



## NOAA FISHERIES SERVICE

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NOAA

## Groundfish Management and the Science Behind it

### Where do we go from here?

In the months ahead, NOAA’s Fisheries Service and the New England Fishery Management Council, in order to address mandates of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), will have to meet two challenges – (1) end overfishing and put the overfished stocks on a path to rebuilding and (2) implement annual catch limits and accountability measures.

In 2004, Amendment 13 instituted changes in the Northeast multispecies fishery aimed at meeting the requirements of the Magnuson-Stevens Act to prevent overfishing and rebuild overfished stocks. Amendment 13 sharply reduced effort on many of these stocks, which generated much controversy.

It is important to recognize that the planned fishing mortality reductions adopted were the minimum thought to be necessary at the time for many of the stocks, with only a 50 percent probability of success. While these effort reductions substantially decreased fishing mortality for several stocks, it was anticipated that further effort reductions would occur for the 2009 fishing year in order to end overfishing on all stocks.

The recently completed stock assessments for 19 groundfish stocks provide a comprehensive mid-point status review of rebuilding progress since implementation of the Amendment 13 measures in 2004. While there have been large reductions in fishing mortality, overfishing is occurring in 13 stocks, 5 of which are new stocks. The assessments also document a decline in productivity and average weight at age for several species indicating slower-than-average growth for these stocks.

### Some Good News

Some stocks that were the focus of concern when Amendment 13 was developed have experienced major recoveries. For instance, Georges Bank haddock has exceeded its rebuilding target, Gulf of Maine haddock is nearly rebuilt and Gulf of Maine cod is expected to be rebuilt within the next two years. We have also seen major proportional increases in two yellowtail flounder stocks and southern windowpane flounder.

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## Groundfish Management continued from page 1

Given that the assessment results are mixed and the implications for management and ultimately fishing communities, it is not surprising that some have questioned the science. The 2008 groundfish assessments represent the work of more than 70 scientists, examined in a fully documented, open and public process during four week-long meetings over a year's time. Each meeting's results were peer-reviewed, drawing on the services of 22 scientists unaffiliated with the Northeast Fisheries Science Center, many from outside the U.S. The assessments comprise hundreds of thousands of observations, records, and measurements from 13 different sources, including the fishery. We firmly believe that this process was exceptionally rigorous, and that the results are entirely consistent with our obligations under national standard 2 in §301(a)(2) of the Magnuson-Stevens Act, which mandates that management measures be "based upon the best scientific information available."

### So how do we use this new information to guide management in the future?

We realize that the existing management strategy of relying primarily on effort controls has had mixed success and has not entirely achieved the desired results. NOAA's Fisheries Service and the Council now face a situation in which further actions are required to meet the tougher provisions of the Magnuson-Stevens Act. The agency will support a variety of conservation and management measures provided that they demonstrate a sufficient probability of meeting the fundamental Magnuson-



Deploying trawl gear on research cruise. Photo credit: Tobey Curtis

Stevens Act mandates with respect to overfishing, overfished stocks and annual catch limits and accountability measures. Examples include further development of sector management proposals under Amendment 16.

Even though we recognize that fishing is not the only factor that affects fish stocks, it is clear that additional reductions in fishing mortality for some groundfish stocks will be unavoidable. While the Administration has not made final decisions on any policy or initiative to provide specific forms of relief, NOAA's Fisheries Service will do all that it can under existing authorities and budget constraints to minimize the negative economic impacts on fishermen and fishing communities.

At its September meeting, the Council asked the Secretary to take interim action while it continues to develop

Amendment 16 because it recognized that the default measures, alone, would not meet the current plan's requirement that 2009 measures eliminate overfishing and rebuild stocks on schedule—by 2014 for most of the stocks. The Council also provided recommendations for interim measures. We will certainly consider those council recommendations in any future actions we may take.

Ultimately, immediate and future actions through the development of Amendment 16 must ensure that we end overfishing and continue rebuilding stocks to sustainable levels that support viable fisheries.

At present, we are harvesting about one-third of the groundfish that such a sustainable fishery would yield. We need to do more to maximize this potential benefit for fishing communities over the long term.



## Commerce Secretary Determines Blue Crab Disaster in Chesapeake Bay

U.S. Commerce Secretary Carlos M. Gutierrez declared a commercial fishery failure for soft shell and peeler blue crabs in the Chesapeake Bay on September 23, 2008. The declaration recognizes the importance of this fishery to the regional economy and is an important step in making fishermen and their communities eligible for economic assistance.

