

Published quarterly by the
Massachusetts Division of
Marine Fisheries to inform
and educate its constituents
on matters relating to the
conservation and sustainable
use of the Commonwealth's
marine resources.

DMF NEWS

Fourth Quarter 2004 - First Quarter 2005 • Volume 25



Marine Fisheries

A Commonwealth of Massachusetts Agency

Mass. Recreational Saltwater Anglers Exceed 1 Million

Over 1 million anglers participated in Massachusetts recreational saltwater fishing in 2004 - testimony to the top-notch quality and diversity of saltwater fishing in Massachusetts. This is 150,000 more participants than in 2003.

Reaching 1 million anglers is the culmination of yearly increases in participation that began in the early 1980's (see figure). The increase has been seen across all sectors: coastal residents (550,000 anglers), inland residents (150,000 anglers), and non-resident visitors (350,000 anglers).

Massachusetts now joins an elite handful of coastal states that can boast of saltwater recreational fisheries exceeding 1 million anglers. And of this group, Massachusetts has the shortest fishing season. Truly impressive numbers for a seasonal fishery!

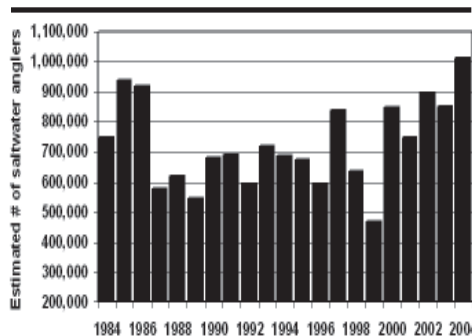
A 1998 study by the National Marine Fisheries Service concluded that Massachusetts saltwater anglers spent almost 1 billion dollars pursuing their sport. That study was based on 650,000 anglers. Since we now have greater than 1 million anglers, we can extrapolate that expenditures for saltwater recreational fishing are now **well over 1 billion dollars!**

The waters off Massachusetts are home to a large number of fish species owing to our unique geographic position at the convergence of three major ecological zones: the Gulf of Maine, Georges Bank, and the Mid-Atlantic/Southern New England Bight. Most of the popular recreationally-caught fish species have shown significant increases in abundance in recent years. Striped bass, scup, cod, haddock, fluke, bluefish, and black sea bass showed up in tremendous numbers in 2004, along with increasing numbers of more southerly residents such as false albacore, bonito, Spanish mackerel and weakfish.

In 2004, saltwater anglers made over 4.5 million fishing trips and caught over 16 million fish (not including the ones that got away.) A total of 25 species was caught, the most frequent being striped bass (6.2 million fish), scup (2.7 million), bluefish (1.9 million), cod (1.2 million), dogfish (0.8 million), Atlantic mackerel (0.7 million), and fluke (0.7 million). Two-hundred forty-two anglers submitted qualifying fish for the Massachusetts Saltwater Derby, and two state records were set (see related story).

Improvements in fisheries management on the state, regional, and federal levels management, have resulted in Massachusetts having some of the finest saltwater fishing in the country, providing hours of recreation to residents and visitors alike!

by Michael Armstrong, Ph.D.



Annual number of recreational saltwater anglers in Massachusetts.

Two public hearings have been scheduled:

- ❖ Monday, March 21 (7PM) at the Plymouth South Middle School (488 Long Pond Rd., Plymouth) and
- ❖ Tuesday, March 22 (7PM) at the Annisquam River Marine Fisheries Station (30 Emerson Ave., Gloucester).

