

Cast Net Report

As required by Minnesota Statutes, section 97C.345, subdivision 3a, paragraph (c)

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Report to the Minnesota Legislature

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Pursuant to Minnesota Statutes, Section 3.197, we estimate that it cost approximately \$4,927 to produce this report. This include staff time for attending meeting, drafting, and review the report and compiling comments and recommendations. These costs do not include the cost of public participation efforts conducted by the Department of Natural Resources prior to the requirement that this report be prepared.

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DNR Cast Net Legislative Report

This report fulfills the requirements of Minnesota Statutes, section 97C.345, subdivision 3a, paragraph (c): “The commissioner must report to the chairs and ranking minority members of the house of representatives and senate committees with jurisdiction over environment and natural resources by March 1, 2018, on the number of permits issued, conservation impacts from the use of cast nets, and recommendations for any necessary changes in statutes or rules.”

Summary

The Minnesota Department of Natural Resources (DNR) started a 3-year test program to evaluate using cast nets to harvest gizzard shad for non-commercial, personal use as bait in 2015. A total of 82 unique anglers participated in the program over three years. The majority of the feedback the DNR received from the Catfish Workgroup and permit holders was positive. Cast nets proved to be a selective method for catching gizzard shad with only 1-3% non-target catch rate reported by anglers. The DNR was concerned about the movement of gizzard shad because gizzard shad are a VHS susceptible species, look similar to juvenile silver carp and bighead carp, and are found in the same waters as silver carp and bighead carp. Although there was some illegal transportation of gizzard shad, the DNR believes this activity was limited and can be addressed through education, permit conditions, and enforcement. The DNR has reached out to the Catfish Workgroup and permit holders regarding the risks of spreading invasive species and pathogens by moving gizzard shad. The DNR recommends continuing the cast net program with the following changes: refer to the size of the cast net by radius (the industry standard); increase the maximum size of the net to 5ft radius; add the Minnesota River to the list of waterbodies where cast nets can be used; and allow a spare cast net to be permitted.

Background

The Minnesota Department of Natural Resources (DNR) Catfish Workgroup was formed in 2011 as a way for the Minnesota DNR, Section of Fisheries, to work with angler representatives to enhance catfish angling in Minnesota. Several prioritized discussion topics have emerged, the most frequently mentioned category being bait. One topic within the bait category has been trying to find a way to obtain gizzard shad (*Dorosoma cepedianum*) for use as fresh dead or cut bait when angling for channel catfish (*Ictalurus punctatus*), flathead catfish (*Pylodictus olivaris*), and lake sturgeon (*Acipenser fulvescens*). Bait dealers and sport shops do not carry gizzard shad because this fish species is difficult to trap, transfer, and hold alive, unlike minnow species used as bait. Gizzard shad spend most of their time in open water, away from shore, so dip netting and seining to capture gizzard shad are largely ineffective. Anglers may harvest using hook and line bullheads (*Ameiurus* spp.), goldeyes (*Hiodon alosoides*), mooneyes (*Hiodon tergisus*), sheepshead (*Aplodinotus grunniens*), and suckers (*Catostomus* spp.) from infested streams and rivers for use as bait. However, gizzard shad eat plankton, thus hook and line angling methods are ineffective for capturing this fish. Seasonally, gizzard shad can be a large part of the aforementioned targeted fish species' diets and anglers are aware of this selective feeding preference.

The Catfish Workgroup proposed that the DNR consider cast nets as an alternative method to capture and use gizzard shad for bait. The workgroup suggested that cast nets could be permitted for this purpose only in large rivers where gizzard shad coincide with catfish and sturgeon.

The DNR's initial concerns about using cast nets to harvest gizzard shad included the possible impact on non-target species, or by-catch. Cast nets were not a legal gear type for taking fish in Minnesota. There were also concerns about spreading invasive species and fish pathogens because gizzard shad are found in portions of Minnesota's major rivers that are listed as infested with aquatic invasive species, they look very similar to juvenile silver carp (*Hypophthalmichthys molitrix*), and gizzard shad are susceptible to Viral Hemorrhagic Septicemia (VHS). Not much was known about the use of cast nets in Minnesota and if there would be impacts on non-target species. These concerns were acknowledged by the Catfish Workgroup and it was understood that the DNR would review the limited literature and contact other state agencies for information. As an outcome of these discussions, a January 10, 2015 Memorandum for Record from the Catfish and Sturgeon Alliance was submitted to the DNR as a proposal to allow the use of cast nets for the harvest of gizzard shad for bait for non-commercial, personal use.