Blue crabs are harvested at three stages in their life cycle—as hard shell crabs, peeler crabs (just prior to molting), and soft shell crabs (immediately after the molt). Based on a steep decline in blue crab abundance, the governors of Maryland and Virginia requested that the Secretary of Commerce determine a disaster in the blue crab fishery.

NOAA's Fisheries Service analyzed relevant economic and biological information provided by the two states and gathered additional data and determined that there had been a 41 percent decline in the harvest value of soft shell and peeler blue crabs in Maryland and Virginia. This economic hardship warranted a commercial fishery failure determination under Section 312(a) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

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## Groundfish Assessment Review Meetings (GARM) Frequently Asked Questions About GARM Results

**Q.** For the most part, fishermen stayed at or below the Total Allowable Catch levels that were established by NOAA and the Council, so why are the fisheries in such bad shape?

**A.** The TACs were established based on the best science from previous assessments. Some of the conditions assumed in setting the TACs, for example, that recruitment and growth rates would be consistent with historic averages, did not occur. While it is true that catches were lower than the TACs for many species in 2007, TACs were exceeded in prior years of the rebuilding plan and where we are today is a result of the cumulative effects since the plan was implemented. We are confident that managing fisheries in accordance with the best available science and striving for continued improvement in the science and management, will lead to sustainable fisheries.



**Q.** What is the “Retrospective Pattern” and how has it been accounted for?

**A.** Retrospective patterns are consistent changes in fishing mortality or biomass that occur when the most recent years' data are added to the model. They are found in many assessments throughout the world, and not just in Northeast groundfish, where such patterns are a factor in seven stocks. The 2008 assessments incorporate retrospective effects into the estimates of

the most recent years' fishing rates and spawning stock biomass. This approach increases the likelihood that subsequent management measures will be more successful in meeting mortality and rebuilding objectives.

**Q.** How has climate change or other environmental factors been accounted for in your analysis and management measures?

**A.** We have tracked an overall slowing in the growth rates of most groundfish stocks, but the cause of this slow-down is unclear. Both decades of heavy fishing pressure and a change in prevailing environmental conditions may be at play. Data on fish growth and reproductive success of groundfish come directly from sampling and observations of the fish stocks. Changes in growth rates, maturity, and selectivity of the fishery are directly incorporated into the determination of biological reference points and the estimation of fishing mortality rates necessary to achieve rebuilding. Thus, these effects are accounted for in the assessment results even if their causes can't be identified.

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## New Lobster Rules Proposed

### Goal to Protect Adult Lobsters and Improve Data Collection

New measures are being proposed to improve data collection and better protect large lobsters which are important contributors to a healthy lobster resource. The proposed measures would also improve consistency between state and federal regulations to promote ease of enforcement and enhance management of commercial and recreational fisheries.

The new measures would require that all those with federal lobster dealer permits report all lobster purchases, that lobster over a certain size, which varies depending on the area in which they are caught, not be kept (i.e., new maximum size limits), and that there be better protection for egg-bearing female lobsters (i.e., modified and expanded v-notch requirements).

Dealer reporting data are an important complement to landings data. Together these two types of data allow NOAA to strengthen the landings database which scientists and fishery managers rely on to monitor the health of the lobster resource and effectively manage the region's most valuable commercial fishery.

If adopted, proposed maximum size restrictions for lobster would be consistent with state regulations in lobster management areas within southern New England, the Mid-Atlantic, and offshore waters. A maximum size requirement is also proposed for lobster harvested in the Outer Cape Management Area where there is currently no maximum size limit.

To better protect egg bearing females, v-notching is another lobster protection measure used by industry where most fishermen make a v-shaped notch in the tail fin of an egg-bearing lobster and then

release the lobster. The v-notch identifies this lobster as a breeder and the notch can protect it even after it releases its eggs, until molting reduces the size of the notch, deeming it legal to harvest. Under current federal rules, a lobster may be harvested if the v-notch is less than ¼ inches in depth. However, the proposed regulations would revise this v-notch definition, so that any lobster



American lobster. Photo credit: NOAA

bearing a v-notch less than 1/8 inches may be harvested. The intent of this management measure is to promote consistency with state regulations which, under the revised v-notch definition, could allow female lobster an additional molt prior to harvest. The federal rules would also extend the smaller v-notch restriction to the Outer Cape Management Area, which has the ¼ inch notch definition under current state and federal regulations.