Scheduled for March 29, 2005

Marine Fisheries seeks comments on several proposed measures and a public petition pertaining to the management of the commercial striped bass fishery (322 CMR 6.07 and 7.01). **The proposals are:**

- 1. Lower the daily possession limit through the following options:**
 - a. DMF proposal to drop from 30 fish to 20 fish per vessel; or**
 - b. Public petition to drop from 30 fish to 20 fish per vessel except on Sundays and the opening day of the season when the limit would be 10 fish;**
- 2. DMF proposal to reduce the number of open fishing days per week (currently set at Sunday-Wednesday) from four to three; Comments will be accepted regarding which days of the week would be open;**
- 3. DMF proposal to prohibit commercial striped bass fishing aboard vessels engaged in for-hire recreational fishing;**
- 4. DMF proposal to allow dealers to sell during April through November striped bass legally caught and documented from out-of-state. Whole fish would have to conform to the Massachusetts 34" minimum size and bear an official tag designating state of origin. This proposal does not alter the existing rules governing imported striped bass during December through March.**
- 5. DMF proposal to open the commercial fishery on July 10.**

A public hearing has been scheduled for:

- ❖ Tuesday, March 29, 2005 (7PM) at the Plymouth Community Intermediate School (117 Long Pond Rd., Plymouth, MA 02360).

Contact DMF for draft regulations and further details or visit our website at www.mass.gov/marinefisheries.

Regulations Update

During the period October 2004 through March 2004, the following regulatory changes were enacted by DMF after public hearings and Marine Fisheries Advisory Commission (MFAC) approval.

Dealer reporting requirements were expanded consistent with federal regulations for any purchases of fish directly from commercial fishermen (322 CMR 7.07).

Confounded regulations governing the use of rockhoppers were corrected to reflect the current 12" minimum size (322 CMR 8.04 & 8.11).

An annual specification process was adopted for the implementation of yearly regulations in the northern shrimp fishery as approved by the Atlantic States Marine Fisheries Commission (ASMFC) (322 CMR 5.00). The fishery commenced on Sunday, December 19TH and ran through the 23RD, Sunday through Thursday. The fishery reopened for December 26TH – 30TH, Sunday through Thursday; and is now in its third period from January 3RD through March 25TH, Monday through Friday.

Circular escape vents were increased to 2 5/8" in lobster traps fished commercially in LCMAs 2, 3, and Outer Cape Cod and recreationally in the Southeastern Recreational Lobster Area (322 CMR 6.02). This was a compliance measure with Addendum IV to the Interstate Fishery Management Plan.

Lobster minimum size limit was increased by 1/32" annually over the next four years for Area 3 permit holders. First increase will be on July 1, 2005.

Actions were taken to complement federal groundfish regulations adopted as part of Amendment 13 including (322 CMR 6.03): amended commercial cod possession limits of 800/1,000 lbs. north/south of the Cape; lowered recreational size limits of 22" for cod and 19" for haddock; implemented 36" commercial and recreational halibut minimum size and 1 halibut/vessel/day commercial possession limit and 1 halibut/person/day recreational possession limit; seasonal yellowtail trip limits establishing a 250 lb. daily limit during the months of April through May, and October through November and a 750 lb. daily limit during the months of June through September, and December through March.

Use of raised footrope trawls was extended into the Cape Ann Whiting Area during September (322 CMR 3.04 & 8.07), complementing federal regulations in adjacent waters.

A November 4, 2004 control date was established for all hook gear fisheries, including striped bass (322 CMR 6.07 & 7.04). This date will sunset on November 4, 2006, should no management measures have been developed by then in association with this control date.

Gear restrictions in the Cape Cod Bay Critical Habitat were extended by fifteen days from April 30TH to May 15TH to complement federal regulations in adjacent waters (322 CMR 12.05).

Notice of Public Hearings Scheduled for March 21 & 22, 2005

Under the provisions of M.G.L. Ch 30A and pursuant to the authority found in M.G.L. Ch. 130 ss. 17, 17A, 80, 100A and 104, Division of Marine Fisheries (DMF) and the Marine Fisheries Advisory Commission (MFAC) have scheduled hearings on the following regulatory proposals:

1. DMF proposal to prohibit finning of spiny dogfish (322 CMR 6.35); and establish a declaratory process for enacting annual specifications consistent with the interstate plan;
2. DMF proposal to amend winter flounder recreational seasons and daily catch limits to comply with the interstate plan. In waters north of Cape Cod, the limit would be 8 fish per person year-round; south of Cape Cod the limit would be one of the following:
 - a. 2 fish per person with no closed season;
 - b. 6 fish per person with a 10 mo. season (March -April closure);
 - c. 10 fish per person with a 2 mo. season (May – February closure);
3. DMF proposal to enact more consistent statewide regulations governing the taking of river herring east of the Connecticut River watershed (322 CMR 6.17). These including a 12-fish per person daily possession limit, no-fishing days, restriction on method of harvest, and a prohibition on the sale of river herring;
4. DMF proposal to establish area-specific commercial sea herring fishery limits and a process for annual specifications and in-season adjustments to conform with the interstate and federal plans (322 CMR 9.00);
5. DMF proposals to amend commercial scup and summer flounder possessions limits. Limits for trawlers would be increased from 300 to 400 lbs. during squid season and through the directed summer flounder season until the annual scup quota is reached; for all other gears the limit would be increased from 100 to 200 lbs. during May through July (322 CMR 6.28);
6. DMF proposals to amend commercial fishery summer flounder restrictions (322 CMR 6.22), including:
 - a. an increased commercial trip limits for summer flounder during the spring/summer season from 300 lbs. up to a higher level ranging from 350 to 500 lbs. per day;
 - b. an amended commercial fishery season start date to begin earlier than the current June 10TH start date with possible start dates ranging as early as May 15; and
 - c. amendments to the no-fishing days;

Comments will be accepted on a public petition to increase from 200 to 300 lbs. the summer flounder trip limit during the spring/summer season for fishermen using hook gears;
7. DMF proposal to amend trawl mesh regulations (322 CMR 8.07, 8.08, and 6.22) by establishing the end of the “squid season” as June 7TH. Also the allowance for 4 1/2” mesh during June – October 31 would be eliminated. □
8. DMF proposal to amend recreational scup, black sea bass and fluke restrictions to comply with the interstate plan (322 CMR 8.06), including:
 - a. a 25-scup possession limit for recreational anglers fishing from shore and aboard a private vessel, with a 50-scup per day limit aboard private vessels with two or more persons aboard;
 - b. a 60-scup possession limit per day for recreational anglers fishing aboard for-hire vessels for 60-days of the recreational season; and
 - c. a 25-scup possession limit per day for recreational anglers fishing aboard for-hire vessels during the remainder of the recreational season.
 - d. an increase in the recreational scup minimum size from 10" to 10.5";
 - e. an increase in the recreational fluke minimum size from 16.5 to 17";
 - f. an elimination of black sea bass recreational fishery closed seasons.
9. DMF proposal to prohibit commercial fishing by persons aboard vessels engaged in for-hire recreational fishing (322 CMR 7.01).
10. Take comments on recent emergency action to prohibit the taking of white sharks in state waters and a DMF proposal to complement federal prohibition on taking of basking sharks dusky sharks, and sand tiger sharks (322 CMR 6.37);

Continues, next page

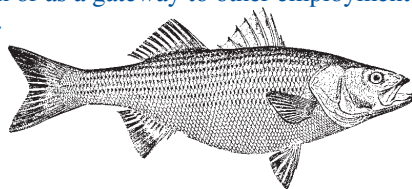
A Course of Action for the Commonwealth's Striped Bass Fishery - continuing the tradition of open access.

Proposed rules governing the 2005 commercial bass season are being formulated under policies drafted by *Marine Fisheries* and the Marine Fisheries Advisory Commission.

The fishery dates back to colonial times and has been conducted over an uninterrupted time series longer than any other striped bass fishery in the nation. It is the Commonwealth's policy that this fishery will continue to make fresh wild-caught striped bass available to end users during the time fish are abundant in our waters and in a manner that maximizes product marketability. Specific management goals include halting decline in ex-vessel prices, conducting longer fishing seasons, creating less market glut, allowing unlimited entry to the fishery, and maintaining fishing opportunity for all participants.

