



# Vessel Program Newsletter

January 12, 2015

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## Vessels: An Important Tool in Fisheries Management

Welcome to the first edition of the Michigan Department of Natural Resources Vessel Program Newsletter. The purpose of the newsletter is to give an update on activities the vessels performed during the 2014 survey season. So first off...Why does the DNR have vessels and what is their significance? 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 Fisheries Division's constitutional and statutory responsibilities as trustee for the preservation of public resources in Michigan waters of the Great Lakes.



**Point of Interest:**

Michigan DNR, Fisheries Division includes a section devoted to fisheries research. Approximately 40 people make up the Research Section, or about 22% of Fisheries Division. The mission of the Research Section is to provide information, models, and advice to make possible science-based management of Michigan's natural resources.

## Survey Season Updates

In the following sections, survey's and assessments that occurred during the 2014 season are recounted for each vessel. Each year between April and November the DNR's vessels hit the water to conduct fisheries surveys which produce important information on the health of the fishery in the lakes these vessels work on.



## RV Channel Cat-Lake St. Clair Fisheries Research Station

Meet the crew of the Research Vessel *Channel Cat* which operates out of the Lake St. Clair Research Station and works primarily on Lakes Erie, St. Clair and Huron.



Captain- Roy Beasley  
Assistant Captain-Jeremy Maranowski  
Fisheries Technician-Brad Utrup  
Fisheries Assistant – Jason Pauken  
Research Biologist-Mike Thomas  
Research Biologist-Todd Wills

**Vessel Business:** Two issues cropped up in 2014; one being the flex plate on the *Channel Cat's* port engine transmission just as the last net was being pulled during the spring trap net survey on Anchor Bay, Lake St. Clair. An emergency repair was completed in less than 48 hours by the Mt. Clemens Marine Center boat yard crew. This allowed the scheduled survey work to continue without any major disruptions.

On the way up to Saginaw Bay for the annual fall trawl survey the blower shaft broke on the starboard engine. The *Channel Cat* went into Lexington on one engine where Mount Clemens Marine Center staff drove up to diagnose the problem and replace the blower shaft.

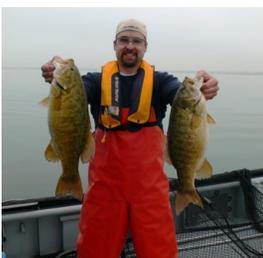
The maintenance projects for winter 2014 consist of installing down-imaging sonar, removing the PTO and replacing it with an electromagnetic clutch pump, applying two coats of anti-fouling paint to the hull, adding a new speed/distance/temp transducer, and building new trawl doors to exclusively use for sturgeon trawling. Most of the work was performed by the *Channel Cat* crew, with the exception of installing the electromagnetic clutch pump which was done by Mount Clemens Marine Center.



## Recent Surveys

The field season for the *RV Channel Cat* began with the **Spring Trap Net Survey** on Anchor Bay, Lake St. Clair. This is one of the survey components of the Lake St. Clair Fish Community and Fishery survey. Nets were set on April 24 and lifted on Monday, Wednesday, and Friday (weather permitting). Initially, cold water temperatures contributed to low catches of smallmouth bass, rock bass, and muskellunge, but catches of northern pike and channel catfish were impressive. MSU Animal Health Lab staff accompanied the *Channel Cat* crew on 4 dates to collect samples for ongoing VHS investigations. Other value-

added sampling during this survey has included collection of walleye for the DEQ contaminant



monitoring program and collection of white bass and white perch samples for a MSU parasitology study.

**The Sturgeon Setline Survey** on the North Channel of the St. Clair River was completed on June 20. A total of 112 setline lifts resulted in the capture of 118 lake sturgeon, including 31 recaptures of fish tagged in prior years.



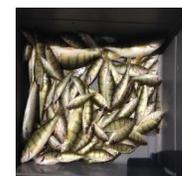
**The Lake St. Clair Trawl Survey** showed small yellow perch dominating the catch. Forage abundance, especially spottail shiners, was notably low.

**Sturgeon Trawling in Lake St. Clair** resulted in a catch of 37 sturgeon. The fish didn't seem as tightly grouped up this year and the catch was lower than last year.

**The August Lake Erie Trawl Survey**, completed for the first time since the 1970's, showed an abundance of YOY (young-of-year) white perch. Catch rates of YOY walleye and yellow perch in Michigan's waters were low in comparison to higher catch rates from surveys in Ontario and Ohio waters of Lake Erie.



