

Photo credit: Norwegian Seafood Export Council.

**Brief Species Description:**

*Brosme* is a monotypic genus (i.e., cusk is the only species to occur worldwide in this genus) (COSEWIC 2003). Cusk attain lengths up to 3 feet (90 cm) and weights up to 20 pounds (9 kg). They are physically defined by a single chin [barbel](#) and only one dorsal fin (COSEWIC 2003). The species' upper body ranges from a light grey with hints of brown to a dull reddish brown that transitions into a dirty white belly (Collette and Klein- MacPhee 2002).

**KEY INFORMATION**

**Area of Concern**  
Gulf of Maine

**Year Identified as "Species of Concern"**  
2004

**Factors for Decline**

- Commercial fishing
- Bycatch

**Conservation Designations**  
IUCN: Not Evaluated  
American Fisheries Society: Not Evaluated

Cusk from the Scotian Shelf off Nova Scotia, Canada are relatively slow growing and late maturing. Depending on location, 50 percent of adults mature at approximately 50 cm (5 to 6 years). The maximum age of this species is believed to be greater than 14 years, and sexual maturity is reached by age five (males) and seven (females). Little information is known about Gulf of Maine cusk, including [stock](#) structure.

There are regional variations in this species' diet. Throughout their range however, their diet broadly consists of various species of crustaceans, fishes, and echinoderms (Collette and Klein-MacPhee 2002). They are a deep water species found in rocky, hard bottom areas and reside in temperatures from 33 to 50°F (1-10°C) in the Gulf of Maine (COSEWIC 2003). They spawn in spring and early summer. Eggs initially rise to the surface where hatching and larval development take

place. Juveniles move to the bottom at 2 inches (5 cm) in length and become sedentary and solitary (Collette and Klein-MacPhee 2002). Cusk have also been found to be distributed primarily in deeper waters in the central portion of the Gulf of Maine (Sosebee and Cadrin 2006).

**Rationale for "Species of Concern" Listing:**

**Demographic and Genetic Diversity Concerns:**

Northeast Fisheries Science Center (NEFSC) autumn bottom trawl survey biomass index has fluctuated considerably (Figure 1), but a declining trend has been evident since the late 1960s with all indices remaining at or close to record-low levels from 1985 through 2002 (Sosebee and Cadrin 2006). The 1998 biomass index is near zero and is the record low. Very few fish were caught in 1993-1997 and 1998-2002 (Sosebee and Cadrin 2006). The declining trend is also apparent in the distribution maps. Mean length has also declined from 24 inches (62 cm) during 1964 to 1987 to 19 inches (50 cm) during the period of 1988 to 1998. In the early 1970s, individual fish weight averaged 3 kg (7 lbs) but was reduced by 50% to 1.5 kg (3 lbs) in the late 1990s. Landings and survey indices have dropped considerably from 1984 to 2004 (NMFS 2000). The ratio of landings to survey biomass



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estimates has been increasing since 1986, which implies increased exploitation over that time period.

