ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
AMENDING AND CREATING RULES

The statement of scope for this rule, SS 053-16, was approved by the Governor on June 3, 2016, published in Register No. 726A1 on June 6, 2016, and approved by the Natural Resources Board on June 22, 2016.

The Wisconsin Natural Resources Board proposes an order to amend NR 25.08 (intro.) and to create NR 25.06 (1) (c), 25.07 (1) (b), and 25.13 (1) (d), Wis. Adm. Code, relating to cisco (lake herring) harvest in Lake Superior and affecting small business.

FH-13-16

Analysis Prepared by the Department of Natural Resources

1. Statute Interpreted: Sections 29.014(1), 29.041 and 29.519(1m)(b), Stats.

2. Statutory Authority: Sections 29.014(1), 29.041 and 29.519(1m)(b), Stats.

3. Explanation of Agency Authority:
Section 29.014 (1), Stats., directs the department to establish and maintain conditions governing the taking of fish that will conserve the fish supply and ensure the citizens of this state continued opportunities for good fishing.

Section 29.041, Stats., provides that the department may regulate fishing on and in all interstate boundary waters and outlying waters.

Section 29.519 (1m) (b) and (5), Stats., authorizes the department to limit the number of Great Lakes commercial fishing licenses; designate the areas in the outlying waters under the jurisdiction of this state where commercial fishing operations are restricted; establish species harvest limits; designate the kind, size, and amount of gear to be used in the harvest; and require fishing records be submitted to the department.

4. Related Statutes or Rules: Section 29.973, Stats., Commercial fish reporting system.
A similar emergency rule, FH-12-16(E), was enacted prior to this rule.

5. Plain Language Analysis:
Cisco are a key species in the Lake Superior ecosystem and are harvested in Wisconsin waters for commercial, recreational, and subsistence purposes by state licensees and members of the Red Cliff and Bad River Bands of Lake Superior Chippewa Indians. This rule is needed to manage the long-term sustainability of the cisco population. Currently the commercial harvest season is open year-round and there is no size limit or harvest quota in place for cisco. The recreational angling season is open year round in Lake Superior with a 10-fish daily bag limit per person and no size limit. Only a few hundred cisco are harvested by recreational anglers each year.

Maintaining a healthy cisco population is important for several reasons:

- Cisco are an important species for both recreational and commercial harvest. Cisco contribute to the local economy through the tourism and commercial fishing industries.
- Cisco are an important food chain link between trophic levels. They link the lower (zooplankton) to the upper (lake trout) trophic levels. Cisco are an important forage food for lake trout, a popular species which is seeing a decline.

- A decline in cisco could have negative consequences on whitefish and other near-shore fish, because the eggs of cisco are an important part of other species' diets.
- Cisco reproduction is variable, with populations relying on strong year classes (fish born in the same year) to sustain them. This unpredictable year to year recruitment into the population can make cisco vulnerable to overfishing.
- The linkage between Wisconsin's waters and those of other states and jurisdictions are not totally understood. It is possible that harvest in Wisconsin waters affects populations elsewhere in Lake Superior.

SECTION 1 establishes that the total allowable annual harvest of cisco by state fishers in Wisconsin waters of Lake Superior will not exceed 7.5 percent of the most recent estimate of the biomass of cisco in Lake Superior. The department conducts hydroacoustics surveys to determine the biomass estimate, and harvesting up to 7.5 percent of the total cisco biomass each year is expected to be a sustainable level for the cisco population.

SECTION 1 also states that the total allowable state harvest in the waters of Lake Superior may not exceed 1,497,900 round weight pounds in a calendar year. State commercial fishers must limit their total targeted harvest of cisco using gill nets from October 1 through December 31 to 1,317,900 round weight pounds. Throughout the year, state licensed commercial fishers, recreational fishers, and department assessment surveys may harvest up to an additional 180,000 round weight pounds. The department shall subdivide the 180,000 pounds among the user groups.

SECTION 2 establishes that the total allowable annual cisco commercial harvest quota shall be split equally among each of the 10 state commercial fishing licenses in Lake Superior as individual licensee catch quotas.

SECTION 3 states that license holders may transfer individual licensee catch quotas for cisco to another license holder, an existing process for other commercial species.

