven, Arcadia, Leland and Charlevoix. This is a collaborative assessment of other Lake Michigan agencies that has been conducted since 1997. A total of 112,000 feet of experimental, bottom gillnet were deployed (all ports combined) by the *Steelhead* during this survey and yielded 5,713 fish. Of the fish captured, 1,016 Lake Trout, 638 Lake Whitefish, and over 1700 Yellow Perch were also sampled for biological data.

The objectives of this survey are to assess recreationally, commercially, and ecologically important fish populations (with a focus on Lake Trout, Burbot, Lake Whitefish, and Yellow Perch) in Michigan waters, and to use the information collected to inform ongoing research and management efforts of multiple species in Lake Michigan. For example, data from sampled Lake Trout are used by managers to implement appropriate harvest limits, measure rates of natural reproduction, and evaluate the effectiveness of Sea Lamprey control programs. Data from the LWAP

have also been used to document effects of invasive species like Zebra Mussels on Lake Whitefish populations, as well as to quantify movement of Yellow Perch among waters of Michigan and neighboring states. Due to the broad spatial coverage and multispecies focus, the LWAP survey provides us with our most comprehensive picture of the status of adult Lake Michigan fish populations.

Click [HERE](#) for a video from NatureChange that details some of the S/V *Steelhead's* survey activities.

## Recent Surveys Continued



The **Lake Wide Acoustic Survey**, also known as the prey fish or forage fish survey, was conducted again in August. The Steelhead was joined by the Sturgeon (USGS), the *Standford Smith* (USFWS), and the *Meshenahma* (LTBBOI) to complete over 30 lake-wide acoustic transects. This sampling effort was similar to previous years, and Michigan DNR completed 12 transects from South Haven to Charlevoix. In addition to acoustic data collection, we also sampled prey fish with mid-water trawls and sampled mysids with vertical-towed plankton nets. Results from this survey continue to inform research and management concerning predator/prey balance and lower food web changes in Lake Michigan.



In particular, managers can relate changes in prey fish population structure and abundance to Chinook Salmon,

Coho Salmon, Lake Trout, and Steelhead growth, abundance, reproduction, and survival. This information is subsequently input to a lake wide Predator-Prey Ratio analysis that facilitates annual, cross-jurisdictional management of Lake Michigan trout and salmon populations.

Results of the 2019 acoustic survey suggest that forage fish numbers were lower than observed in 2017 and 2018 and were near the lowest in the almost 20-year time series. This change was likely driven by a notable absence of YOY Alewife and Bloater at most ports although declines in numbers of yearling and older Alewife and Bloater were less apparent. Much of the transect area surveyed in Michigan waters in 2019 -particularly deep offshore locations—was completely absent of fish; an observation nearly unprecedented in the time-series. It is difficult to predict prey fish recruitment in the future, but this highly collaborative, multiagency survey will continue to monitor the status of prey fish to ensure that managers have the best available data for decision making.

**Bottom Trawl Survey:** Yellow Perch are an important component of Michigan's sport fishery in Lake Michigan and play an equally important role in the Lake Michigan biological community. They are a native species that play an important role in energy cycling and transfer, acting as both prey and predators, especially in nearshore waters. Trawling for young-of-year (fingerling) Yellow Perch (and other nearshore fish) is conducted by Charlevoix Fisheries Research Station personnel in September from the *S/V Steelhead* (as well as from smaller vessels). Ten-minute trawl tows are made at depths from 3 to 100 feet at the same ports sampled in the spring LWAP survey. Like the LWAP survey, the Bottom Trawl survey is conducted similarly by all resource agencies around Lake Michigan, and information is shared to facilitate better management of nearshore fish populations. For example, trawl sampling gives us our best early indication of Yellow Perch

**Did you know? The SV Steelhead celebrated its 50th year on the water in 2018!**

year-class strength (successful reproduction in a given year) and provides us with our best information on the overall status of the fish community including the presence, range expansion, and effects of exotic species. In 2019, over 3000 fish were collected via bottom trawl; of those, 6% were perch, 14% Gizzard Shad, 20% Rainbow Smelt and 58% were Round Goby. The smelt were a nice surprise, hopefully expanding beyond the Grand Haven area. Michigan anglers would certainly appreciate an increase in smelt dipping opportunities. Who would mind a glimpse into the old smelt-dipping days?

To learn more about the Charlevoix Fisheries Research Station:

[Click Here](#)



Assistant Captain Pat O'Neil processing one of the many Lake Trout caught in 2019.

## RV Tanner—Alpena Fisheries Research Station

The Research Vessel *Tanner* operates out of the Alpena Fisheries Research Station and works primarily on Lake Huron. The crew aboard the *Tanner* consists of:

Captain-Jeff Diemond

Assistant Captain-Bill Wellenkamp

Fisheries Technician-Darren Ver-cnocke

Fisheries Technician-Jerek Gutierrez

Research Biologist-Ji He

Research Biologist-Dave Fielder

State Worker—Michayla Coury



**Vessel Business:** The RV *Tanner* was launched after winter layup, on April 22<sup>nd</sup> as ice left the marina. The vessel was fit out and began surveying on April 24<sup>th</sup> near Thunder Bay. Vessel reliability was high, performance was good and the only unexpected maintenance was replacement of a 12V battery for the vessel's 12V system and the replacement of the faulty battery charger responsible for the failure. The *Tanner* was hauled out and stored on October 30<sup>th</sup> for winter layup and maintenance in Alpena. A back-up, solar battery charger along with new 8D batteries for the 24V "house bank" are to be added during 2019-20 layup.