Each year, rule amendments are considered that might enhance fishery performance, governing the times and quantities of fish that may be taken. Increased daily landings (fishery-wide) have resulted in an ever-shortening commercial season. Recently there has been substantial debate about effort controls (permit limits) to constrain participation - and landings- in the fishery.

Under new policies being crafted for 2005, open access participation in the fishery will be preserved. An historical review of the commercial bass fishery during the last half-century has shown that the bass fishery has been the domain of small-scale commercial fishery operators, and the fishery has supported those who may be interested in pursuing fishing as an occupation or as a gateway to other employment in the marine economy.



Marine Fisheries Weighs Changes to River Herring Regulations

Each spring thousands of river herring (alewives and blueback herring) migrate into Massachusetts' coastal waters and run up streams for the purpose of spawning. Over 100 separate river herring runs have been documented by *Marine Fisheries* staff. They are an important part of the marine and freshwater ecosystems and *Marine Fisheries* has invested a great deal of time and money in monitoring and restoring the populations. In many runs, river herring are harvested for use as striped bass bait and for human consumption. Unfortunately, poaching of river herring is a problem in many of our coastal streams.

In recent years, river herring populations in Massachusetts have been showing signs of decline. Estimates of abundance from a number of key runs have reached relatively low levels (see figure). Other information collected from field observations, town officials, and other state agencies also indicates declines in many of our river herring runs. While river herring populations tend to be cyclical and have exhibited declines in the past, the current declines appear to

Resurgence of the resource has changed today's characterization of the striped bass fishery so that it differs significantly from that of the past. Commercial fishing for stripers was once considered a part-time activity primarily conducted by a core group of fervent (recreational) anglers. A similar core group still exists but now the fishery also involves a number of full-time fishermen who typically take part in multiple fisheries to make a year's salary. Additionally, the commercial fishery attracts thousands of participants lured by the idea of subsidizing an expensive hobby or the possibility of creating discretionary income.

Despite the flourishing of both commercial and recreational fisheries, the two sectors no longer blend as they once did. In fact differences between commercial and recreational participants are often stark and opinions over what public policies should be applied to striped bass fisheries spark intense debate.

Working with the Massachusetts Marine Fisheries Advisory Commission, *Marine Fisheries* is proposing rules for the 2005 fishery and beyond (see public hearing notice section) with objectives that are attainable and consistent with current policy:

- Conduct the fishery without limited-access policies;
- Conduct the fishery without demarcation of participants based on levels of experience or past performance in the fishery;
- Redefine permit categories that increase fees;
- Differentiate fees between resident and non-resident participants;
- Prohibit sale of striped bass caught by persons while engaged in for-hire fishing;
- Lower daily possession limits;
- Reduce number of fishing days; and
- Enhance marketability of out-of-season imported bass to increase demand and in-season ex-vessel prices.



be more persistent and have created greater concern. Factors controlling the abundance of river herring populations are complex and not completely understood. Possible causes of the recent declines in abundance may include over harvest (both legal and illegal removals), natural environmental changes leading to poor recruitment, by-catch in offshore trawl fisheries, increasing natural mortality (e.g., predation by striped bass), poor passage in the streams, and degradation of the spawning habitat. *Marine Fisheries* has initiated studies to explore the cause of the declines, which may be a combination of these factors.

In response to population declines, *Marine Fisheries* is going to public hearing with a proposal to implement some changes in regulations that will help conserve populations (see public hearing notice in this issue). The proposals include lowering the daily bag limit from 25 to 12 fish and to prohibit the sale of river herring. The lowered bag limit will decrease the legal harvest from the runs while the prohibition on sale will remove the motivation for poaching. These changes will affect both state and town managed runs. We look forward to hearing your opinion on this issue.

by Michael Armstrong, Ph.D.