SECTION 4 applies additional phone reporting requirements for harvest of cisco. From October 1 through December 31, commercial licensees who have harvested 70 percent or more of their individual licensee catch quotas for cisco must submit a daily fishing report to the department. Daily fishing reports shall be submitted by calling a phone number provided by the department.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations:
The department is not aware of any existing or proposed federal regulation that would govern fishing in Wisconsin's waters of Lake Superior.

7. Comparison with Similar Rules in Adjacent States:
Minnesota and Ontario establish a cisco harvest quota similar to this proposed rule. Michigan waters, under the Chippewa Ottawa Resource Authority, have a closed season and other Michigan waters have a limitation on the effort allowed, or the length of net and gear used to catch cisco.

8. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen:
Cisco have been harvested commercially in Wisconsin waters of Lake Superior for decades. After a population decline in the 1960's, a commercial fishery slowly grew over the next 30 years. Average annual state-licensed and tribal commercial harvest between 2000 and 2007 was approximately 360,000 pounds of cisco. However, since 2008 the commercial harvest of cisco increased dramatically because commercial fish processors began accepting whole fish and the market demand for cisco eggs, sold as caviar in Europe, skyrocketed. Average annual combined state and tribal harvest from 2008 through 2015

was approximately 1.4 million pounds. For state-licensed commercial fishers alone, the average annual catch was 878,343 pounds of cisco.

Average Annual Harvest (Round Weight; State-licensed and tribal commercial harvest combined):

- 2000 – 2007: 359,341 lbs.
- 2008 – 2015: 1,376,520 lbs.

Actual Annual Harvest (Round Weight; State-licensed and tribal commercial harvest combined):

- 2014: 1,107,923 lbs.
- 2015: 1,552,169 lbs.

Based on the U.S. Geological Survey (USGS) annual bottom trawl survey, cisco numbers have declined in Lake Superior since 1990 (Figure 1). Similar declines have also been seen from repeated hydroacoustics sampling in Wisconsin waters since 2006 (Figure 2). By using data from both catching and counting fish in trawl surveys and using sonar technology to detect the presence and abundance of fish in hydroacoustics surveys, the department can determine a reliable assessment of the cisco population. These cisco population declines are due to sporadic recruitment of cisco (recruitment means reaching a certain size or reproductive stage), and there has not been a strong, above average year class or group of cisco since 2003 (Figure 3). The current commercial catch primarily consists of fish from the 1998, 2003, and 2009 year classes. In 2014 surveys, 81% of the aged harvested fish were from these three year classes. However, the 1998 and 2003 year classes are contributing less to the fishery (62% of the commercial catch in 2011 and only 38% in 2014). The 2014 year class does appear to be equivalent to the 2009 year class, which should allow for sustained harvest. However, the sporadic nature of cisco recruitment and the potential for commercial markets to increase - as was seen in 2008 - necessitate the need for the establishment of a total allowable harvest limit. In addition, the importance of cisco to the ecosystem and to the commercial industry requires the ability to frequently review management and harvest to avoid changes that may cause further declines.