## Recent Surveys

In preparation for **Cisco assessment** work to occur with USFWS in the future, the *Tanner's* hydroacoustic gear was calibrated and mid-water trawling equipment was trialed in late July. Unfortunately, rough seas prevented the actual survey work from being completed in outer Saginaw Bay, but the gear is ready for 2020 deployment.

In August, the *Tanner* and crew deployed oxygen sensors along with underwater cameras and its ROV to gather underwater video footage for the **Coryeon Reef restoration project** in Saginaw Bay. The project is a highly collaborative effort to restore historic, diverse spawning habitat within the bay for Walleye, Yellow Perch and possibly other species such as Cisco and Lake Whitefish.

To watch a short feature film about the Coreyon Reef Restoration: [Click Here](#)

**The Saginaw Bay Fish Community Survey** took place in early September at 8 fixed stations and 8 random stations from Tawas to Caseville using 24-hour gillnet sets. These data are used to help determine stock densities of Walleye, Yellow Perch, White Perch, White Bass and other species. This year's results will lend understanding to the effects of recent Walleye regu-

lation changes on the various fish populations in the bay. Concurrent bottom trawling efforts by the RV *Channel Cat* focus on prey species and allow managers to draw more informed conclusions about not just the predators but the food web as a whole.

The **Les Cheneaux Islands (LCI) Fish Community Survey**, in late September brought out the Fisheries Division Chief,



Jim Dexter to sample the Splake, Yellow Perch and Northern Pike populations among others. Six net nights with 1000', variable mesh gillnets collected 1145 samples, lending data to support fish population management in the LCI.

Finally, 1600 feet of gillnet was set overnight for the **Fall Lake Trout Assessment** at Adams Point. 62 Lake Trout were captured for age analysis and dissection.

To learn more about the Alpena Fisheries Research:

[Click Here](#)



The spring **Lake Trout Survey** had the RV *Tanner* sampling 14 stations from Port Sanilac to Detour. Each site was sampled overnight using 3600 feet (separated into 2 to four gangs) of multifilament gillnet set in 10 to 200 feet of water. Resultant data contributed to the calculation of TAC (total allowable catch) and harvest limits managed through enactment of regulations such as size and bag limits. Observations of Sea Lamprey wounds, disease prevalence and collections of samples for academic and agency partners also occurred.

**Did you know? Cisco are being stocked in Lake Huron by the US Fish and Wildlife Service as part of native species restoration efforts.**

## Crewmember Highlight

Jason Pauken works aboard the R/V Channel Cat out of the Lake St. Clair Fisheries Research Station. Hailing from Hillman, Michigan, Jason has a degree from Michigan State University and spent his first few years after college working as a Fisheries Assistant with MDNR. After spending time at Wolf Lake State Fish Hatchery and doing creel census work, he transferred aboard the Channel Cat in 2011 as a deckhand. This past year,

Jason was promoted to the level of Fisheries Technician.

Jason says he enjoys many aspects of his work especially getting a lot of chances to work with unique species such as Lake Sturgeon while aboard the Channel Cat.

Time off the water isn't quite "off the water" because Jason loves steelhead fishing in his free time and when he finally takes a break, he enjoys the time he spends with his wife.



Jason shows off a fine smallmouth Bass from Lake St. Clair.

## Vessel Program Hot Topic

Throughout the Great Lakes, the average age of research vessels is greater than 30 years. With the most recent addition of the RV Tanner, the Michigan DNR's vessels average age went from about 44 years down to about 28 years. Spanning nearly 12 decades cumulatively, the DNR's fleet still has two ships over 50 years of age (SV Steelhead and RV Channel Cat) — arguably exceeding the life-expectancy of most research vessels. The RV Tanner's predecessor, the RV Chinook, was 69 years old at its decommissioning in 2016—so old as to become a valuable museum piece at the Besser Museum in Alpena, Michigan!

Relating to "Putting fuel in the tank..." (page 1), the State of Michigan not only is focused on getting the vessels on the water and accomplishing valuable research during a time of reduced budgets, but ensuring that the older vessels in the fleet maintain safe and efficient working conditions even as they enter their "golden years". Captains and managers work together to ensure hull integrity, engine reliability and equipment safety are never neglected as challenging financial times arrive.



The R/V Channel Cat with the now retired R/V Chinook off her port-side back in 2004.

As natural resource agencies cope with changing financial dynamics, vessels continue to press on through the waves, to get the job done. Will the resources be available for timely replacement of the RV Channel Cat and the SV Steelhead? Only time will tell. With legislative support and a conservation-minded general public, hopefully the entire fleet can find itself in a secure, safe and efficiently operating position into the distant future!

Want to know more about research vessels?

[Click Here](#)

Please contact one of the research stations listed below for any further information.

*R/V Tanner*  
Alpena Fisheries Research Station  
160 E. Fletcher  
Alpena, MI 49707

Phone: (989)356-3232

*S/V Steelhead*  
Charlevoix Fisheries Research Station  
96 Grant St.  
Charlevoix, MI 49720

Phone: (231)547-2914

*R/V Channel Cat*  
Lake St. Clair Research Station  
33135 South River Rd  
Harrison Twp., MI 48045

Phone: (586)465-4771

*R/V Lake Char*  
Marquette Fisheries Research Station  
484 Cherry Creek Rd  
Marquette, MI 49855

Phone: (906)249-1611