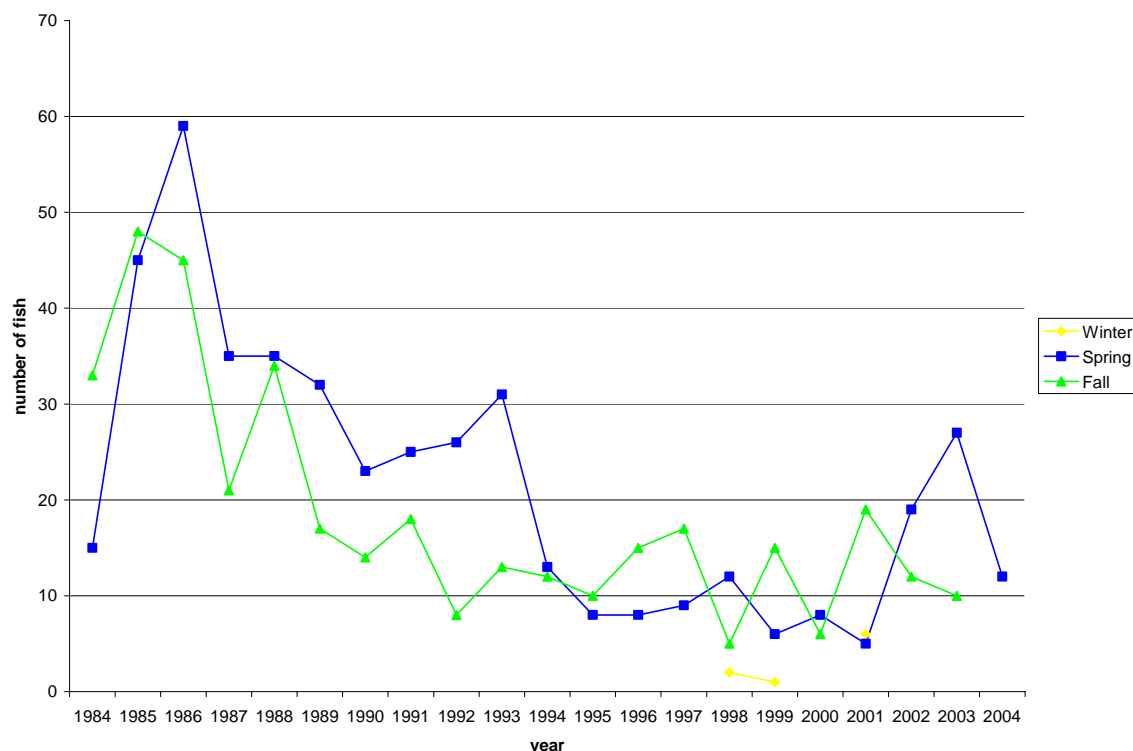


Figure 1. NEFSC trawl survey data 1984-2004.

The [catch per unit effort](#) (CPUE) from 1970-2001 (3.5 cusk generations) declined by 93.4%, while population estimates for fish greater than 50 cm (20 inches) demonstrated a 95.5% decline in the same time frame (COSEWIC 2003). Furthermore, according to COSEWIC (2003), cusk are caught in a smaller area on the Scotian shelf each year than they used to be. The slow growth and late maturation of this species is also a concern.

### ***Factors for Decline:***

Commercial fishing is the prime factor for the decline in numbers. Principal gears used to catch cusk are line trawl, otter trawl, gill net, and longline. *Brosme* is often taken as [bycatch](#) on longlines directed at Atlantic halibut, cod, haddock and pollock (COSEWIC 2003). Recreational fishing is insignificant and foreign catches are minor. Cusk landings were relatively stable at 1700 mt per year in the 1960s and early 1970s. Landings increased to 2363 mt in the late 1970s to mid 1980s, fluctuated in the late 1980s and early 1990s between 1500 and 2400 mt, and then declined to less than 500 mt in 1998 (Figure 2). The 1998 U.S. landings were 354 mt and accounted for 72% of the total harvest. Canadian landings in 1998 were 140 mt. Total U.S. landings in 2004 were down to 78.6 mt.