A copy of the proposed rule and the associated draft environmental assessment may be obtained from the Northeast Regional Office web site at [www.nero.noaa.gov](http://www.nero.noaa.gov). Electronic submission of comments on the proposed rule can be made via the Federal e-Rulemaking Portal at [www.regulations.gov](http://www.regulations.gov).

#### Deadline for Comments

Comments will be accepted until 5 p.m. Eastern Standard Time on or before **November 20, 2008**.

## Atlantic Salmon News

### New Proposed Listing Decision and Critical Habitat Designation

NOAA's Fisheries Service and the U.S. Fish and Wildlife Service are proposing to redefine the endangered Gulf of Maine population designation of Atlantic salmon to include fish found in other nearby areas. The proposal would expand the endangered designation to consist of Atlantic salmon populations from the Androscoggin River to the Dennys River, including anadromous salmon inhabiting the Kennebec and Penobscot rivers, as well as hatchery fish used in the recovery effort. Currently, such hatchery populations are maintained at Green Lake and Craig Brook national fish hatcheries. Including fish from these populations, the five-year average (2002-2007) number of spawning fish is nearly 1,200. Between 2002 and 2007, there were fewer than 100 fish returning to spawn annually in GOM DPS waters. So far this year, roughly 2,000 adults from the proposed expanded endangered population have returned to spawn. This is a slight increase over recent years, but just 10 percent of the number required before spawning stocks are thought to be in good condition.

In 2000 when the GOM DPS was initially listed as endangered under the Endangered Species Act, it was defined as all naturally reproducing wild populations and those river-specific hatchery populations of Atlantic salmon having historical, river-specific characteristics found north of and including tributaries of the lower Kennebec River to, but not including, the mouth of the St. Croix River at the U.S.-Canada border. At the time the Penobscot River also was considered for inclusion, but it was determined that further genetic analysis was needed to better understand its relationship to the GOM DPS.

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## NOAA Successful in Protecting Eel Grass Habitat

NOAA's Fisheries Service is working with Hampton, Virginia city officials to discuss alternatives to a proposed dredging project to minimize risks to sensitive eel grass habitat.

The dredging project, as initially proposed, would have impacted one of the most robust and persistent eelgrass (*Zostera marina*) beds in the lower Chesapeake Bay which is designated as Essential Fish Habitat for 14 federally managed species. This area also has been designated as a habitat area of particular concern (HAPC) for red drum and summer flounder, both of which support commercial and recreational fisheries along the coast.

Initial plans were to realign navigational channels in the bay which would have affected nearly four acres of submerged aquatic vegetation, nursery and forage habitat for numerous marine animals.

In exploring other alternatives and working together with other state and federal agencies, NOAA's Fisheries Service staff were able to persuade city officials to identify alternative alignments for the navigational channels which ultimately will help to reduce impacts to submerged aquatic vegetation.



Channel Realignment Project, Hampton, Virginia. Photo credit: NOAA

## Restoration Project in Gloucester Shows Results Shellfish found at Mill Pond Mudflats

In an exciting development earlier this month, a team of NOAA's Fisheries Service and other scientists found evidence that restoration of the Mill Pond salt marsh in Gloucester, Massachusetts is working. NOAA researchers who collaborated with scientists from Salem Sound Coastwatch, Massachusetts Coastal Zone Management, Massachusetts Corporate Wetlands Restoration Partnership, and the City of Gloucester were delighted to find viable shellfish populations in the once lifeless mudflats of the Mill Pond Estuary.

The team discovered "duck" clams and clam worms, which are good indicators of ecosystem health, in the mud flats near the borders of the low marsh areas. The finding gives hope for a return of soft shell clams when the City's new tidegate project is finally completed next year.

Mill Pond was originally a tidal estuary where salty sea water mixed with fresh water. Estuaries provide critical nurseries for fish and shellfish. However, after a local grist mill fell into disuse, the tide gate was closed, depriving the area of salt water and damaging this saltwater habitat. Several years ago planning began to restore the salt marsh. Two years ago the tide gate was opened, and another will soon be installed, doubling the amount of sea water that flushes this 40 acre site. In addition to the return of the soft-shell clam, other anticipated outcomes from this salt marsh restoration project include helping to mitigate the flooding that has plagued the area during major storm events, and eliminating some of the phragmites, the large invasive reed that grows in tall stands along the edge of the marsh.