Massachusetts Saltwater Fishing Derby 2004 Awards

Marine Fisheries Director Paul Diodati and Fish and Game Commissioner David Peters presented awards for the 2004 Massachusetts Saltwater Fishing Derby on February 13, 2004 at the Eastern Fishing and Outdoor Exposition in Worcester, MA. Anglers from ten different states entered over 25 different species in the derby, including the first ever porbeagle shark. Two new state records were also established this year. Clifford Halik of Nantucket, MA landed a 414 lb. porbeagle shark on August 26TH; and R. Keith Allison of Onset, MA caught a 548 lb. thresher shark on July, 17TH. Other notable catches were a 14 lb. fluke, a 209 lb. halibut and a 502 lb. swordfish.

Marine Fisheries conducts the Derby each year during March 1 through November 30. To be eligible, entries must be caught by hook and line in state waters, or first landed in a Massachusetts port, and must be measured and weighed at a *Marine Fisheries*-certified weigh station. At the end of the derby year, trophies are awarded to the anglers who landed the heaviest fish in each species' category. This year, *Marine Fisheries* awarded engraved silver-plated Paul Revere bowls to 42 winning participants in three divisions – men, women and juniors (age 15 and younger).

For further information on the Derby visit www.mass.gov/marinefisheries.



Photo courtesy of Kitty Kania

Kitty Kania and her 303 lb. 5oz. winning Mako shark.

Species	Minimum Entry Weight	State Record	Division	Name	Winning Weight
Albacore	30 lbs.	65 lbs.	Men	Gene Sartini	54 lbs. 8 oz.
Black Sea Bass	4 lbs.	8 lbs.	Junior	Moirra Gannon	5 lbs. 2 oz.
Black Sea Bass			Men	Jeff Capute	5 lbs. 10 oz.
Black Sea Bass			Women	Patricia Wasierski	5 lbs. 10 oz.
Blue Shark	250 lbs.	454 lbs.	Women	Marcia Kane	410 lbs. 6 oz.
Bluefish	12 lbs.	27 lbs. 4 oz.	Junior	Damien Dmitruk	20 lbs. 1 oz.
Bluefish			Men	Tom Clancy	16 lbs. 2 oz.
Bonito	5 lbs.	13 lbs. 8 oz.	Junior	Zachary Margulies	7 lbs. 11 oz.
Bonito			Men	Patrick Jenkinson	9 lbs. 2 oz.
			Women	Bonnie Brooks	7 lbs. 8 oz.
Cod	30 lbs.	92 lbs.	Junior	Brooke Miles	35 lbs. 6 oz.
			Men	Charles Ferguson	67 lbs. 2 oz.
			Women	Diana Allamby	51 lbs. 4 oz.
Dolphin	15 lbs.	38 lbs. 8 oz.	Junior	Cooper Taymore	19 lbs. 5 oz.
False Albacore	10 lbs.	19 lbs. 5 oz.	Men	Joseph Correia	12 lbs.
			Women	Kitty Kania	10 lbs. 14 oz.
Fluke	7 lbs.	21 lbs. 8 oz.	Junior	Douglas Frazer	12 lbs. 13 oz.
			Men	Gary Ritz	14 lbs.
			Women	Heather Chicoine	7 lbs. 12 oz.
Haddock	8 lbs.	20 lbs.	Junior	Matthieu Aubuchon	8 lbs. 1 oz.
			Men	Anthony Fugate	13 lbs. 12 oz.
Halibut	50 lbs.	321 lbs.	Men	Ben Dixon	209 lbs.
Mackerel	2 lbs.	3 lbs. 8 oz.	Men	Brett Bongazone	2 lbs.
Mako Shark	150 lbs.	1,324 lbs.	Men	Tommy Acciavatti	340 lbs.
			Women	Kitty Kania	303 lbs. 5 oz.
Pollock	20 lbs.	48 lbs. 2 oz.	Junior	Steven Sochocki	36 lbs. 8 oz.
Porbeagle Shark	150 lbs.	414 lbs. New Record	Men	Clifford Halik	2 lbs. 14 oz.
			Men	Jeff Capute	4 lbs. 2 oz.
			Women	Cludia Pina	2 lbs. 4 oz.
Spanish Mackerel	5 lbs.	6 lbs. 12 oz.	Junior	Jordan Terry Angelos	5 lbs. 8 oz.
Striped Bass	35 lbs.	73 lbs.	Junior	Thomas Hulley	40 lbs.
			Men	Jack Browne	61 lbs.
			Women	Marriane Laforest	49 lbs. 5 oz.
Swordfish	150 lbs.	646 lbs.	Men	Jonathan Wietecha	548 lbs.
Tautog	8 lbs.	22 lbs. 9 oz.	Junior	Wade Henderson	10 lbs. 10 oz.
			Men	Tom Armstrong	11 lbs. 10 oz.
Thresher Shark	200 lbs.	548 lbs. New Record	Men	R. Keith Allison	548 lbs.
Wahoo	30 lbs.	92 lbs.	Men	Dennis McGillicuddy	89 lbs. 5 oz.
Weakfish	8 lbs.	18 lbs. 12 oz.	Men	William Simpson	9 lbs. 5 oz.
Winter Flounder	3 lbs.	8 lbs. 2 oz.	Men	Brian McCusker	4 lbs. 7 oz.
Wolffish	20 lbs.	55 lbs. 8 oz.	Men	Daniel Rochford	25 lbs. 3 oz.

