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DMF NEWS

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MarineFisheries

A Commonwealth of Massachusetts Agency

Challenges to Federal Framework 42 Groundfish Rules

MarineFisheries has gone to court to challenge Framework Adjustment 42 (FW 42) to the Northeast Multispecies Groundfish Plan. New Hampshire's Division of Marine Fisheries is co-plaintiff. This suit follows-up on the Commonwealth's suit filed in Massachusetts U.S. District Court back in May that sought to invalidate the Emergency Rule issued by the Secretary of Commerce in April and effective in May. According to the Secreatry, that Rule was necessary because the New England Fishery Management Council's FW 42 was not ready for May implementation, and six of 19 groundfish stocks apparently weren't going to meet their 2006 fishing mortality targets.

MarineFisheries submitted comments on both the proposed emergency rule and FW 42 and continues to insist that very large socioeconomic impacts of FW 42, especially to Massachusetts fishing communities from Provincetown to New Hampshire and beyond, cannot be justified. We contend the severe 2:1 differential days-at-sea (DAS) counting for the inshore and southwestern portion of the Gulf of Maine will fail to reduce overfishing of Gulf of Maine cod.

The 2:1 count will create a strong incentive for fishermen to maximize their economic returns by using all or most of their scarce DAS allottments to pursue the stock(s) promising the highest economic return, i.e., GOM cod. Considering the Commonwealth's commitment to GOM cod rebuilding, *MarineFisheries* concluded any increased fishing pressure on GOM cod will result in even more restrictive regulations in the next Council Amendment to be developed throughout 2007 and 2008 for May 1, 2009 implementation.

Another concern is DAS leasing. DAS cuts become necessary with mortality inceases, but DAS leasing keeps mortality up thereby creating the need for more DAS cuts, triggering a circle of more leasing and more cuts. At risk is a downward spiral to DAS levels far below what fishermen require to cover overhead and crew expenses, especially vessel owners in the 2:1 area. Many inshore, southwestern Gulf of Maine fishermen have already reached that level.

Despite NOAA Fisheries' expectation that DAS Leasing will mitigate against socioeconomic impacts, they acknowledge that most inshore fishermen located in the fishing communities

"DMF is one of many state partners involved with the federal government in preventing overfishing and rebuilding groundfish stocks. Having to challenge FW 42 in court is an unfortunate but necessary step both Massachusetts and New Hampshire have had to take."

affected by the 2:1 DAS differential counting area will be unable to compete effectively in the DAS leasing market.

Other issues have been raised in our joint complaint with New Hampshire such as failure of NOAA Fisheries to analyze whether the "mixed stock exception" provided in National Standard Guidelines, can be used for Cape Cod/Gulf of Maine yellowtail flounder thereby reducing the severity of FW 42 regulations and allowing fishermen to achieve optimum yields from the many healthy stocks managed through the Multispcies Plan.

Unfortunately, some critics of the Commonwealth's complaint have mis-

understood our intent regarding this exemption. For example, even without reducing 2006 fishing mortality for CC/GOM yellowtail flounder, the Council is expected to reach the mortality target set for 2007.

MarineFisheries is one of many state partners involved with the federal government in preventing overfishing and rebuilding groundfish stocks. Having to challenge FW 42 in court is an unfortunate but necessary step both Massachusetts and New Hampshire have had to take. We much prefer collaborative efforts respectful of states' interests. With questionable success of FW 42 in achieving multispecies groundfish mortality targets, GOM cod in particular, and with anticipated severe socioeconomic impacts, the Commonwealth cannot sit idly by, expecting socioeconomic disaster with no meaningful conservation benefits.

By Dr. David Pierce, Deputy Director

Results Available from Industry-Based Survey for Gulf of Maine Cod

On August 28th – 30th, 2006 *MarineFisheries* presented for peer-review a final report containing results from the Industry-Based Survey (IBS) for Gulf of Maine cod pilot study. The pilot study was initially funded for three years under a contract from the National Marine Fisheries Service / Northeast Cooperative Research Partners Program (NECRPP). The project is now entering a fourth field season after receiving additional funds from the NECRPP.

The project received high marks from a panel that included survey specialists from Florida, Alaska, and New Brunswick, Canada. A final report from the peer review is anticipated to be released by the NECRPP in the near future, but results from *MarineFisheries* final report on the IBS are available. Hundreds of maps were generated, illustrating the temporal and spatial distribution of juvenile, adult, spawning, and pre-spawning cod as well as other commercially valuable species.

DMF File Photo

Sample of juvenile cod caught in MA Bay during an IBS trawl.

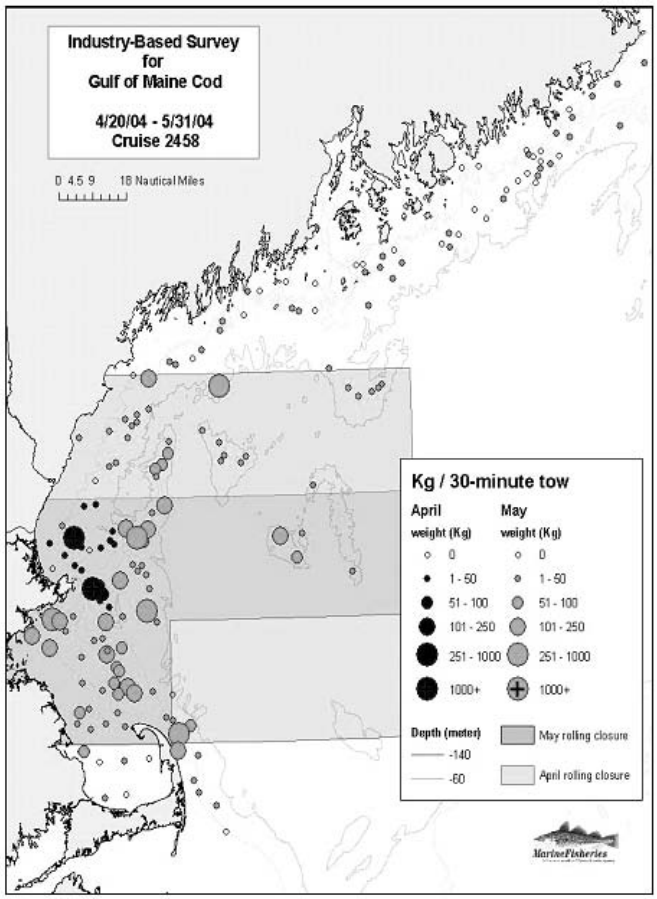
MarineFisheries has been conducting the IBS, a collaborative effort between the commercial fishing industry and federal and state scientists, to investigate cod stock distribution and demographics in Gulf of Maine waters from the southern tip of Cape Cod to the Maine/Canadian border from November through May. After the May 2006 cruise was completed, data was analyzed and *MarineFisheries'* final report was produced. The report highlighted work completed under the initial contract and included a thorough description of methodology used during the pilot study including the unique survey design which utilizes a systematic grid of tows to ensure thorough coverage over the study area, as well as fishermen-chosen tows that provide a higher resolution of areas that have been identified as cod "hot spots".