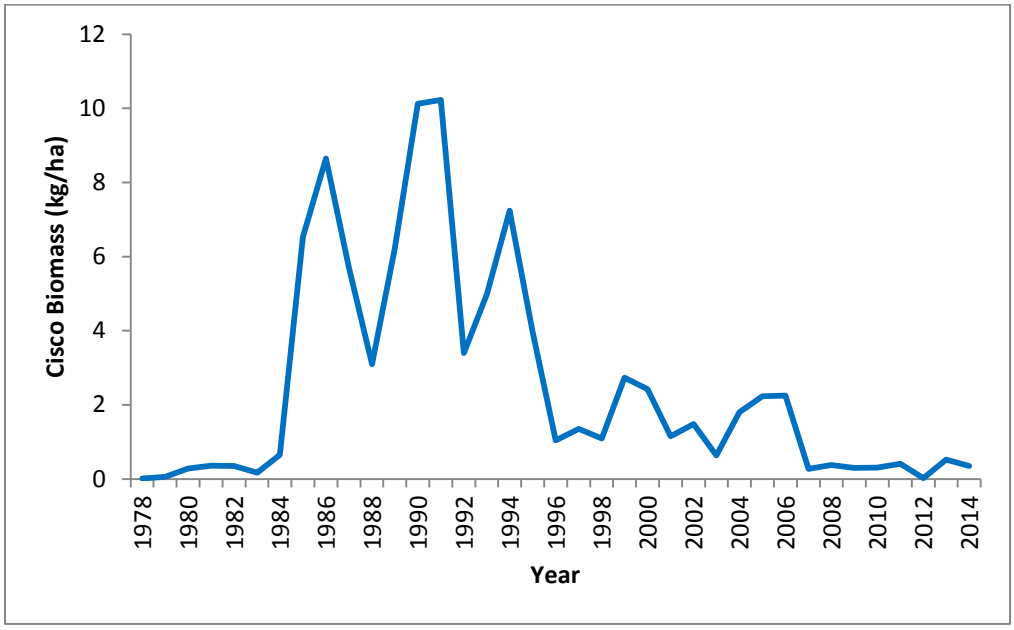

Figure 1. U.S. Geological Survey spring bottom trawl estimated mean lake-wide biomass for age-1 and older cisco in Lake Superior (Source: 2015 USGS Compiled reports to the Great Lakes Fishery Commission of the Annual Bottom Trawl and Acoustics Surveys, 2015).

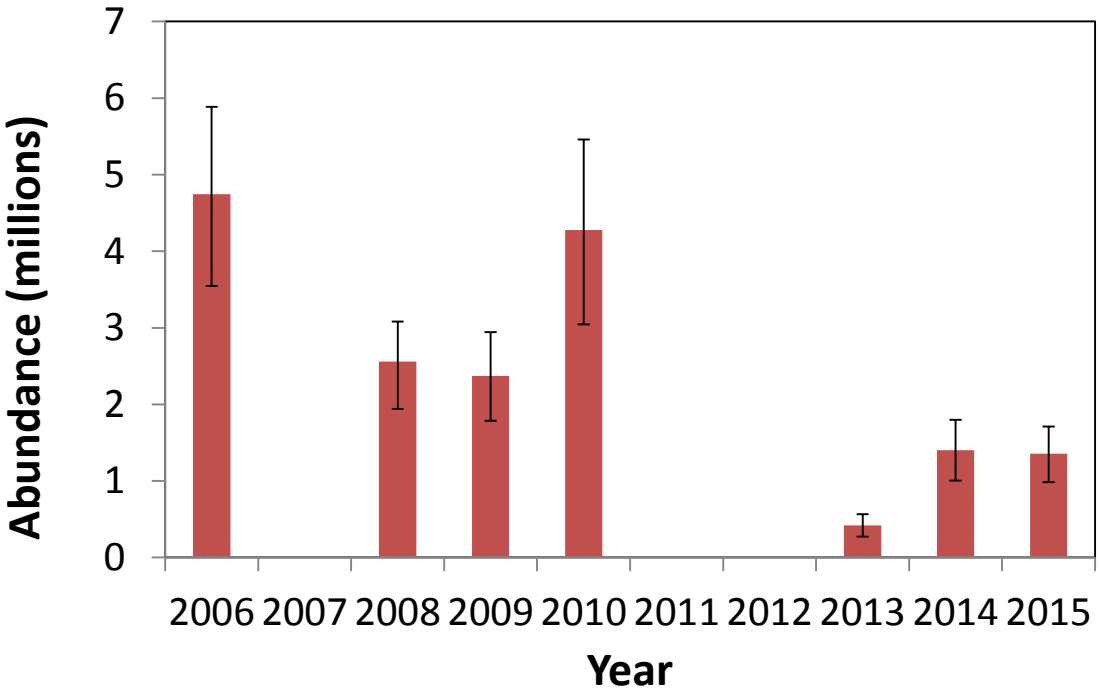

Figure 2. Estimated biomass of adult (> 10 inches) female cisco in Wisconsin waters in the area between Bark Point and Sand Island from hydroacoustics estimates conducted by the USGS and WDNR boats.