**The Annual Saginaw Bay Fish Community Trawl Survey** was



completed in late September. Rough weather occurred the first week followed by calm seas the second

week. Survey highlights include: high age-0 walleye catches, low catches of benthic forage species, and low yellow perch catches for all ages.

## Recent Surveys (Continued)



Saginaw Bay bottom trawl sample.

**The Lake Erie Fall Walleye Index Gill Net Survey** was completed October 10. The total walleye catch was 282 fish in 4 overnight sets (a 65% increase from 2013).

In 2014 the crew aboard the *Channel Cat* was able to take two groups of people out on the water to showcase the work performed on our research vessels. The first group, including

Dennis Knapp and House Natural Resources Committee Chair Rep. Andrea Lafontaine, experienced set lining aboard the *Channel Cat* on June 6.

The *Channel Cat* also participated in two Sea Grant Discovery Cruises with a biologist on the cruise boats and the *Channel Cat* demonstrating sturgeon trawling. Sen. Steve Bieda, Rep. Terry Brown, and Steve Peruski (Chief of Staff for Rep. Pam Faris) were aboard the *Channel Cat* for a day of sturgeon trawling.

To see more of the great work conducted aboard the *Channel Cat* visit the following link:

[https://www.youtube.com/channel/UC0CigKtrjB\\_YTlwVJXq0rA](https://www.youtube.com/channel/UC0CigKtrjB_YTlwVJXq0rA)



Tub full of Smallmouth Bass caught during the Trap Net Survey.

## RV Chinook-Alpena Fisheries Research Station

Meet the crew aboard the *Research Vessel Chinook* which operates out of the Alpena Fisheries Research Station and works primarily on Lake Huron.



Captain- Jeff Diemond  
 Assistant Captain-Bill Wellenkamp  
 Technician-James Zellinger  
 Fisheries Assistant-Ken Glomski  
 Research Biologist-Ji He  
 Research Biologist-Dave Fielder  
 State Worker-Cameron Wright  
 Vessel Business: No major structural or mechanical issues occurred during the 2014 survey season. Oil testing on the main engine, transmission and

coolant system was conducted in June and October with no significant changes or issues. The *Chinook* was hauled out for the season on October 6th.



## Recent Surveys

The long and cold winter delayed the launch of the *Chinook* until April 24<sup>th</sup> with the first gillnets set on May 1<sup>st</sup>. **The Annual Lake Trout Survey** which covers 14 stations from Detour to Harbor Beach has continued to reveal improvement in natural reproduction and a building population. The spring survey lifted 100,000 feet of variable-mesh gillnet, including a new element of monofilament to com-

pare with the standard multifilament nets. A short summer survey on the heels of the spring survey rounded out the data for the models and also assisted in determining recruitment. The summer trawling consisted of 35 10-minute tows to assess the natural reproduction of Lake Trout, Lake Whitefish and Bloater Chubs. Fall spawning reef netting this year was in conjunction with a USGS telemetry

tagging study to determine spawning movement on natural and newly constructed reefs.



## Recent Surveys (Continued)

**The Saginaw Bay Fish Community Survey** has revealed walleye in Saginaw Bay remain at a high abundance and are now exhibiting signs of slow growth. Yellow perch remain greatly depressed in the bay, but the few that survive to adulthood are growing very fast. Early onset of maturity in both sexes is consistent with a very high mortality rate.



Crew observations from the survey season: Steelhead continue to show strong in the fishery and are seen in some of our survey catches. Atlantic salmon continue to show well but so far appear to be almost all Lake Superior State University reared fish, with poor returns of DNR planted fish. Chinook salmon are present; the population is growing but is still a fraction of former numbers.

**Did you know :** With the completion of the 2014 survey season the *RV Chinook* has completed its 67th year of service for the DNR.

In 2014 the *Chinook* crew processed 10,000+ fish and provided 1,000+ meals to non-profit organizations with the help of our partners who filleted the fish (including the Thunder Bay Walleye Club, Thumb Steelheaders-Janice Deaton, Alcona Food Banks, Les Cheneaux Island Sportsman Club, Bay City District Office and others).