Of particular interest were maps that illustrated distribution of cod in relation to closed management areas, as well as the increased number of juvenile cod that are consistently observed in Massachusetts Bay. The final report submitted to NCRPP can be found on *MarineFisheries'* website: www.mass.gov/marinefisheries. Results for the 2003/2004 and 2004/2005 survey also are available at a GIS-based website: https://fish.nefsc.noaa.gov/ibs/. Fishermen and other interested parties are encouraged to view this information, as it is anticipated to contribute to the management of the GOM cod fishery in the future.

The 2006/2007 field season began in earnest on November 21st and will continue through May 31st. As noted in a November 8th *MarineFisheries* Advisory, the Division is seeking assistance from fixed-gear fishermen to clear designated areas of fixed gear during the field season.

For further information on results from previous years or information on this year's survey, including maps and tables that outline tow locations, coordinates for the stations, survey schedules, and updates identifying when tows have been performed, please contact the cod IBS Project Leader, Bill Hoffman, at (978) 282-0308 ext. 106 or bill.hoffman@state.ma.us or visit the *MarineFisheries* website at www.mass.gov/marinefisheries.

By Bill Hoffman, IBS Program Coordinator



DMF File Graphic

Distribution of IBS trawl-caught cod during April and May of 2004.

New Five-Point Haddock Trawl Successfully Avoids Cod Bycatch

MarineFisheries' Conservation Engineering Program, under the Marine Fisheries Institute (MFI), has completed a two-year project to develop and test a Five-Point Haddock Trawl designed to avoid cod bycatch when targeting haddock. The experimental net greatly reduces contact with the seafloor, touching with only five "drop-chains" that hang from the footrope, hence the name "Five-Point Trawl." Recent field test results indicate that the experimental net design is a potential alternative to currently mandated haddock trawls that utilize horizontally placed "separator panels" to avoid cod bycatch.

Separator panels in haddock trawls have a horizontal panel that divides the net mouth and leads into two different codends. Fish that swim up into the top section (e.g., haddock) are retained in the top codend; all other fish that pass through the bottom section (e.g., cod) escape through the lower, open codend. But the separator net is a redundant design that includes an extra, open codend and panel that can increase drag and lead to unnecessary fuel consumption. Additionally, unnecessary fish stress (and potential mortality) may occur in non-targeted fish involved in the herding and escape process.

MFI worked with Reidar's Manufacturing Inc. of New Bedford to design the Five-Point Haddock Trawl (a modified three-bridle, four-panel box trawl based on MFI's sweepless raised footrope trawl design) that separates fish by exploiting differences between the behaviors of cod and haddock.

The net flies over cod while retaining haddock, which generally move upward as the trawl approaches. Specifically, the net only contacts the bottom with 5 "drop chains" along the footrope; fish that travel upward in response to the net are herded towards the codend while other fish travel under the net, never actually coming into contact with the gear. The elimination of the separator panel and the additional codend offers a simpler construction with less drag and less fish mortalities due to the stress associated with gear contact.

MFI conducted field tests with the experimental net during June and July of 2006 aboard the F/V Mary Elena on Georges Bank in the Eastern and Western U.S. / Canada Area and the Haddock SAP. Overall 91 tows were conducted during 16 days. During tows, MFI scientists compared the experimental Five-Point Haddock Trawl net with a standard groundfish net by either alternate haul trawling, towing one net followed by the other, or twin trawling where both nets are towed simultaneously.

Results of the field trials showed a remarkable difference in cod between the experimental and standard nets. Overall, there was a 98% reduction in the cod catch for the Five-Point Haddock Trawl net without a significant decrease in the directed haddock catch. Flatfish species and nearly all bycatch species were also greatly reduced within the experimental net.

DMF File Photo

Ninety-one tows were conducted aboard the F/V Mary Elena during field trials of the 5-point haddock trawl.

Plans are currently underway to partner with New Bedford fishing vessels and the University of Massachusetts' School for Marine Science and Technology (SMAST), through the MFI, to continue this research during the winter season and over a broader range of Georges Bank. The design will be submitted to NOAA Fisheries for proposed use as a regulated net within the Georges Bank Regulated Mesh Area.

By Mike Pol & David Chosid, Aquatic Biologists

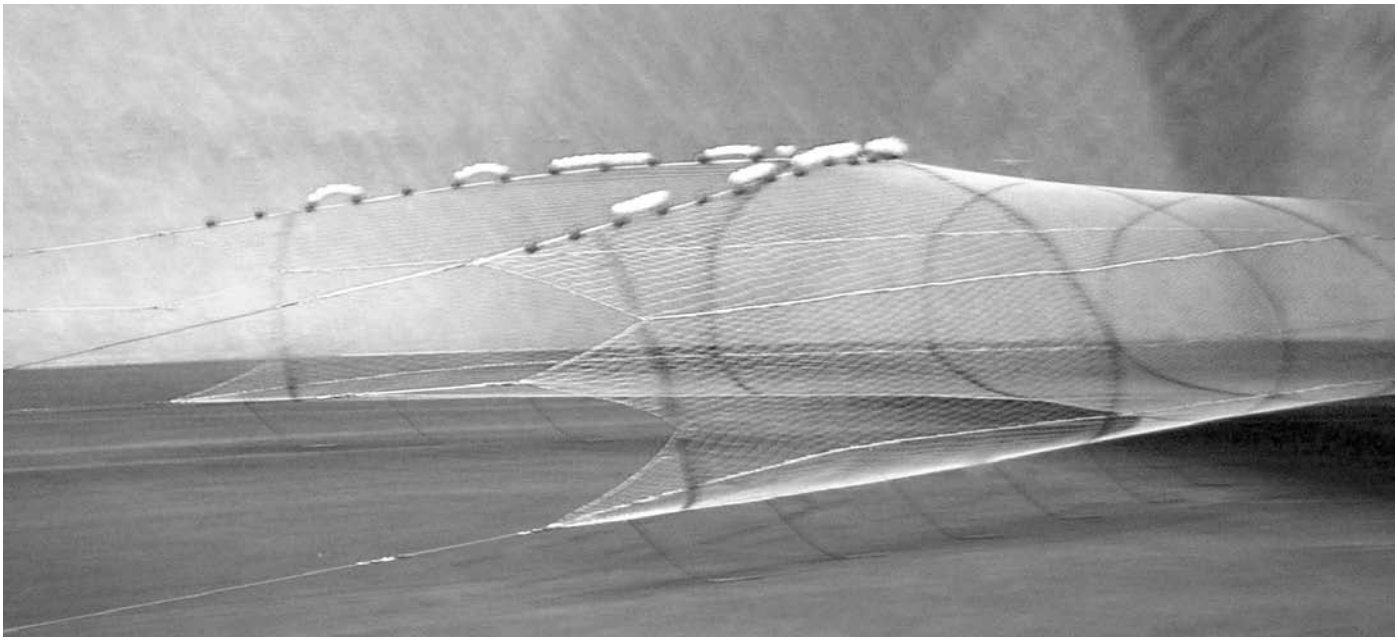


Photo by Mike Pol

The experimental net underwent trials in the flume tank at Memorial University, St. John's Newfoundland.