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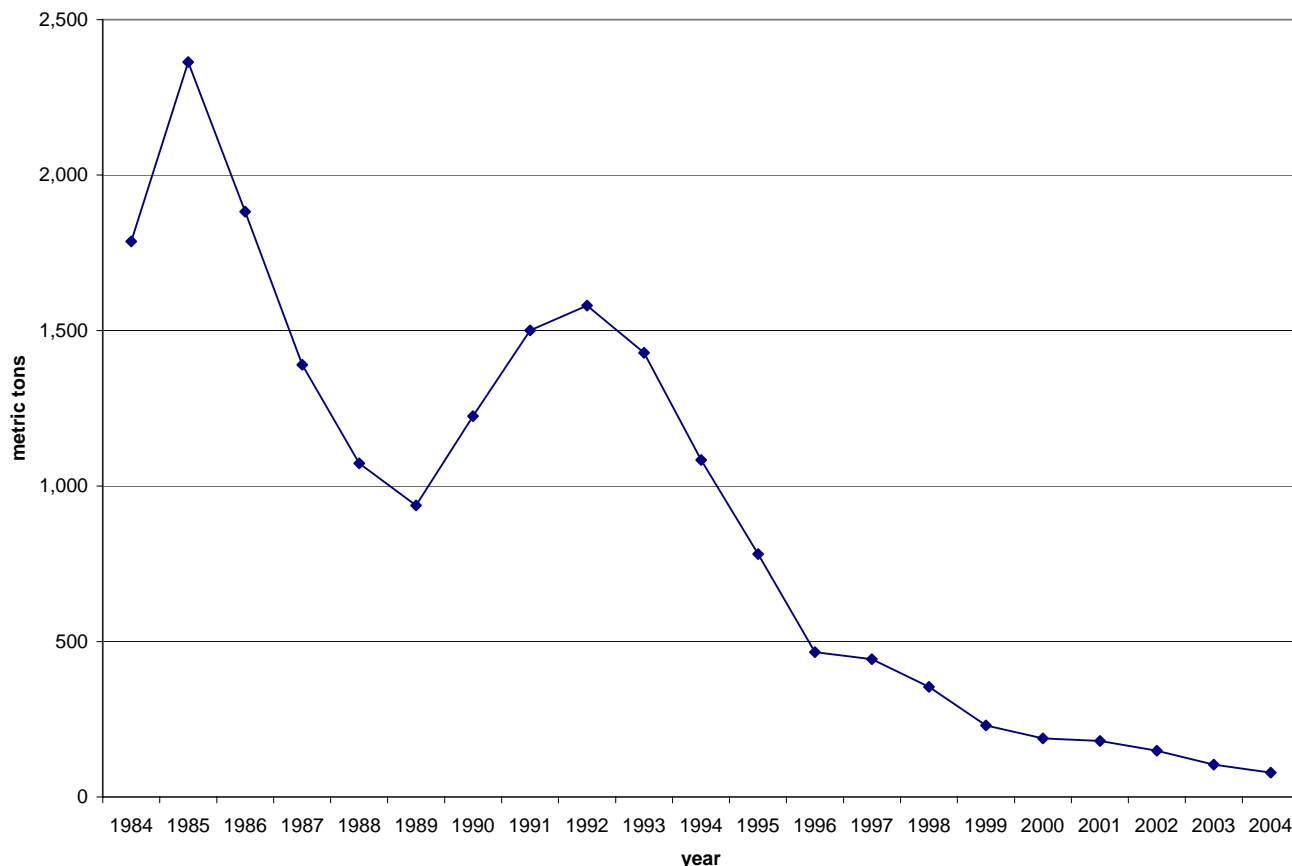


Figure 2. Commercial landings 1984-2004. NEFSC.

### Status Reviews/Research Underway:

A status review under the Endangered Species Act was initiated for this species by NMFS in February 2007 (72 FR 10710). This review is expected to be completed by the end of the year.

### Data Deficiencies:

General information on life history characteristics including nursery areas for juveniles and spawning areas for adults is lacking. Also, there is currently no information on the stock structure of cusk. Additional information on habitat requirements for this species and estimates of the amount of available suitable habitat are also needed.

### Existing Protections and Conservation Actions:

Fishing was unrestricted in Canada until 1999 when limitations were established for landings in the Scotia-Fundy region, yet it still continues to be a source of mortality. This is a transboundary stock, and as such, conservation measures are needed both in the U.S. and Canada.

### Video

on a wreck in the Canary Islands (3:09) <http://www.youtube.com/watch?v=CN4c1HOYqZY>



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### References:

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2003. Assessment and Status Report on the Cusk (*Brosme brosme*) in Canada. May 2003.

Collette, B.B. and G. Klein-MacPhee. 2002. Fishes of the Gulf of Maine. Smithsonian Institution Press. Washington and London. 748 p.

Northeast Fisheries Science Center (NEFSC). 2000. Status of Fisheries Resources off Northeastern United States - Cusk. January 2000. <http://www.nefsc.nmfs.gov/sos/spsyn/og/cusk/>.

Sosebee, Katherine A. and Steven X. Cadrin. 2006. A historical perspective on the abundance and biomass of Northeast demersal complex stocks from NMFS and Massachusetts Inshore Bottom Trawl Surveys, 1963-2002. Northeast Fisheries Science Center Reference Document 06-05.

### Point(s) of contact for questions or further information:

For further information on this Species of Concern, or on the Species of Concern Program in general, please contact NMFS, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910, (301) 713-1401, [soc.list@noaa.gov](mailto:soc.list@noaa.gov); <http://www.nmfs.noaa.gov/pr/species/concern/>, or Kimberly Damon-Randall, NMFS, Northeast Region, One Blackburn Drive, Gloucester, MA 01930-2295, (978) 281-9328, x6535, [Kimberly.Damon-Randall@noaa.gov](mailto:Kimberly.Damon-Randall@noaa.gov).