## Crew Member Highlight

In every edition of the vessel program newsletter one crew member will be selected to give a biography of themselves and how they have achieved their current position. Captain Jeff Diamond is a native of Alpena, the current home port to the *Research Vessel Chinook*. He moved to within a few hundred yards of the *Chinook* in 1969 at the age of 8 and fished for perch, crappie, pike, and bass around the harbor at which the *Chinook* was moored. He attended Alpena Community College and began as a deckhand/state worker in 1984 onboard the *Chinook*. He trained under legendary Captains Bill Cross and

“Tuffy” Cross. The 2014 season will be his 26th year aboard the *Chinook*. Little did he know he would spend most of his career on the very boat he fished around as a youngster. He also worked in Bay City-Pinconning and Tawas-AuGres areas as a creel census clerk. In 2016 the *RV Chinook* is scheduled to be replaced by the *RV Tanner*. If you see the boat and crew at the dock or on the water feel free to chat about the fishery.



Captain Jeff at the helm of the *RV Chinook*.

## SV Steelhead-Charlevoix Fisheries Research Station



Meet the crew aboard the *Survey Vessel Steelhead* which operates out of the Charlevoix Fisheries Research Station and works primarily on Lake Michigan.

Captain-Jerry Ranville

Assistant Captain-Nathan Skop

Fisheries Technician(fill-in)-Pat O’Neill

Fisheries Assistant- Wayne Heinzman

Research Biologist-Randy Claramunt

Research Biologist-Jory Jonas

Vessel Business: During the 2014 survey season the *Steelhead* only had one

issue, which was a leak in the water intake valve on the starboard engine. Also known as a sea cock, this valve controls the water intake for the engine cooling system. The leak was discovered above the valve; if this valve failed, the crew would have no way to stop the water coming in. Due to the urgency of the problem the *Steelhead* had to travel to Mackinaw City to be lifted out of the water so repairs could be made.

## SV Steelhead

Installation of valves/plumbing was completed within 24 hours and the *Steelhead* was able to return to it's spring survey work.



In July the entire exterior of the *Steelhead* from the waterline up was given a fresh coat of paint.



Typically the *Steelhead's* season starts in early April, but in scheduling the survey season it was decided to start the spring survey in May and it was a good thing. Due to record ice coverage on the Great Lakes during the 2014 winter, the *Steelhead* wasn't able to leave Charlevoix until the first week of May which meant we were still on

schedule. Other than the icy start to the 2014 survey season the crew experienced decent weather on Lake Michigan.



**Did you know: From the start of the survey season in May to the end of October when the *SV Steelhead* was tied to the dock for the year, the vessel and crew traveled over 2,700 nautical miles on Lake Michigan.**

## Recent Surveys

The survey season for the *SV Steelhead* began in May with **The Lake Wide Assessment Plan Survey (LWAP)** which focuses on Lake Trout, Lake Whitefish, and Perch using bottom gill nets. Between May 5th and June 25th a total of 116,000 feet of gill net was deployed at seven locations from South Haven to Charlevoix. Total catch during the LWAP survey was lower than in previous years, probably due to cold water temperatures. A total of 1,058 Lake Trout, 206 Lake Whitefish, and 183 Yellow Perch were collected and sampled.



In 2014 a **Gear Comparison Study** was started during the LWAP survey to compare catch-ability between nylon and monofilament gill net. Vessel

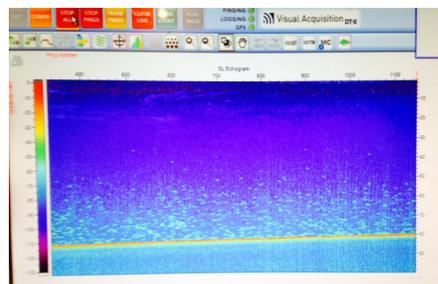
crew kept net types separate and also kept individual mesh sizes separate. A colored float helped to indicate mesh size, then fish from each mesh size were placed in a laundry bag to be processed. Results of the first year of the comparison haven't been compiled yet so it is unclear if fish are selective to mono or nylon. Crew observations were that lake whitefish catch-ability was greater with monofilament net, and other species of fish seemed to be equally susceptible to both mono and nylon.



**The Lake Wide Acoustics Survey** was conducted in August in conjunction with the US Geological Survey and US Fish & Wildlife Service. The *Steelhead* crew is charged with surveying ten transects in the Michigan

waters of Lake Michigan. The focus of this survey is to estimate forage fish biomass in Lake Michigan.

Data from this survey is still being compiled and should be released in early 2015.



Observations from the survey saw alewives unevenly distributed throughout the lake; young-of-the-year alewife seemed to be in the northern part of the lake whereas the adult alewife were more prevalent near shore in the south.