HubLine Mitigation & Restoration Program Update

MarineFisheries has completed a second successful field season of the HubLine Mitigation and Restoration Program. The program's projects are designed to offset potential impacts to living marine resources resulting from construction of a natural gas "HubLine" in Boston Harbor during 2002-2003. To date, *MarineFisheries*' efforts appear to be successfully enhancing shellfish stock, restoring anadromous fish resources, providing additional habitat relief through artificial reefs, and establishing new eelgrass beds.

Shellfish Stock Enhancement

MarineFisheries' Shellfish Stock Enhancement project is working with six Boston Harbor communities to restore and enhance existing populations of soft-shell clams (*Mya arenaria*). For more than a decade, Boston Harbor has suffered from declining shellfish harvest due to poor larval recruitment and water quality. During the first phase of this project *MarineFisheries* collaborated with local Shellfish Constables to finalize five pilot sites: one site in Quincy and two sites in Weymouth and Hingham, respectively (public health and law enforcement concerns prevent enhancement activities in areas closed to shellfishing).

In May of 2006, Hingham High School student volunteers helped plant approximately 30,000 seed clams in Hingham Harbor. *MarineFisheries* had produced these soft-shell clam seeds with the assistance of Salem State College's Northeast Massachusetts Aquaculture Center (NEMAC) which was contracted to produce 1.05 million seed clams. NEMAC helped *MarineFisheries* monitor the pilot sites and review results to identify optimal propagation/enhancement methods for neighboring Boston Harbor municipalities.

DMF File Photo

Student volunteers from Hingham High School spread a shellfish predator control net in Hingham Harbor.

During June, July and August 2006 over 1 million hatchery-reared seed clams, ranging from 1/8 inch to 1/2 inch, were planted at five enhancement sites in the towns of Quincy, Weymouth and Hingham by *MarineFisheries* and NEMAC biologists with the invaluable assistance of town Shellfish Constables, commercial clam diggers and in some cases high school students. Survivorship and growth of the seeded clams are being closely monitored and predator exclusion nets inspected regularly. Expansion of planting projects to the shellfish flats of other Boston-area towns is being evaluated.

Anadromous Fish Restoration

To enhance anadromous fish resources in the embayments and associated watersheds adjacent to the HubLine Project, *MarineFisheries* has implemented a three-year plan for anadromous fish restoration. Seventeen species of anadromous fish reside in our marine and inland waters at various times of year, comprising an important part of the near-shore fauna along the Massachusetts coast.

Unfortunately this proximity to the near-shore environment can lead to significant impacts during spawning and migration periods; siltation resulting from construction activities can smother eggs of anadromous fish that spawn in the upper portion of estuaries (e.g., blueback herring, rainbow smelt, white perch, tomcod) or can block the spawning migration of other anadromous species that are trying to reach the headwaters of rivers draining into the estuaries (e.g., alewives and American shad). The effect of perceived minor impacts to the populations can be significant because the anadromous fish resources have already suffered the cumulative effects of years of habitat alteration and disturbance. *MarineFisheries*' three-part project includes anadromous fish passageway enhancements, propagation and stocking, and habitat enhancement.

A *MarineFisheries* survey of fish passage along the Massachusetts coast identifies sites where anadromous fish are impeded or blocked from reaching their spawning grounds. This survey forms the basis of an intial list of priority construction/repair projects for new and existing fish passage structures, including several key construction/repair projects in the vicinity of the HubLine. These projects have the potential to restore and/or enhance hundreds of acres of anadromous fish spawning habitat. Where runs have been severely depleted or extirpated because of passage problems, spawning adult fish will be transferred from a healthy donor run to the depleted run after the fishway repair/construction is completed.

Since the summer of 2005, several anadromous fish passageway enhancement projects have been completed, including installing grating and a viewing platform over the Iron Hill fishway on the Back River in Weymouth and functional repairs and modifications to fishways on the Charles River from Watertown to Wellesley/Newton. Notably, the Bleachery Dam (Waltham) on the north side of the Charles River was breached in the fall of 2005, creating an additional avenue for anadromous fish passage that complements a breach completed on the south side of the river decades ago. To highlight improved passage structures and anadromous fish species in the Charles River, *MarineFisheries*, the Department of Conservation and Recreation, the Corporate Wetlands Restoration Partnership, the Charles River Watershed Association, and Sasaki Associates have partnered to install a multi-panel educational kiosk near the Watertown Dam fishway.

Propagation and stocking efforts are also well underway. In 2004, *MarineFisheries* began a two-year pilot project to stock rainbow smelt (*Osmerus mordax*) in the Crane River, Danvers. This project is linked to a NOAA Protected Species

DMF File Photo

MarineFisheries ***staff (Fisheries Technician Kate Taylor and Aquatic Biologist Matt Ayer) stocking smelt in the Crane River.***

Program smelt monitoring grant. During the 2005 season, techniques were developed to incubate smelt eggs and culture larvae in the lab leading to an eventual release of approximately 1.1 million smelt larvae marked with oxytetracycline in the Crane River.

Monitoring results are encouraging and indicate that laboratory hatched smelt are returning to the Crane River and the nearby North River in Salem. After stocking approximately 1.2 million marked smelt larvae in 2006 in the Crane River, *MarineFisheries* retains high hopes that it will reach its goal of releasing two million smelt larvae in 2007, the last year of the project.

Unfortunately attempts to restore American shad populations in the Charles River and Neponset River have been more

Photo courtesy of ENEL North America

Heavy rains brought the Merrimack River to historic levels—within a few feet of the 1936 flood and to flows of 106,000 cubic feet per second (cfs). For comparison, the average flow during May and June ranges between 4,500 and 10,000 cfs.

elusive. Efforts to release hatchery spawned fry were frustrated by back-to-back flooding events of the Merrimack River in June of 2005 and again in May of 2006. We were thus unable to reach our 2006 target goal to stock three million fry, but we remain hopeful that future stockings will lead to successful restoration of naturally spawned shad.