2005 Saltwater Sport Fishing Guide Now Available!

The Massachusetts Division of Marine Fisheries has produced this year's edition of our Saltwater Sport Fishing Guide (SFG). As in previous years, the guide contains current information on boat-launch sites, tackle shops, charter and party boats, fish profiles, and fishing tournaments to assist you in enjoying our spectacular array of fishing opportunities from shore or by boat. The guide has a long successful history; it has been a traditional publication of our agency for over 20 years.

Designed to provide basic information about the Commonwealth's recreational fishing opportunities, the Sport Fishing Guide is a useful tool for the novice or visiting angler to become acquainted with what Massachusetts has to offer, although many long-time resident anglers call for it regularly.

Please contact one of our offices for a copy of the Guide, or you can download a copy from our website (www.mass.gov/marinefisheries). Those interested in listing their business in the next SFG should contact John Chisholm at 508.910.6329 or John.Chisholm@state.ma.us.

Massachusetts Saltwater Recreational Fishing Guide



Photo courtesy of Randy Sigler

Marine Fisheries

Brooke Miles with her winning 35 lb. 6 Oz. Cod.

Photo courtesy of the Miles family

Proposed Federal Whale Rules on the Horizon ...



Draft Environmental Impact Statement details new whale-safe gear proposals

After two years of preparation, NOAA Fisheries has revealed new proposals to reduce entanglements of large whales. Hearings are scheduled in Massachusetts in late March. With the help of the Atlantic Large Whale Take Reduction Team, these proposed amendments are intended to reduce mortalities and serious injuries to right, humpback, fin and minke whales in U.S. waters.

These changes would revise the federal Take Reduction Plan, a plan that dates back to 1997 and includes regulatory and non-regulatory programs, including gear modifications, time-area closures, expanded disentanglement efforts, extensive outreach efforts in key areas, gear research, and an expanded right whale surveillance. *Marine Fisheries* has played a prominent role in development of the federal plan since it was based largely on the state's own Conservation plan that was developed in 1996.

Fishermen should pay close attention to these proposed amendments since the Marine Mammal Protection Act rules affect **all** commercial fishermen fishing in both state and federal waters – even those who do not have a federal permit. While the Commonwealth could be more restrictive than federal whale protection rules, it can't be less restrictive. The scheduled hearings are designed to take comments on the Draft Environmental Impact Statement, a stunningly comprehensive 783 page document that presents six alternatives (status quo and 5 new scenarios).