## Recent Surveys (Continued)

**Great Lake Fish Monitoring and Surveillance Program** gill net sampling for Lake Trout was conducted on September 22nd and 23rd in Saugatuck, MI. Every other year the US Environmental Protection Agency requests 50 Lake Trout from southern Lake Michigan. Once the Lake Trout are collected they are packaged very specifically, frozen, then shipped to a lab to be analyzed for contamination levels.



**The Yellow Perch Bottom Trawl Survey** started September 25th in South Haven and ended October 13th in Petoskey. Four key Lake Michigan yellow perch ports were bottom trawled, looking at recruitment and year class strengths. This year's survey produced low perch catches with few adult perch and almost no young-of-the-year perch.



Crew opening a Grand Haven bottom trawl haul of round gobies, carp and white suckers.



Bottom trawl with 3,500 round gobies.

Alongside the fisheries surveys the crew aboard the *Steelhead* participated in two educational events which put people on the boat experiencing fisheries work first hand. The first event brought attendees from the Lake Michigan Technical Committee meeting out to demonstrate different bottom mapping units and technologies. The second event brought attendees of the Aquatic Resources Education Association to work along side the *Steelhead* crew tending gill nets in Lake Charlevoix.

## RV Lake Char-Marquette Fisheries Research Station



Meet the crew of the *Research Vessel Lake Char* which operates out of the Marquette Fisheries Research Station and works primarily on Lake Superior.

Boat Captain – Kevin Rathbun

Assistant Boat Captain – Chris Little

Fisheries Technician – Dan Traynor

Fisheries Assistant – Greg Kleaver

Research Biologist – Shawn Sitar

**Vessel Business:** Due to the Polar Vortex, the 2014 field season did not officially start until June 1. The field season normally starts the last week of April. The *Lake Char* did not have any major issues crop up in 2014. The

crew did focus on addressing an ongoing project revamping the hydraulics to make the *Lake Char* trawl capable. A new hydraulic pump was installed on the port engine and the original pump is being rebuilt. The new hydraulic pump increased the system working pressure from 800 psi to 1100 psi. This has made a significant difference with the equipment. We still need to address overheating issues; plans are in the works to resolve this issue. Basic maintenance was carried out through the rest of the season.



Releasing tagged lake trout June 1, 2014 (notice the ice still present).

The *Lake Char* was prepped for dry dock and pulled out of the water on November 10. Not any too soon this year because as we were pulling out of the cradle it started snowing. Overnight and the next day Marquette received 20" of snow.

**Did you know:** During the 2014 survey season the crew aboard the *RV Lake Char* deployed 246,300 feet of bottom gill net (over 40 nautical miles).

## Recent Surveys

**New Technology:** Due to the late start, the crew began their season by gill netting and deploying satellite pop-up tags to larger lake trout (greater than 4.5 kg). The tags record depth, date, time, temperature and location by way of the earth's electromagnetic field. This is a new and upcoming technology that will make possible recording of migration patterns underwater. The tags are programmed to release from the monofilament harness at a specified time with a small charge of gun powder. The fish retain the harness that was surgically attached through the muscle to the rear of the dorsal fin (see photo). The tags float to the surface where satellites pick up a signal from the tag and transmit their location to a website. We then record the location and



Lake trout with pop-up satellite tag in place.

motor to that position where we use radio directional finding equipment to pin point the location and recover the tag. The data on the tag can be downloaded for analysis and the tag can be re-programmed for another deployment. Additional attempts to collect larger lake trout were conducted on October 27 and November 2; nets were set on a couple of the local spawning reefs to try to deploy 14

more satellite pop-up tags. Only 10 of the satellite tags were deployed.



Tag attached and ready to go.



Recovery time after surgery.

**The Isle Royale Survey** was conducted three times during the year, in June, August, and September. Work is performed to assess gonad development through the year of the various morphotypes of lake trout around the island. Multi-filament graded mesh gill net from 2" to 6" in ½" increments is used for this assessment.



**The Spring Survey and Stannard Rock Survey** is performed to assess the lake trout population in the Michigan waters of Lake Superior from the Porcupine Mountain area to Grand Marais. We use 4 ½" stretch multi-filament gill net for this assessment. Graded mesh from 2" to 6" in ½" in-

crements is also used for the Stannard Rock assessment.

**The Summer Survey** is performed to assess lake trout recruitment into the spawning stock. Graded mesh from 2" to 3" in ¼" increments with a panel of 3 ½" multi-filament gill net is used for this assessment.

The table below shows the number of fish caught for each survey in 2014.