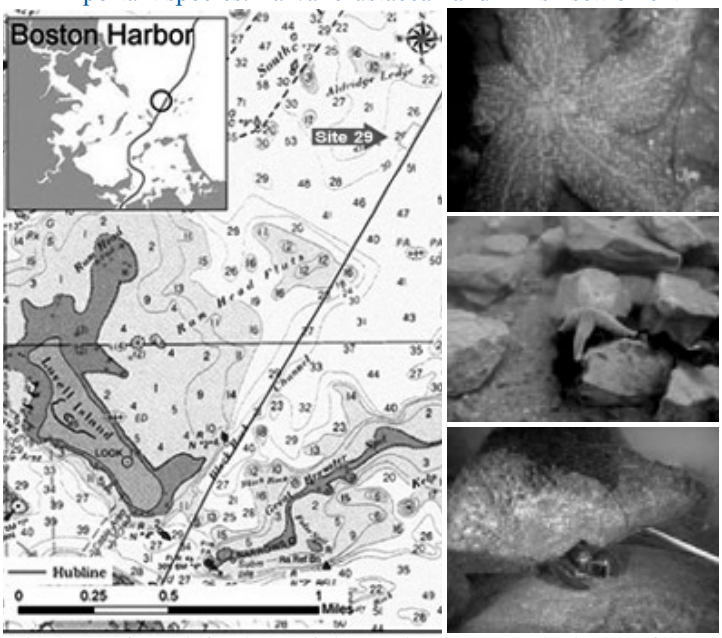
American shad (*Alosa sapidissima*), the largest members of the Clupeidae (Herring) family, were once an important component of the anadromous fish fauna in Massachusetts, especially in larger systems such as the Connecticut, Merrimack, Neponset, and Charles Rivers but have been extirpated or reduced due to the construction of dams, water pollution at the spawning grounds, and over-fishing. The shad project is a long term collaborative effort between *MarineFisheries* and the U.S. Fish and Wildlife Service (USFWS) and includes the development of a shad fry stocking program in conjunction with fish passage improvements. The Merrimack River was selected to serve as the source of brood stock since the shad population has rebounded there in recent years due to high recruitment resulting from water quality improvements and the construction of efficient fish passage structures on dams.

In 2006, *MarineFisheries* had high hopes of releasing three million fry into the Charles River. All fry would be marked to allow tracking of their fidelity to natal rivers throughout juvenile and adult life stages. But for a second year in a row, heavy and concentrated spring rains resulted in extraordinary flows in the Merrimack River, delaying shad propagation activities. Shad Propagation Project personnel had planned to begin taking broodstock fish into the spawning tanks on Essex Dam during the week of May 15, however, on Sunday May 14, heavy rains brought the Merrimack River to historic levels. Both Lawrence and Lowell were declared federal disaster areas by the Federal Emergency Management Agency and for safety reasons, the fish lift was closed from May 13 through June 22 (the fish lift is not designed to operate above 25,000 cubic feet per second (cfs); during flooding the Merrimack River flowed at over 106,000 cfs). Eventually, 650 broodstock shad were collected from the Merrimack River resulting in release of 1,785,622 fry – an incredible success given Mother Nature's obstacles.

Artificial Reef

Since completion of a 1.7-acre complex of six individual cobble-boulder reefs in Boston Harbor, *MarineFisheries* has received substantial interest from local divers and fishermen about the project and public use of the reef. The reef, located west of Calf Island and southeast of Aldridge Ledge, was constructed to provide hard bottom habitat which is critical to several life stages of commercially important species such as American lobster, winter flounder, sea scallops, sea urchins, Atlantic cod, and numerous other species of fish and invertebrates. Initial monitoring studies appear to indicate a wealth of marine life is utilizing the new reef structure.

MarineFisheries scientists are now evaluating the success of this project utilizing visual dive surveys, semi-annual trapping of small fish, annual larval suction-sampling, and a ventless lobster trap survey. This monitoring program will characterize and track larval settlement and the development of benthic invertebrate and finfish populations. Preliminary observations collected this summer suggest that the reef will be successful attracting and/or producing commercially important species. Larval crustacean and finfish settlement



Clockwise from left: the reef, located at Site 29 northeast of Lovell Island, displays a wealth of marine life including sea stars and lobsters. ***DMF File Photos***

was also documented on the reef this September, indicating the ability of the reef to provide essential habitat for the early life stages of these species, although these data have not been fully analyzed. Results from this research will be available by spring 2007.

Eelgrass Restoration

Eelgrass restoration efforts in Boston Harbor have resulted

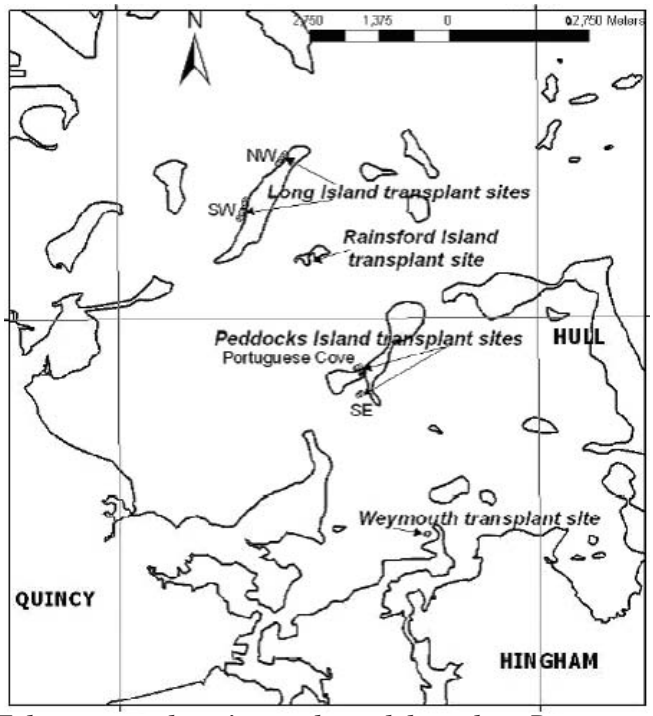
DMF File Photos

Healthy and growing eelgrass a year after transplant.

in promising growth and may lead to an improved seed-planting method currently under trial. Spring 2006 field work began with the assessment of shoot density and expansion of the eelgrass plots and seeded areas planted the previous year. These included SW Long Island (LI S), SE Peddocks Island, and Lower Neck Cove, Weymouth (see map below). Unfortunately results were not promising across all sites, but by adjusting efforts to focus on the healthiest sites, the total planted area now encompasses 5.1 acres of eelgrass!

By summer of 2006 many transplants began producing seed shoots and the checkerboard planting pattern in many areas had filled in to the point where it was no longer possible to distinguish the original squares. Plots off of Long Island and Peddocks Island expanded an average of 40% in area less than a year after planting.

MarineFisheries is monitoring sites to determine whether transplanted beds provide similar habitat value to naturally



DMF File Graphic

Eelgrass transplant sites are located throughout Boston Harbor on Long Island, Rainsford Island, Peddocks Island, and Lower Neck Cove in Weymouth.