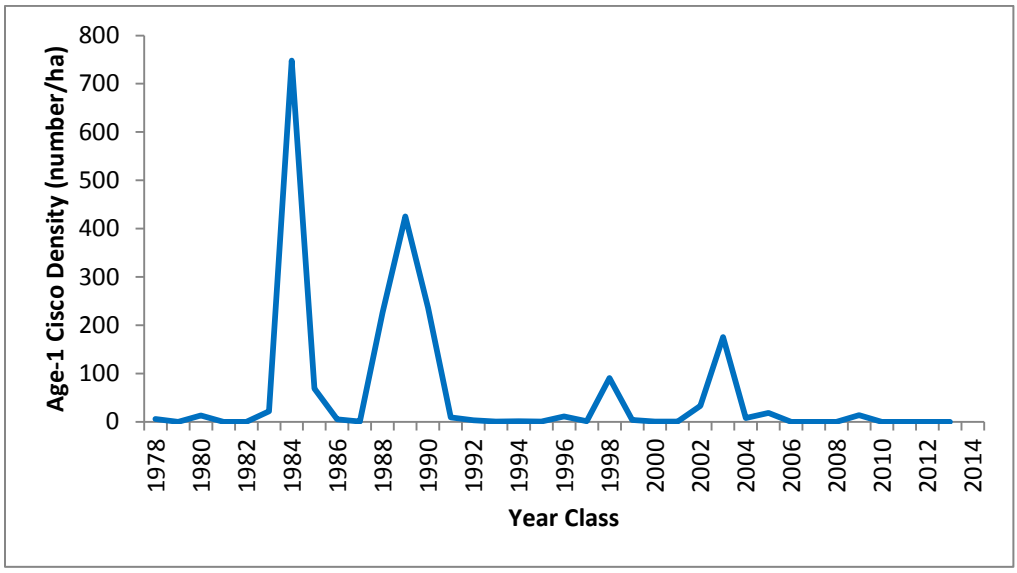

Figure 3. U.S. Geological Survey spring bottom trawl estimated nearshore mean lake-wide cisco densities for age-1 in Lake Superior. (Source: 2015 USGS Compiled reports to the Great Lakes Fishery Commission of the Annual Bottom Trawl and Acoustics Surveys, 2015)

Between 1990 and 2005, Wisconsin's cisco harvest (combined state and tribal) comprised roughly one third of the total Lake Superior cisco harvest across all jurisdictions. More recently, Wisconsin's cisco harvest has risen to approximately two-thirds of the total Lake Superior harvest. Nearly 95% of the harvest in Wisconsin occurs during the cisco spawning season of October through December. Additionally, the majority (approximately 90%) of the harvest occurs in the areas sampled in 2015 with hydroacoustics to develop biomass estimates. The Apostle Island area provides appropriate spawning habitat for numerous fish species and has higher densities of cisco during the spawning season than other areas of Lake Superior. The department is concerned that an increase in harvest on this spawning population of cisco could have ramifications on the lake-wide cisco population and is evaluating overall management options. Members of the Great Lakes Fishery Commission Lake Superior Committee, neighboring states, and sport fishing groups have also expressed concern about the impact of current unregulated cisco harvest in Wisconsin waters.

Currently in Lake Superior, lake trout are the only commercially harvested species that have a harvest limit/quota in place. Because the total and percentage of lake-wide harvest of cisco has increased in recent years, it is necessary to implement rule elements that distribute harvest fairly among stakeholders within Wisconsin and with other states. Alternatively, cisco are vulnerable to overfishing if no harvest restriction is implemented, which could result in population declines for cisco and other popular fish species and negative consequences for small commercial fishing and charter businesses.

9. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report:

This rule imposing harvest revisions is necessary in order to ensure a sustainable cisco fishery over the long-term, an economic and natural resource benefit for all. The rule may have a small economic impact in the Lake Superior region, however the newly created harvest quota is set at a level above the average commercial harvest over the past several years.

The department met with the Lake Superior Commercial Fishing Board on three occasions in spring and summer 2016 to discuss the potential rule. Productive dialogue led to the proposed strategy. This strategy was also shared with the general public at two meetings in June 2016. Consensus at these meetings was the need for precautionary management that sustains cisco populations and commercial profits for the long-term benefit of Lake Superior.

10. Effect on Small Business - Initial Regulatory Flexibility Analysis:

The rule will impact the harvest of cisco by state fishers, but initially would result in no reduction of overall harvest. The rules imposing harvest restrictions are necessary in order to ensure a sustainable cisco fishery over the long-term that provides an economic and natural resource benefit for all affected. *The department will conduct an economic impact analysis to gather comments from any individuals, businesses, local governments, or other entities that expect to be affected economically by the rule change.*

Average state-licensed commercial fishers' annual catch between 2008 and 2015 was 878,343 pounds of cisco. In 2015, the cisco price per pound was $0.40-0.65, but has been as high as $1.20 per pound since 2012. While the price per pound has varied over time, estimated total value of the commercial cisco roe (egg) fishery is between $500,000 and $1,000,000 per year. This rule's harvest limits are expected to allow commercial fishers to harvest at or near the current average annual catch amount. Therefore, the rules may have minimal economic impact on commercial fishing businesses. Market demand, fuel, and other variable expenditures would have a greater economic impact than this rule. However, this rule and an upcoming permanent rule are important to have in place because they will allow the department to reduce or increase the harvest limit based on assessment data and recommended harvest parameters.