The most substantive change proposed is the requirement by 2008 that lobstermen and gillnetters use "non-buoyant" (sinking groundline) in broad areas where floating line is allowed now. Massachusetts lobstermen in Cape Cod Bay have already switched over to sinking line in 2001, and many of the non-Cape Cod Bay lobstermen recently have replaced their line capitalizing on the "floating line buyback" spear-headed by the International Fund for Animal Welfare (IFAW) this past winter. The most contentious debate is expected regarding how far the floating line prohibition extends. Will it extend throughout the U.S. range of the right whale from Maine to Florida? And are there logical areas (inshore or very deep offshore waters) to exempt where large whales are not expected to occur?

These proposals could eliminate the so-called DAM closures. For the past four years lobstermen and gillnetters have been required to remove their gear – on short notice – from areas and during times that three or more right whales were seen aggregated. These closures have been unpredictable and disruptive but were considered the best way to allow fishermen flexibility to continue fishing while dodging requirements to modify their gear. Finally, proposals may extend current gear restrictions beyond lobster gear and gillnets to include other similar gears, such as hagfish pot, fish pot, crab pot, and conch pot.

- Monday, March 28, 2005 Plymouth, MA (6 - 9 PM)
Radisson Hotel - Plymouth Harbor
180 Water Street, Plymouth, MA 02360
- Thursday, March 31, 2005 - Gloucester, MA (6 - 9 PM)
Massachusetts Division of Marine Fisheries
30 Emerson Avenue, Gloucester, MA 01930



by Stephanie
Cunningham

Stubby Knowles, Gloucester Shellfish Officer Remembered

Robert “Stubby” Knowles, the City of Gloucester’s first and only shellfish officer, died peacefully in his sleep this past November at the age of 71. The citizens of his beloved Gloucester and the state environmental community remember Stubby as an environmental steward, watchdog, and visionary.

I will never forget the first time I met Stubby. As a new biologist with *Marine Fisheries’* Shellfish Project, I had been called to investigate the grounding of a fishing vessel in the Annisquam River. There had been reports that fuel leaking from the vessel may have contaminated nearby shellfish beds. When I arrived, I saw a gruff man, short of stature, dressed in green hip boots, khakis, and a flannel shirt. His green shellfish officer’s cap pulled low, the man greeted me with a “Hiya, I’m Stubby. Jus’ follow me and watch whe-ah you’re walkin’.” He ushered me out across the marsh onto a broad clam flat within sight of the grounded vessel. He then reached for the clam fork I was carrying, bent down, and easily flipped the mud over to expose a row of white-shelled clams. The next thing Stubby did still surprises me. He reached down for a clam, pulled out a knife and shucked open the clam. In one motion, he slid the clam out of its shell and into his mouth. He swished the clam around for a few seconds and spat it out onto the mud. “Ah,” he said, “Didn’t get this far.” He reached down for another clam and said, “You ready to try?” I had known Stubby only 20 minutes and already he had taught the new “scientist” a lesson. You don’t need a high priced laboratory to calibrate your taste buds.

Shortly after our first meeting, I was asked to be the Shellfish-Growing-Area Biologist for Gloucester. I ended up working side-by-side with Stubby for the next 15 years, almost half of his 33-year career as Gloucester’s Shellfish Officer. During that time, his dogged persistence made the City of Gloucester’s sewer system expansion a water quality success. Together, we walked every inch of Gloucester’s 50 plus miles of shoreline – some areas more than once. He would greet me at dawn with a “Hey there, Lady” and off we’d go.

Stubby was relentless in tracking down and eliminating pollution sources. He would try out new techniques and technologies such as using optical brighteners from laundry detergents to trace sewage discharges or treating storm water with vegetated filter systems. And he was always collecting water samples. There have been more samples run through our agency’s North Shore Shellfish Laboratory for the City of Gloucester than for any other North Shore community, a testimony to Stubby’s perseverance. As a result, almost all the shellfish beds from the Little River north to Annisquam Light are open to direct harvest, making the City of Gloucester one of only two cities in the state with a recreational shellfish harvest.