Volunteers from NPS-BEAN program (Boston Environmental Ambassadors to the National Parks) assist in bundling eelgrass shoots in preparation for planting.

occurring beds. To do this, several indices are being used to compare areas transplanted in 2005 and 2006, a nearby unvegetated control site, an existing but declining bed in Boston Harbor (Hull), and a healthy existing bed off Nahant.

The number and diversity of species present in core samples, visual surveys of fish and invertebrates and percent cover of eelgrass and algae indicated that 2005 transplanted beds compared favorably to the existing Hull bed, and even exceeded the healthy Nahant bed in species richness for some organisms (e.g. epifaunal and demersal species). As one may expect, 2006 transplant sites have not yet achieved the habitat value of a natural bed based on these indices. However, eelgrass beds planted to date have exhibited significant growth and sufficient density to attract a number of organisms.

An additional benefit of *MarineFisheries*' eelgrass restoration work is the development of an alternative seed planting method. Other methods can be time-consuming and expensive requiring extensive sieving to separate seeds from stems and detritus. The new technique will be described further once it is fully evaluated in spring 2007. If it proves successful, it could provide a far less labor-intensive manual method for vegetating large areas than hand-transplanting shoots.

Thanks to all the citizen SCUBA divers and volunteers from Clear Forest, Inc., the National Park Service, and State Street Corporation who donated over 120 hours of service to eelgrass restoration efforts during the 2006 field season.

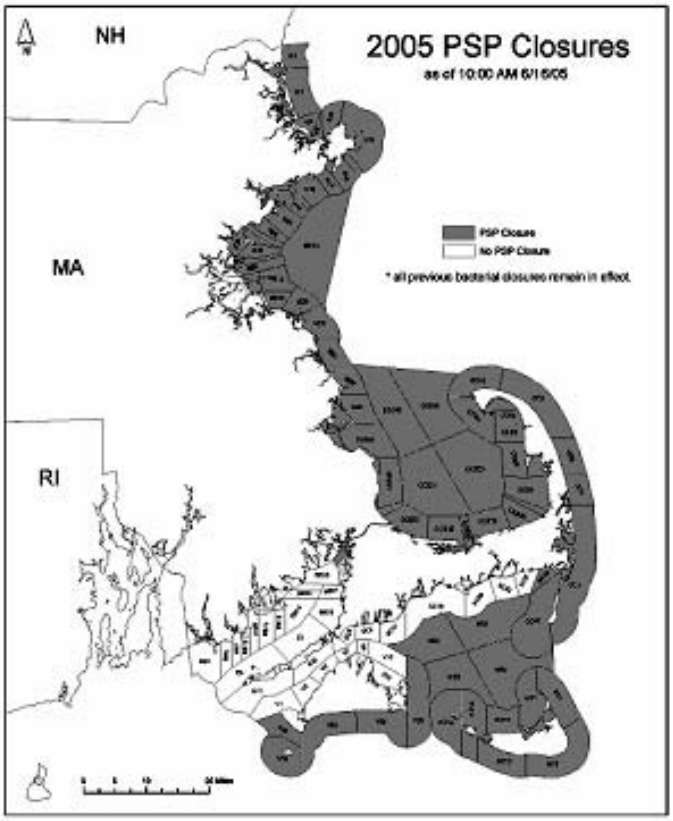
For further information on the the HubLine Mitigation and Restoration Program and individual projects please visit http://www.mass.gov/dfwele/dmf/programsandprojects/hubline/hubline.htm#hub.

By Bruce Estrella, HubLine Program Coordinator

MA to Distribute $2-Million in Federal Red Tide Disaster Funds

Spring 2005 witnessed an unprecedented coastal bloom of red tide (*Alexandrium fundyense*) that migrated southward through southern Maine and New Hampshire and into Massachusetts, setting an all-time record for red tide distribution and subsequent shellfish area closures. Nearly a year later, *MarineFisheries* is gearing up to distribute two million in federal funds appropriated by the U.S. Congress through NOAA Fisheries to address economic impacts to the Commonwealth's shellfish industry.

A total of 1,351,265 acres or 77.4% of the Commonwealth's marine waters in 42 coastal communities were closed to shellfishing, extending south as far as lower Cape Cod Bay, including shellfish growing areas around Nantucket and Martha's Vineyard. Additionally, *MarineFisheries* ordered a prohibition on landings of shell-on sea scallops (*Placopecten magellanicus*) and surf clams (*Spisula solidissima*) harvested from the federal waters of Stellwagen Bank.



Map by Micah Dean

Shellfish closures peaked on June 16, 2005, encompassing over 3/4 of the Commonwealth's marine waters.

Over the next few months, *MarineFisheries* will hold public meetings on the North Shore, South Shore, and Cape Cod to gather input from shellfishermen and develop an equitable strategy for distributing funds. Information about the program and a schedule of public meetings will be forthcoming on the *MarineFisheries* website at www.mass.gov/marinefisheries. Questions can be addressed to Mark Rousseau at 978-282-0308 x162 or mark.rousseau@state.ma.us.

By Mark Rousseau, Aquatic Biologist

Dr. Don Anderson Honored with 2005 Belding Award

Dr. Donald Anderson, a Senior Scientist in the Biology Department of the Woods Hole Oceanographic Institution and Director of the U.S. National Office for Marine Biotoxins and Harmful Algal Blooms, received the 2005 Dr. David L. Belding award at a ceremony on October 5, 2006. The Belding Award is bestowed annually to an individual who, in the opinion of the Massachusetts Marine Fisheries Advisory Commission (MFC), has demonstrated outstanding contributions toward the management, conservation and sustainability of the Commonwealth's marine resources. This was indeed a fitting tribute to an individual who has been and continues to be responsible for immense accomplishments in the field of biotoxins here in the Commonwealth and throughout the world.

Dr. Anderson has conducted cutting-edge research in the field of toxic marine algae since 1978 resulting not only in the authoring and co-authoring of over 200 scientific papers and 12 books, but in the dramatic and effective management of fisheries affected by these marine organisms. He is also one of the lead investigators in the newly created Woods Hole Center for Oceans and Human Health, a national research facility funded by the National Science Foundation and the National Institute of Environmental Health Sciences to explore mechanisms that govern relationships between marine processes and human health.

During the 2005 "Red Tide" event that closed more than 77% of the Commonwealth's marine waters to shellfishing, Dr. Anderson's real-time field investigations provided *MarineFisheries* managers heretofore unavailable information that allowed for the judicious closing and opening of shellfish beds resulting in the protection of public health and promotion of public confidence in shellfish consumption. Currently, Dr. Anderson and *MarineFisheries* shellfish personnel are collaborating on the development of biological and oceanographic models that will assist *MarineFisheries* in the managmeent of future toxic events.