<u>SURVEY</u>	<u>2014</u>
Spring	1,408
Stannard Rock	283
Summer	2,567
Isle Royale	1,375
Total	5,633

In the past few years the *Lake Char* crew has broadened its horizons beyond standard lake trout gill net surveys and has been enhancing their

skill set and adding to the vessel's toolbox by making use of new technologies in the field, such as: lasers, fat meters, centrifuges, pop-up satellite tags, and radio direction finding (RDF) equipment. Furthermore, the *Lake Char* continues to be a paperless vessel in terms of fish data collection (7 years).

Researchers in Marquette are taking advantage of opportunities to broaden their research program, which has taken the *Lake Char* crew to more remote, isolated offshore places such as Stannard Rock and Isle Royale. The long-range, unsupported operational capabilities of the *Lake Char* were tested when the crew took six one-week expeditions to Isle Royale, where there was no power and no communication available.

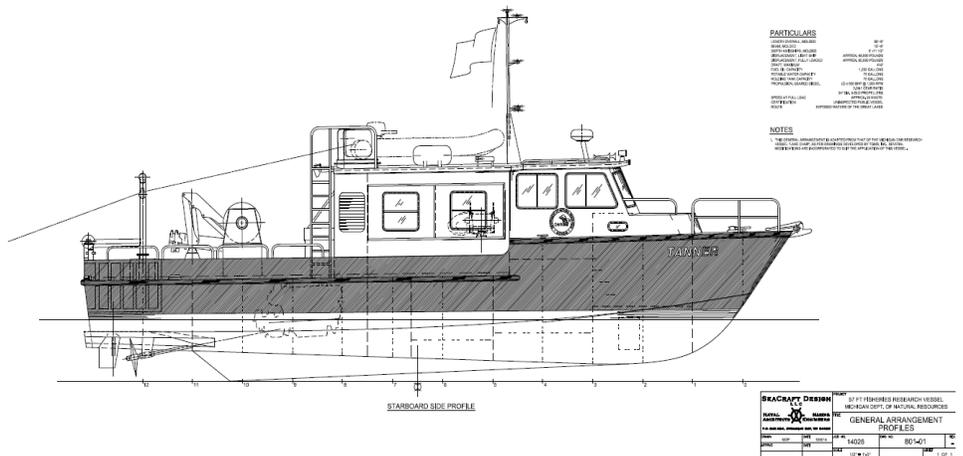


# Vessel Program Hot Topic

The “Hot Topic” is that the DNR is in the process of constructing a new research vessel. The new vessel named the *RV Tanner* is scheduled to replace the 67 year old *RV Chinook*. The *RV Tanner* will operate out of the Alpena Fisheries Research Station. So far funding has been acquired, and the vessel specs have been revised. The *RV Tanner’s* design will be modeled after the *RV Lake Char* with a few modifications. SeaCraft Design was awarded the contract to update the specs and make changes to prevent potential problems with the hydraulic and electrical system as well as design in new John Deere engines. Additionally, SeaCraft Design will also serve as a technical consultant to Fisheries Division, to help us get the highest quality

vessel built. Currently, bids have been submitted and are being reviewed; bidder selection and award of the *RV Tanner* construction contract should occur by the end of January. The projected dedication date is April 6<sup>th</sup> 2016, set to commemorate the 50<sup>th</sup> anniversary of the first stocking of Pacific Salmon in the Great Lakes for which Dr. Howard Tanner (the boats’

name sake) was principally responsible (among many other notable accomplishments).



## Want to know more about research vessels?

Please follow the link below to find out more information related to each of the Michigan DNR Fisheries Division’s Great Lakes Research Vessels.

[http://www.michigan.gov/documents/dnr/RV-FactSheet\\_454641\\_7.pdf?20141222113908](http://www.michigan.gov/documents/dnr/RV-FactSheet_454641_7.pdf?20141222113908)

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

RV Chinook  
Alpena Fisheries Research Station  
160 E. Fletcher  
Alpena, MI 49707

Phone: (989)356-3232

SV Steelhead  
Charlevoix Fisheries Research Station  
96 Grant St.  
Charlevoix, MI 49720

Phone: (231)547-2914

RV Channel Cat  
Lake St. Clair Research Station  
33135 South River Rd  
Harrison Twp., MI 48045

Phone: (586)465-4771

RV Lake Char  
Marquette Fisheries Research Station  
484 Cherry Creek Rd  
Marquette, MI 49855

Phone: (906)249-1611