Sampling at Mill Pond. Eric Hutchins, NOAA, in boat. Photo credits: NOAA

"Public and private partners on this project are the key ingredient," observed Eric Hutchins, Gulf of Maine Habitat Restoration Coordinator. "We are pleased to support this restoration and monitoring effort and witness the continued recovery of this mudflat community."

Trained volunteers, including a few NOAA folks, conducted shellfish surveys on October 7 and 8th, 2008. Using field sampling techniques to measure the clam and sea worm populations, the volunteers collected samples from the mudflats. Monitoring is expected to continue annually for three years.

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**Q. How do the models account for bycatch? Why do you assume total mortality for all discards?**

A. Not all discarded fish die, but discard mortality is generally thought to be very high for most groundfish owing to the depth at which they live, because they have swim bladders, and because they are typically caught under conditions that prevent immediate and careful return of those still alive to the ocean. Only a handful of scientific studies of post-capture survival have been conducted by fisheries scientists. Most of these studies are conducted with recreationally caught fish rather than commercial landings. When available, such information is used in stock assessments. For example, in the GARM the SNE winter flounder and GOM winter flounder assessments assume 50% survival rate for discards.

**Q. How can you possibly rebuild all of these stocks to such high levels at the same time? Aren't you stretching the capacity of the ocean to handle all of this growth?**

A. The key to achieving significant simultaneous rebuilding on multiple stocks in other regions has been control of fishing mortality to the level needed to achieve rebuilding. In the Northeast, the fishing mortality rate for most of the groundfish stocks remains too high. That said, while sufficiently limiting fishing mortality is necessary to rebuild the stocks, environmental conditions also play a role. The effects of these conditions on fish growth and recruitment is directly considered in the assessment, and, as in GARM III, may result in revisions to biomass targets in the future.

**Q. Why did the agency schedule development of Amendment 16 so soon after the stock assessment came out?**

A. The Council included in Amendment 13 the mid-term review requirement that

there be a full benchmark assessment and review of all the fishery management plan biological reference points. In planning the mid-term review, the Council asked for assessments that included fishery and scientific data through 2007, and, as a result, the benchmark assessments could not be completed until August, 2008, when all 2007 data were available. The Council has been working on all aspects of the plan amendment through this time, and is now focusing its attention on those measures required to keep rebuilding on track.



Blue Crab. Photo credit: NOAA

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In making a determination, NOAA's Fisheries Service: 1) works with relevant state and federal agencies to compile existing landings and stock information; 2) analyzes whether a commercial fishery resource has experienced a significant decline, and if so; 3) evaluates the associated causes and whether a commercial fishery failure has occurred.

If funding is made available by Congress in response to this declaration, funds authorized under the Magnuson-Stevens Act can be used to assess the economic and social effects of the commercial fishery failure, assist affected fishing communities, and for other activities appropriate to restore the fishery or prevent a similar failure in the future.

## Sustainable Art Project

For the past five months, residents and visitors to New York City had the opportunity to see a work of "environmentally friendly" art. The Waterfalls exhibit consisted of four man-made cascades ranging in height from 90 to 120 feet rising out of New York Harbor. NOAA's Fisheries Service was involved in the project permit review to ensure that the project didn't harm regulated species or their habitat.

The Waterfalls were designed to be sensitive to the environment and include: elements to protect aquatic life, energy efficient LED lights, and energy purchased from renewable sources. The exhibit was made of common building materials, mainly scaffolding, pumps and piping. Water from the East River was collected in "intake filter pools" which were covered in mesh with holes less than 1 millimeter in diameter and secured underwater. The mesh prevented fish and aquatic life from getting into the intake pools and being injured or killed.

The Waterfalls, created by artist Olafur Eliasson for the Public Art Fund with private and corporate support, were on display through October 13. The waterfalls were located on the Brooklyn Bridge, on the Brooklyn Piers, in Lower Manhattan and on the north shore of Governors Island. As the Waterfalls are dismantled, 90% of all the building materials will be re-used in subsequent construction projects.