Commission Chairman Vito Calomo, along with Commissioner David Peters of the Department of Fish & Game, *MarineFisheries*' Director Paul Diodati, Mike Hickey & Dave Whittaker of *MarineFisheries*' Shellfish Program and Dr. Belding's grandson, Nat Eldredge, and son-in-law, David Eldredge, each expressed their appreciation to Dr. Anderson for his extensive contributions in the arena of marine biotoxin identification and management. We look forward to continued collaborations with Dr. Anderson in both biotoxin management efforts and development of new technologies to address marine algal events.

By Dave Whittaker, Shellfish Biologist

Photo by Dan McKiernan

L-R: Mike Hickey, DMF; Dr. Don Anderson, Dave Whittaker, DMF; and Terry O'Neil, DMF.

ASMFC Supports Return to Higher Dogfish Landings

November 10th marked a much anticipated increase in the spiny dogfish possession limit in the Commonwealth. Commercial and recreational fishermen have long lamented the large abundance and wide distribution of dogfish off Massachusetts plaguing fishermen who try to avoid dogfish, but cannot. Buoyed by this ground swell of support for a modest change from the current fishing year quota of 4 million pounds to 6 million pounds, *MarineFisheries* took action after garnering complementary agreement from other state fisheries management partners on the Atlantic States Marine Fisheries Commission (ASMFC).

DMF File Photo

Dogfish have become routine and unavoidable in fishermen's catches.

After reviewing the latest assessment results revealing that dogfish are no longer overfished and overfishing is not occurring, *MarineFisheries* proposed increasing the spiny dogfish quota to enable higher trip limits. Subsequent technical review concluded that a 2-million pound quota increase and raised trip limits would have a negligible effect on fishing mortality, underlying the Commission's decision to support the Commonwealth's proposal.

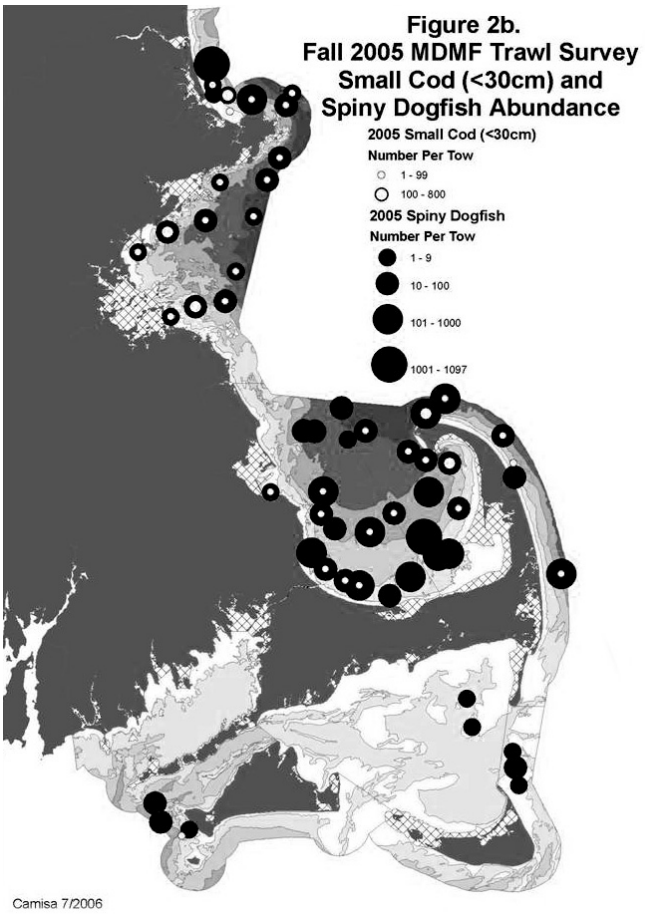
At a November ASMFC Spiny Dogfish Management Board meeting, *MarineFisheries* worked with its state fisheries management partners to develop a mutually agreeable quota split that assigns 58% of the overall spiny dogfish quota to "northern" states (CT through ME) with the remaining 42% assigned to states from NY south. This translates into roughly an additional 993,000 pounds of spiny dogfish available to commercial fishermen in the "northern states" for the remainder of the 2006/2007 fishing year. The same 6-million pound quota and regional quota split will be in place for the next fishing year beginning May 1, 2007 with trip limits to be determined by ASMFC early next year.

MarineFisheries' arguments for an increased quota included published scientific information documenting the profound impact of dogfish predation on juvenile cod abundance. Although 2 million pounds will not make much of a dent in dogfish abundance off Massachusetts shores, it at least will serve notice that status quo management of dogfish is undesirable especially in the context of ecosystem-based fisheries management.

Our eyes are wide open when it comes to dogfish and cod rebuilding. *MarineFisheries*' Cod Conservation Zone (CCZ) in Massachusetts Bay is a long-term commitment to cod rebuilding as are agency efforts to assist the Stellwagen Bank Marine Sanctuary move towards ecosystem-based management and determine the best way to protect cod from dogfish that frequent Sanctuary waters.

A reminder that as of the date of this newsletter federal rules restrict federally permitted fishermen to a 4-million pound quota with a 600-pound trip limit.

By Dr. David Pierce, Deputy Director



Graphic by Matt Camisa

New Technical Reports & Journal Contributions Available

TR-26 Dean, M.J., S.R. Reed, and T.B. Hoopes. **2004 Massachusetts lobster fishery statistics.** PDF (3,650 kb)

TR-27 Estrella, B.T. and R.P. Glenn. **2006. Lobster Trap Escape Vent Selectivity.** PDF (1,253 kb)

TR-28 Nelson, G.A. **2005 Massachusetts Striped Bass Monitoring Report** PDF.

Nelson, G. A., B. C. Chase, and J. D. Stockwell. **2006. Population consumption of fish and invertebrate prey by striped bass (Morone saxatilis) from coastal waters of Northern Massachusetts**, USA. J. Northw. Atl. Fish. Sci., 36: 111–126.

Evans, N.T. and F.T. Short. 2005. **Functional trajectory models for assessment of transplanted eelgrass, Zostera marina L.,** in the Great Bay Estuary, New Hampshire. *Estuaries* Vol.28 (6) 936-947

Improved Prospects for Squid Inshore Fishery

For Massachusetts inshore draggermen, the *Loligo* squid season is a proverbial "wildcard" that can make or break a fisherman's year. Because squid are so short-lived, the boom-or-bust spring fishery is mostly dependent on a single cohort that fluctuates each year based on spawning success and annual survival. More recently, inshore draggermen also have faced the impacts of an offshore directed fishery managed by the Mid-Atlantic Fishery Management Council on a quarterly quota.

In 2005, the timing of the Massachusetts inshore squid fishery at the end of the 2nd quarter combined with high squid catches and a shift in effort from groundfish to squid resulted in the April-June fishery quota being nearly consumed prior to the arrival of squid in Massachusetts waters. *MarineFisheries* therefore appealed to the Council for a different trimester approach that better incorporated the historical Massachusetts inshore fishery into the regional management structure.

