ATLANTIC COD: NEW ENGLAND

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STRICTLY MANAGED LARGE INCREASES IN BIOMASS STOCKS REBUILDING

Atlantic cod (*Gadus morhua*) is not one stock, but consists of at least 18 major stocks that are separately managed many with distinct subpopulations that have wide geographic distribution across the North Atlantic extending from New England, the Canadian Maritime Provinces and Newfoundland; Greenland; Iceland; North Sea; Baltic Sea; Norway; Barents Sea; and the Arctic Ocean up to Spitsbergen.

Atlantic Cod Distribution

NEW ENGLAND COD

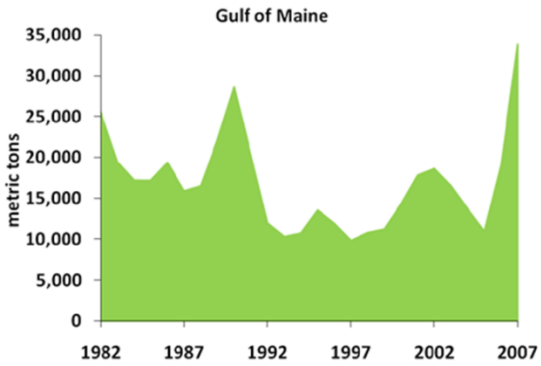
New England cod consists of two separate stocks: the Georges Banks and Gulf of Maine. The stocks are neither endangered nor threatened, but strictly managed and are rebuilding. Gulf of Maine cod is no longer overfished. The 2009 landings of Atlantic cod were up 3% from 2008, reaching 19.7 million pounds with a value of $25.2 million.

MANAGEMENT

The Gulf of Maine and Georges Bank stocks are managed under the New England Fishery Management Council's Northeast Multispecies Fishery Management Plan (FMP). New measures were recently put in place to end overfishing and continue to rebuild Northeast groundfish stocks (and maintain healthy ones). These new requirements set a limit on the amount of all groundfish that can be caught by establishing total allowable catch levels (TACs), as well as measures to mitigate if the catch limits are exceeded. These measures also fundamentally change how the fishery is managed – fishing vessels may now fish together in groups, or sectors which are allotted a portion of the total available groundfish catch, based on the combined fishing history of sector member vessels. They are exempt from many gear and area restrictions but must stop fishing once the sector catches their allotment of fish; this allows fishermen more control over where and how they fish and the ability to target healthier stocks over overfished stocks. Fishermen who choose to not join a sector will fish under the existing system of regulations, with limits on the number of days they can fish, amount they can catch, and when and where they can fish.

STATUS

Both the Georges Bank and Gulf of Maine stock are rebuilding spawning stock biomass (the amount of Atlantic cod in the population capable of reproducing) to target levels. According to the most recent scientific stock assessment, there have been large relative increases in biomass for Gulf of Maine cod while biomass for Georges Bank cod has not changed much since the last assessment in 2004. In the Gulf of Maine,



Biomass Trends Gulf of Maine Cod

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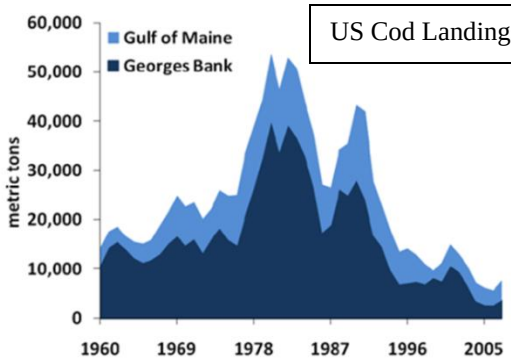
spawning stock biomass increased from 10, 974 metric tons in 2005 to 33,877 metric tons in 2007. Although this stock remains low relative to the target level, the current spawning stock biomass is over half of the target level (58%) and is therefore no longer considered overfished. The Georges Bank stock is at 10% of its target level and thus still classified as overfished.

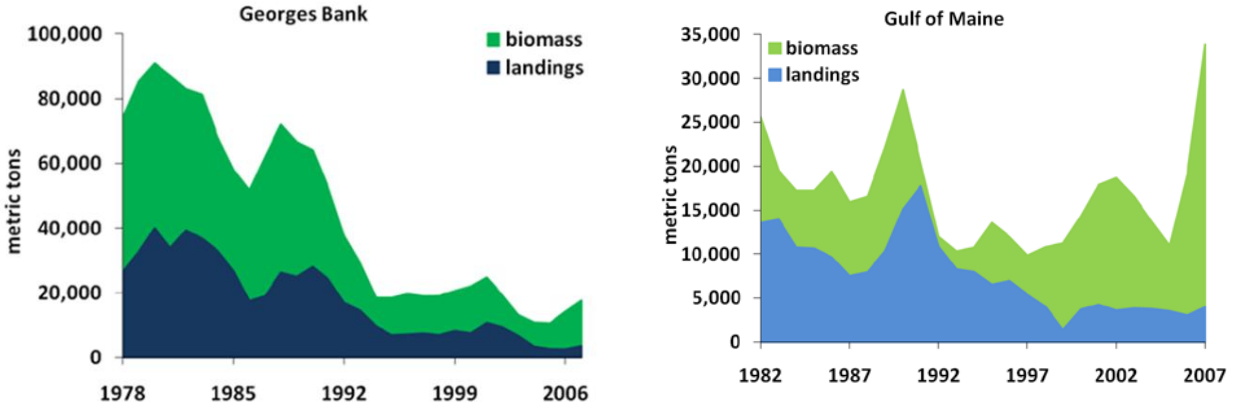
US Cod Landings



Landings refer to the amount of catch that is brought to land and are controlled by management measures that have lowered the landings to reduce fishing mortality and promote stock growth. Landings are not an absolute reference on the status of a stock, they indicate catch of permitted harvest levels.

Biomass and Landings

Biomass and landings data can sometimes be used to detect trends in a fishery. They may influence each other, and factors such as changes in management measures, fishing effort, market preferences, or environmental conditions may impact landings and biomass as well. The graphs illustrate that biomass is increasing while landings are keep low by regulation.



Biomass increasing in both stocks with faster growth in Gulf of Maine. Landings kept low with fishery restrictions providing sustained harvest for local fisheries, while still allowing for continued stock growth.

ECOSYSTEM

U.S. fishermen use otter trawls, gillnets, and longlines to harvest Atlantic cod. Otter trawls may impact habitat, depending on where they are used. Gillnets and longlines have very little or no impact on habitat. Recent research has indicated a relationship between climate change and the decline of bottom species like cod. In an *ICES Journal of Marine Science* article called "The response of Atlantic cod (*Gadus morhua*) to future climate change", researcher Kenneth Drinkwater links expected increases in ocean temperature to the decline of Georges Bank cod stocks, based on observed responses of cod to temperature variability. However, the responses of cod to future climate change are highly uncertain as they depend on changes to other variables besides temperature, like plankton production, prey and predators and fishing.

Source: NOAA Fish Watch (www.nmfs.noaa.gov/fishwatch); www.ices.dk; www.dfo.ca.