To view images of the waterfalls go to: [http://www.nycwaterfalls.org/#/about\\_the\\_waterfalls/Waterfall\\_Images](http://www.nycwaterfalls.org/#/about_the_waterfalls/Waterfall_Images)

## Atlantic Salmon News continued from page 4

When further information was available, the Services assembled a new Biological Review Team (BRT) which concluded that the salmon currently inhabiting the larger rivers (e.g. Penobscot) are genetically similar to those found in the coastal rivers of Maine (e.g. Narraguagus) and have similar life history characteristics and thus warranted inclusion in the listing. NOAA's Fisheries Service concurred with these findings and further concluded that the GOM DPS of Atlantic salmon is likely to become extinct within the foreseeable future throughout all of its range.

Species listed as endangered are offered the full protection of the Endangered Species Act, including a prohibition against take. Take is defined to include harass, harm, pursue, wound, kill, trap, capture, or collect.

### Critical Habitat

NOAA's Fisheries Service has also published a proposed rule to designate critical habitat for the expanded GOM DPS of Atlantic salmon which the agency has determined is essential to the conservation of this species. If this proposed rule is finalized, federal agencies will have to consult with NOAA's Fisheries Service to ensure that actions they authorize, fund, or carry out do not destroy or adversely modify critical habitat. The Endangered Species Act refers to critical habitat as "specific geographic areas that are essential for the conservation of threatened or endangered species and which may require special management considerations."

Federal actions that require consultation with the agency are those proposed projects that may affect salmon critical habitat, particularly the essential features, which support spawning, rearing and migration patterns. The agency has proposed designating 45 specific areas as critical habitat, comprising approximately 203,781 km of pe-

renial river, stream, and estuary habitat and 868 square km of lake habitat. These areas contain the physical and biological features essential to the conservation of this species within its range.

The Services are currently seeking public comment on the proposed rules, in particular they are interested in comments on using hatchery fish to supplement wild populations as a way to reduce the risk of extinction, on viability and/or threats to Atlantic salmon in the Gulf of Maine population, and on current efforts to protect these fish.

### Deadlines for Public Comment:

Proposed Listing Decision:  
**December 2, 2008**

Proposed Critical Habitat Designation:  
**December 5, 2008**

You can submit comments electronically via the Federal Rulemaking Portal <http://www.regulations.gov>. or in writing to the following address:

Attn: Assistant Regional Administrator  
NOAA's Fisheries Service  
Northeast Regional Office  
Protected Resources Division  
55 Great Republic Drive  
Gloucester MA 01930

Comments sent via facsimile for the proposed listing rule should be faxed to the attention of  
Proposed Listing  
Jessica Pruden (978) 281-9394 or  
Proposed Critical Habitat Designation  
Dan Kircheis (207) 866-7342.

Oral comments will also be accepted for both proposed rules at public hearings. The hearings are from 7:00 to 9:00 PM on  
**Nov 5, 2008**                      **Nov 6, 2008**  
Augusta Civic Center              Jeff's Catering  
76 Community Dr.                      15 Littlefield Way  
Augusta, ME                              Brewer, ME

If you would like to learn more about Atlantic salmon recovery and the proposed listing decision and critical habitat

designation please visit: [http://www.nero.noaa.gov/prot\\_res/altsalmon/](http://www.nero.noaa.gov/prot_res/altsalmon/).



Photo credit: Gilbertvan Ryckevorsel

## Trade Tracking Scheme

Last Fall, the International Commission for the Conservation of Atlantic Tunas (ICCAT) adopted a new bluefin tuna catch documentation (BCD) program as a means to track trade and provide a check on member nations' bluefin tuna landings. Monitoring of bluefin tuna landings and trade has been particularly difficult for East Atlantic and Mediterranean bluefin tuna fisheries, and further complicated by bluefin tuna farming in the Mediterranean. All countries participating in ICCAT bluefin tuna management were required to implement the BCD program.

The BCD is a document that serves as a sort of 'passport' for bluefin tuna that are traded. Each export of bluefin tuna out a participating country or import into a participating country must be accompanied by a BCD. Further, the document is generated at the time of catch or landing and validated by a government official, so the program serves as a check on landings data as well.

The Northeast branch of NOAA Fisheries' Atlantic Highly Migratory Species Management Division was responsible for the policy development, rulemaking, and operations to implement the BCD program for the United States. The program became effective July 2, 2008. The final rule modified the HMS International Trade Permit regulations to require BCDs for import, export, and re-export of all bluefin tuna. Additional information is available on the webpage <http://www.nmfs.noaa.gov/sfa/hms/ITP/index.htm>.