Squid live less than a year and migrate into Massachusetts southern waters in late April through May where they are harvested by draggers, weirs, and some recreational and commercial hook and line fishermen. This historical fishery dating back at least 50 years is prosecuted mostly by MA- and RI-based vessels, along with some from CT and NY. It is a well-managed trawl fishery with a brief regulated small-mesh season of April 23 – June 9, and this season was chosen to maximize squid catches and minimize by-catch of finfish species (scup, sea bass, and fluke). *MarineFisheries* crafted these rules after two decades of sea sampling, studies, and cooperation from the industry.

The Mid-Atlantic Council, responsible for managing the regional *Loligo* squid fishery, implements annual quotas with seasonal allocations. No trip limits are applied to the directed fishery until 80% of the period quota is reached when the trip limit becomes 2,500 lbs. From 2001 through 2004 the quarterly quotas and trigger to 2,500 lbs. had little impact on the inshore fishery because the directed fishery remained open through most or all of the important late-April and May period.

In 2005, that changed. High squid catches and a shift in effort from groundfish to squid resulted in the regional April-June fishery quota being nearly taken prior to the arrival of squid in Massachusetts waters. Director Paul Diodati and Dr. David Pierce successfully appealed to the Mid-Atlantic Council to amend the seasonal allocations to prevent premature closures of the traditional Massachusetts fishery.

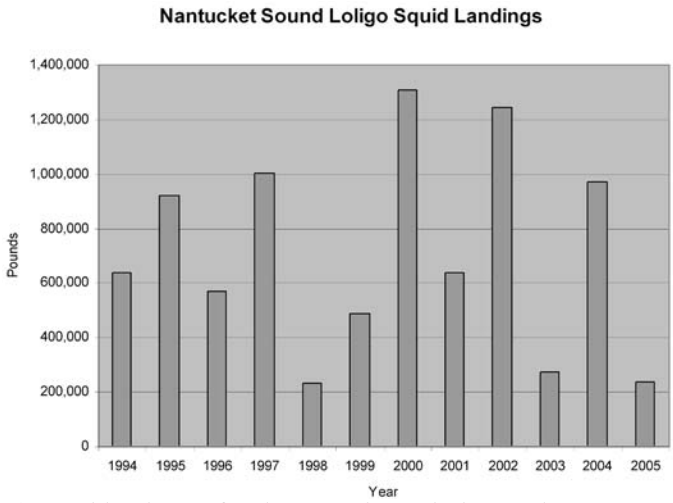
Former Seasonal Allocations		New Seasonal Allocations	
Jan.-March	33%	Jan. - April	43%
April-June	18%	May - Aug.*	17%
July-Sept.	17%	Sept. - Dec.	40%
Oct.-Dec.	32%		

*Note that during the May-August tri-mester, should 45% of this period's allocation be landed prior to June 30, then the directed fishery for Loligo would be closed until July 1 at which time it would be re-opened for the balance of the period with a 90% trigger. If no closure occurs during the first half of this period, then the directed fishery would remain open under the 90% trigger.

By Dan McKiernan, Deputy Director

MORE ABOUT SQUID POPULATION DYNAMICS

Inshore migration is highly dependent on environmental conditions: warm southerly winds in late April and May bring warm waters to Nantucket and Vineyard Sound and schools of migrating and spawning squid. Combining the variability in squid abundance with the variability in environmental conditions you have a fishery that sees wild fluctuations in landings from ¼ million lbs. to 1 ¼ million over the last dozen years.



Graphic by Dan McKiernan

Annual landings of Loligo squid caught by trawlers in Nantucket Sound.

MarineFisheries Comings & Goings

Comings

Since this spring several seasonal fisheries technicians have enhanced the Division's work on numerous programs and projects. **Joe Facendola** and **David Kowalske** have been assisting to monitor the diadromous fish runs in the Acushnet River, New Bedford while **Stephanie Buso** and **David Scarpitti are helping** implement a coastwide ventless lobster trap survey.

Steve Wilcox joined the Coastal Lobster Project as a Fisheries Supervisor in May 2006, where he is collecting and analyzing biological data on the American lobster resource in Massachusetts waters. He previously worked on a ventless trap survey at the University of Massachusetts

Thomas Shields is the new Boston Harbor Shellfish Stock Enahnacement Biologist following Denis-Marc Nault's departure (see below). Thomas brings over 20 years of experience in field aquaculture and biological surveys peformed in the Pacific Northwest.

Goings

Denis-Marc Nault moved on to a position with the State of Maine last February after assisting shellfish propagation activites as part of DMF's HubLine Program.

Beth Shanks, who served for many years as administrative assistant and receptionist at the Annisquam River Marine Fisheries Station in Gloucester, departed in May to pursue a Medical Assistant's degree in Philadelphia.

Marine Fisheries Institute
A Commonwealth of Massachusetts Initiative

MarineFisheries and UMass Create MFI and Build Presence in New Bedford

Four years ago, the Commonwealth of Massachusetts created the Massachusetts Marine Fisheries Institute (MFI) with the mission to promote sustainable fisheries by providing timely information and guidance to protect, conserve, and manage Massachusetts' marine and coastal resources.

The MFI is a partnership between the Executive Office of Environmental Affairs' (EOEA) Division of Marine Fisheries and the University of Massachusetts' Intercampus Graduate School of Marine Science and Technology (IGS). The Institute's structure links the two organizations together to enhance each other's influence and effect on marine fisheries management in Massachusetts and throughout New England.

MarineFisheries and UMass have been coordinating efforts to create the MFI infrastructure which will consist of an impressive marine science campus. The completed main campus will consist of three buildings and 5 acres situated between Rodney French Boulevard and the Battery Milliken in Clark's Cove, New Bedford. Plans include the construction of a new 10,000 square foot office building to house the programs that are conducted out of the Division's South Coast Field Station. Pending the construction of a new office building, Mayor Lang and the City of New Bedford assisted the Division in finding suitable interim space, and on August 10, 2006, *MarineFisheries* South Shore Field Station moved from its previous Pocasset office to the city's newly renovated Quest Center in New Bedford's downtown area.

MarineFisheries believes this is a truly unique opportunity to offer fishermen, students, faculty, professional scientists, and members of the general public access to information, the ability to interact and cooperatively conduct fisheries research and management programs in our Nation's most valued seaport. The MFI site together with our other coastal facilities in Newburyport, Martha's Vineyard, and highlighted by our Gloucester facility (our Nation's oldest seaport), will complete a necklace of coastal facilities specially designed to support our marine fishing communities.

New Research Platforms

MarineFisheries placed two new coastal research vessels in service this summer, the R/V *Alosa* and the R/V *Mya*. The *Alosa* is a 28' Seaworthy (formerly BHM) homeported in Gloucester to support *MarineFisheries*' north shore and Boston Harbor research. the *Mya* is a 31' Eastern (formerly the 31' JC) based out of New Bedford to support work in Buzzards Bay and the Cape and Islands.