In 2015, legislation passed authorizing the DNR to permit the use of cast nets to harvest gizzard shad on certain waters and evaluate potential impacts. The cast net permitting program started July 1, 2015 and continued through December 1, 2017. Cast net were only allowed on the St. Croix River below Taylor Falls and the Mississippi River below St. Anthony Falls as specified in Minnesota Statutes, section 97C.345, subdivision 3a, paragraph (a), item (2) and Minnesota Statutes, section 84D.03, subdivision 3, paragraph (d). These are listed as infested waters with both invasive carp and zebra mussels. Permit applicants were required to successfully complete aquatic invasive species training prior to being issued a no-fee permit. Cast nets were tagged prior to use in infested waters to help enforcement identify that the cast net was permitted and only authorized to be used in an infested water. The cast net season was July 1 - November 30 because gizzard shad are available and are the right size for use as bait during that time of year. Permittees submitted monthly reports on the number of gizzard shad that were captured, the number of trips they took, how many non-target species were captured, and whether fish were used as bait or released. Gizzard shad were only allowed to be used on the section of the river where they were captured and all unused gizzard shad and by-catch were required to be released back to the river.

Number of Permits Issued

A total of 82 unique anglers participated in the program over three years. The first year there were the fewest number of applicants (26). About 40 permits were issued each year during the second and third year.

Table 1. Cast Net Permitting Summary

Year	2015	2016	2017
Permits	26	46	43
Trips	122	129	89
Gizzard Shad	3268	1919	3741
Other Species	45	57	46
By-Catch %	1.35%	2.88%	1.21%

Conservation Impacts and Concerns

Non-Target Species:

Reported impacts on non-target species were relatively low. Only 1-3% of the total catch was a species other than gizzard shad. Anglers reported consistently being able to release non-target species back to the river limiting the direct impacts on non-target species to mostly handling stress. Cast nets were a selective method for catching gizzard shad. The DNR is satisfied the impacts to non-target species are minimal.

Invasive Species and Pathogens:

Cast nets were only allowed in the portions of the Mississippi River and St. Croix River that were listed as infested with invasive carp species and zebra mussels. Gizzard shad were required to be used in the same water body where they were caught and were not allowed to be transported above or below barriers or dams on these rivers for two reasons: 1) to prevent the spread of invasive species; and 2) to prevent the potential spread of fish pathogens. Gizzard shad look very similar to juvenile silver carp. Restricting their use to the same water body where caught reduces the risk of inadvertent spread of invasive carp species. Gizzard shad are also susceptible to the VHS virus. The movement of VHS susceptible species is restricted due to the risk of untested fish spreading the pathogen. Limiting cast net use to only areas that are infested with the same invasive species and not allowing transportation of gizzard shad helps to mitigate the risk of spreading both invasive species and fish pathogens. Additionally, education and enforcement to prevent the movement of gizzard shad will help mitigate this risk.

There were reported observations of anglers taking gizzard shad home and subsequently using them as frozen bait in the same or other rivers. There were also instances of people who were trying to sell gizzard shad online. This illegal transportation of gizzard shad off the river to other water bodies is a major concern because gizzard shad are a VHS susceptible species, and VHS can be transferred in frozen or dead gizzard shad. VHS continues to be an issue in the Great Lakes region. In 2017, there was a large gizzard shad die-off in Michigan that was attributed to VHS. The virus then spread to muskellunge (*Esox masquinongy*) in the St. Clair River. Currently, Lake Superior is the only VHS positive water in Minnesota, and for this reason Minnesota continues to be vigilant to prevent the spread of this pathogen. Restricting the use and movement of gizzard shad to the areas they were captured will help to mitigate this risk.