Harvest reporting requirements included in this rule will enhance the information collected by the department to properly monitor the commercial harvest of cisco and ensure that harvest limits are not exceeded. In addition to current bimonthly reporting requirements, additional daily phone reporting is required during the October to December cisco spawning season after 70% of the individual licensee quota allotment is reached. The combination of bimonthly reports and daily phone reports will allow for tracking of overall and individual allotments of the harvest limits with up to date records during the time of year with the majority of harvest.

Minimal to no impact is expected for recreational fishers or for businesses or business associations that do not rely on harvest of cisco.

11. Agency Contact Person:
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12. Place where comments are to be submitted and deadline for submission:
Written comments may be submitted at the public hearings, by regular mail, fax, or email to the contact noted above. Hearing dates and the comment submission deadline is yet to be determined. Written comments may also be submitted to the department using the Wisconsin Administrative Rules website at http://adminrules.wisconsin.gov.

SECTION 1. NR 25.06 (1)(c) is created to read:

NR 25.06 Quotas and catch fees. (1) LAKE SUPERIOR. (c) *Lake herring (Cisco).* The total allowable annual harvest of cisco by state fishers during the open season in Wisconsin waters of Lake Superior shall not exceed 7.5 percent of the total of the most recent hydroacoustics cisco biomass estimate, expressed in round weight pounds of cisco, as determined by the department.

1. The total allowable state harvest in the waters of Lake Superior may not exceed 1,497,900 round weight pounds in a calendar year.

2. From October 1 through December 31 of each year, the total harvest of cisco by state licensed commercial fishers using gill nets with a mesh size of not less than 2 3/8 inch and not more than 3 inch stretch measure may not exceed 1,317,900 round weight pounds.

3. Excluding harvest under subd. 2, from January 1 through December 31 of each year, the total harvest of cisco by state fishers and the department shall not exceed 180,000 round weight pounds. The department shall subdivide the allocation of 180,000 round weight pounds among commercial incidental catch, recreational angling, and department assessment activities.

SECTION 2. NR 25.07 (1) (b) is created to read:

NR 25.07 Individual licensee catch quotas. (1) LAKE SUPERIOR. (b) *Lake herring (Cisco).* 1. Each state commercial license shall be allotted an equal individual licensee catch quota of the total allowable annual cisco harvest quota established under s. NR 25.06 (1) (c).

SECTION 3. NR 25.08 (intro.) is amended to read:

NR 25.08 Transfer of individual licensee catch quotas. Individual licensee catch quotas allotted under s. NR 25.07 (1) (a), (b) or (2) (am) 1., (b), (bg), (br), (c), (d), (e) or (f) may be transferred by the licensee receiving the quota allocation to another valid licensee authorized to engage in commercial fishing in the waters to which the quota applies, who meets all criteria for receiving such a quota other than previous fishing history, subject to the conditions stated in this section.

SECTION 4. NR 25.13 (1) (d) is created to read:

NR 25.13 (1) (d) In addition to reporting requirements under this subsection, each person required to be licensed under s. 29.519 (1m), Stats., to conduct commercial fishing operations on Lake Superior and who has received an individual licensee catch quota under s. NR 25.07 (1) (b) for the harvest of lake herring (cisco) shall submit a daily fishing report to the department from October 1 to December 31 after 70 percent of the individual licensee catch quota has been reached that includes all records of pounds of lake herring harvest, harvest effort, and all other information called for on the report form. Daily fishing reports shall be submitted by calling a phone number provided by the department.

SECTION 5. EFFECTIVE DATE. This rule shall take effect upon publication in the official state newspaper, as provided in s. 227.24(1)(d), Stats.

SECTION 6. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on _____.

Dated at Madison, Wisconsin _____.

STATE OF Wisconsin DNR

DEPARTMENT OF NATURAL RESOURCES

BY _____

Cathy Stepp, Secretary

(SEAL)