Both vessels are diesel-powered, single screw, lobster boat hulls, equipped with a hydraulic hauler, mast, boom, and electric wince, and large open decks. Both boats are also equipped with lift-out doors in the transom to support scientific diving operations. The integrated navigational packages are computer ready to facilitate the use of survey software.

As well as diver support, these vessels will be used to support sampling with multiple gear types, remote sensing and physical surveys, whale, shark, and turtle conservation efforts, and other directed research projects. Recent work includes an eelgrass survey off of Provincetown, juvenile lobster suction sampling in the Beverly Salem area, and eelgrass restoration efforts in Boston Harbor. Both vessels will also support on-going research efforts in the Cod Conservation Zone and cooperative research through the Marine Fisheries Institute.

R/V Alosa transiting though Cape Cod Canal

DMF File Photos

Regulations Update

During the period March 2006 through December 2006, the following regulatory changes were enacted by DMF after public hearings and Marine Fisheries Advisory Commission (MFC) approval. Emergency regulations that have subsequently expired or regulations replaced by subsequent filings are not included:

Lobster

*1. **LCMA 2:***

DMF assigned trap allocations for use in 2007 to eligible coastal and offshore commercial lobster trap fishermen in LCMA 2 as part of the effort control plan contained in Addendum VII to the interstate plan (322 CMR 6.13 & 7.03). The LCMA 2 Effort Control Plan affects all commercial permit holders landing lobsters taken by traps in the Commonwealth whether fishing took place in state and/or federal waters. To be eligible to receive a trap allocation, a permit holder had to have fished in LCMA 2 in at least one year from 2001 - 2003. Each eligible permit holder's Initial Trap Allocation is then assigned based on their maximum Effective Traps Fished in any one year during 2001 – 2003. Note that recreational lobster fishermen and non-trap fishermen are not targeted by this plan.

DMF implemented a new v-notch definition in LCMA 2 to protect female lobsters through two additional molts before they are subject to harvest, allowing each female to extrude at least one additional clutch of eggs. All commercial fishermen fishing or authorized to fish in LCMA 2 are prohibited from possessing "any female lobster that bears a notch or indentation in the base of the flipper that is at least as deep as 1/8 inch, with or without setal hairs" (322 CMR 6.02).

*2. **Outer Cape LCMA:***

DMF decreased the commercial lobster minimum size in the Outer Cape by 1/32" to 3 3/8" in compliance with the interstate fishery management plan (322 CMR 6.01);

*3. **LCMA 3, Southeastern Recreational Lobster Management Area and Dealer Provisions:***

DMF reinstated language regarding the absence of "setal hairs" to the v-notch definition applicable to dealers as well as commercial lobstermen in LCMA 3 and recreational fishermen in the Southeastern Lobster Management Area (322 CMR 6.02). This correction brings the Commonwealth into compliance with the interstate plan by definition a "v-notch" as a "v-shaped **straight sided traingular cut, without setal haris,** at least ¼ inch in depth and tapering to a sharp point in the flipper next to and to the right of the center flipper as viewed from the rear of the female lobster when the underside of the lobster is down.

Scup, Summer Flounder (Fluke) & Black Sea Bass

4. **DMF amended no-fishing days from Friday through Sunday to Friday and Saturday during the summer period (May – October) commercial scup fishery (322 CMR 6.28);**

5. **DMF extended the recreational closed season for scup by one month through September in compliance with the interstate fishery management plan (322 CMR 8.03)**

6. **DMF increased the minimum size for fluke caught by recreational fishermen by a half inch to 17 ½" (322 CMR 6.09);**

***Loligo* Squid**

7. **DMF enacted a 2,500-lb. *Loligo* squid daily trip limit for mobile gear when 80% of any quarterly quota has been reached (322 CMR 6.39).**

Groundfish

8. **DMF created a groundfish endorsement that authorizes certain state permit holders to commercially fish in state waters for cod, haddock, pollock, redfish, white hake, yellowtail flounder, winter flounder, windowpane flounder, American plaice, witch flounder and monkfish (322 CMR 7.01);**

9. **DMF took emergency actions to complement actions taken at the federal level under the Northeast Multispecies Fishery Management Plan:**

a) increased minimum size for cod caught by recreational fishermen fishing in the Gulf of Maine to 24" – a 2" increase (322 CMR 6.03);

b) prohibition on possession or landing of cod harvested from the Gulf of Maine during November through March by for-hire vessels (322 CMR 6.03); and

c) year-round yellowtail commercial trip limit of 250-lbs. per trip (322 CMR 6.03).

Note that unlike the previous three emergency actions, the following emergency action taken by DMF does not complement recent federal rule changes made under Framework Adjustment 42 to the Northeast Multispecies Fishery Management Plan:

d) limit of 2-cod per person not to exceed 75-lbs. per vessel for recreational fishermen fishing from shore or aboard private vessels in the Gulf of Maine during November through March. DMF and the MFC determined that a complete prohibition on fishing by private anglers during the winter and spring months was not necessary to meet the Gulf of Maine's targeted catch reduction (322 CMR 6.03); and.

Spiny Dogfish

10. **DMF finalized a 2,000-lb. trip limit for spiny dogfish on November 10th for the remainder of the 2006/2007 Period II fishery (Nov-Dec) or until the quota available to Massachusetts is harvested (322 CMR 6.35).**

Northern Shrimp

11. **DMF finalized a 151-day commercial fishing season for Northern shrimp starting December 1st and running through April 30th (322 CMR 5.00).**

Fish Pots

12. **DMF finalized the following ASMFC approved specifications for all fish pots fished in waters under the jurisdiction of the Commonwealth (322 CMR 6.12):**

a) at least two escape vents in the parlor section of the pot; and

b) an increase in the minimum size of circular escape vents for pots used to harvest black sea bass from 2 3/8" to 2 1/2" (pots used in the scup fishery would retain the status quo 3.1" circular escape vent minimum size).

Lobster Trawls & Gillnet Gear

13. **DMF, in compliance with ASMFC, prohibited any person from fishing, storing, or abandoning any fixed fishing gear in waters under the jurisdiction of the Commonwealth with positively buoyant groundline (lines connecting traps in a string and lines connecting gillnets to anchors).** Any recreational or commercial fishermen using fixed gear will be required to use negatively buoyant groundline Negatively buoyant groundline is defined as line that has a specific gravity greater than that of seawater, 1.03, and does not float up in the water column.

INSIDE...

Surfers • Surfers • Surfers

This Newsletter and Other Information is available at our Web Site!

http://www.mass.gov/marinefisheries

DMF NEWS

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MarineFisheries receives state and federal funds to conduct research, management and development of the Commonwealth's marine fishery resources. Information in this publication is available in alternative formats.

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