Recommendations for Changes in Statutes

The majority of the feedback the DNR received regarding the cast net permitting program was from the Catfish Workgroup and people who had been issued cast net permits. Overall, these individuals considered the cast net permit program to be a success. The stakeholders appreciated being able to use cast nets to harvest gizzard shad. Although there was some illegal movement of gizzard shad away from the source waterbody, the DNR believes this activity was limited and can be addressed through education, permit conditions, and enforcement. The DNR has reached out to the Catfish Workgroup and permit holders regarding the risks of spreading invasive species and pathogens by moving gizzard shad. The DNR recommends continuing the cast net program with the changes listed below. The DNR will continue to monitor risks associated with harvesting gizzard shad with cast nets and may propose additional changes if necessary to protect natural resources.

The DNR recommends the implementation of several suggestions received from our stakeholders.

1. Cast nets are marketed in reference to radius (feet). Currently, the statutes specifies cast net size in diameter. References to the size of the cast net should be made using the radius to match industry standard and reduce confusion.
2. Stakeholders requested allowing larger cast nets. Currently, a maximum 3.5 ft. radius cast net is allowed. Anglers would prefer a larger net that would be more effective at harvesting gizzard shad. Very little by-catch was reported using the 3.5 ft. radius cast net. The DNR proposes allowing cast nets up to 5 feet in radius. The DNR will monitor cast net by-catch to ensure a larger diameter net does not negatively impact non-target fish populations.
3. Minnesota River is a popular destination for catfish anglers and contains gizzard shad. However, the Minnesota River was not included in 2015 because St. Croix and Mississippi Rivers were infested with both zebra mussels and invasive carp. We did not want cast nets to be moved between infested and non-infested waters. The Minnesota River was designated as infested with invasive carp species and zebra mussels in 2017. The DNR proposes adding the Minnesota River downstream of Granite Falls to the list of waters where cast nets can be permitted for use at this time.
4. Cast nets sometimes tear during use. Stakeholders have requested permitting of a backup cast net. The DNR proposes permitting up to two cast nets per angler so they will have a backup if one is damaged or they choose to have one dedicated to a certain river.

84D.03 INFESTED WATERS; RESTRICTED ACTIVITIES.

Subd. 3. Bait harvest from infested waters.

(d) In the Minnesota River downstream of Granite Falls, the Mississippi River downstream of St. Anthony Falls and the St. Croix River downstream of the dam at Taylors Falls, including portions described as Minnesota-Wisconsin boundary waters in Minnesota Rules, part 6266.0500, subpart 1, items A and B, the harvest of gizzard shad by cast net for noncommercial personal use as bait for angling, as provided in a permit issued under section 84D.11, is allowed as follows:

(1) nontarget species must immediately be returned to the water;

(2) gizzard shad taken under this paragraph must be used on the same body of water where caught and while still on that water body. Where the river is divided by barriers such as dams, the gizzard shad must be caught and used on the same section of the river;

(3) gizzard shad taken under this paragraph may not be transported off the water body; and

(4) gizzard shad harvested under this paragraph may only be used in accordance with this section.

~~This paragraph expires December 1, 2017.~~

(e) Equipment authorized for minnow harvest in a listed infested water by permit issued under paragraph (b) may not be transported to, or used in, any waters other than waters specified in the permit.

97C.345 RESTRICTIONS ON USE AND POSSESSION OF NETS AND SPEARS.

Subd. 3a. **Cast nets for gizzard shad.** (a) Cast nets may be used only to take gizzard shad for use as bait for angling:

(1) from July 1 to November 30; and

(2) from the Minnesota River downstream of Granite Falls, Mississippi River downstream of St. Anthony Falls and the St. Croix River downstream of the dam at Taylors Falls, including portions described as Minnesota-Wisconsin boundary waters in Minnesota Rules, part 6266.0500, subpart 1, items A and B, that are listed as infested waters as allowed under section 84D.03, subdivision 3.

(b) Cast nets used under this subdivision must be monofilament and may not exceed ~~seven~~ five feet in ~~diameter~~ radius, and mesh size must be from three-eighths to five-eighths inch bar measure. Limit of up to two cast nets may be permitted at one time.

~~(c) This subdivision expires December 1, 2017. The commissioner must report to the chairs and ranking minority members of the house of representatives and senate committees with jurisdiction over environment and natural resources by March 1, 2018, on the number of permits issued, conservation impacts from the use of cast nets, and recommendations for any necessary changes in statutes or rules.~~