The City of Gloucester’s loss extends beyond its coastal waters. Stubby fiercely policed the city’s clam flats, checking clammer’s licenses and patrolling closed areas for “boot-leggers.” “He could be tough when he had to,” recalled David Sargent, environmental officer for the Gloucester Health Department. He is even known for having busted the man who appointed him to his job for possession of undersized clams.

Another of Stubby’s passions was devising innovative and effective ways of protecting and rearing seed clams. He ingeniously used the burlap bags that clammers use to carry their catch for constructing nets to cover newly seeded clam-flats, protecting them from green crabs and other predators.

Also the city’s Herring Warden, Stubby was determined to preserve the alewife run in the Little River not far from his doorstep. The Massachusetts Riverways Program called the Little River alewife run “a tribute to the years of stewardship and dedication of Robert ‘Stubby’ Knowles.” In the 1980’s, few fish were returning to the river. According to Sr. Marine Fisheries Biologist and Anadromous Fish Project Leader, Phil Brady, Stubby went to work, tirelessly persuading and assisting *Marine Fisheries* in stocking over 12,000 alewives to the Lily Pond/Little River system from 1989 to 2004. In 1999, Stubby facilitated repairs to the Little River fish ladder and installation of a new Denil fishway at Lily Pond with technical assistance from *Marine Fisheries* and a grant from the Mass Bays National Estuarine Program.

Alewives weren’t the only fisheries resources in the Little River system to fall under Stubby’s careful stewardship. He meticulously maintained passage for rainbow smelt and American eel, clearing brush and debris from the channel and even grooming the rocks at the head of the river to improve staging habitat. “Those little fish, you hardly ever see ‘em,” Stubby said at the time in a Boston Globe interview, “But think of all the things that feed on them. It always seemed obvious to me as a kid that everything is connected to everything else. Everyone is everyone else’s dinner.”

A life-long Gloucester resident, Stubby’s influence went far beyond the boundaries of Cape Ann and his official city duties. Over the years, he was recognized repeatedly for his many accomplishments. He was a recipient of the Gulf of Maine Council’s *Visionary Award* for his commitment to environmental protection and volunteerism; and, recently, he was featured in the Eight Towns and the Bay’s educational video *Voices of the Great Marsh* as a “shellfisherman and an activist.” In 2000, he was the recipient of the first “Shellfish Officer of the Year” award granted by The Massachusetts Shellfish Officers Association.

The last time I saw Stubby was in my new role as part of *Marine Fisheries’* Environmental Review Project. We met over a failing piece of fringe marsh, a tiny oasis surrounded by floats and bulkheads. His greeting this time was a “Hiya, Old Girl. What d’you think about this?” For a moment, I was inclined to say we may want to cut our losses and look to more productive habitat improvements on site. But I stopped myself. He had taught me many lessons over the years. Stubby wouldn’t underestimate the importance of something so seemingly small. We would find a way to preserve the function and value of this sliver of marsh that was providing essential shelter and forage habitat in a dwindling environment. And, this time, when I turned to look at the man in the khakis, flannel shirt, and long brimmed cap, I saw a giant.

“You’ve got to look at the whole picture, as a marsh being a part in the whole scheme of things. Everything relies on each other. The fish rely on the marsh. The health of the human being relies on the marsh...”

— Robert “Stubby” Knowles,
from
Voices of the Great Marsh



impacts to these resources and the resource-based economy of the region. Further information for all sites is needed to better characterize, among other concerns, marine resources, habitat functions and values, and water flow and sediment transport. Additional information would aid in consideration of potential cumulative impacts as a result of other proposed projects along the Cape and Islands.

Marine Fisheries' complete comment letter can be viewed at our website: www.mass.gov/marinefisheries.

The DEIS/DEIR continues to undergo extensive review by the Corps and Massachusetts Executive Office of Environmental Affairs. The DEIS/DEIR and further information on the Corp's review are available at:

www.nae.usace.army.mil/projects/ma/ccwf/deis.htm.

Secretary Herzfelder's final determinations on the DEIR, once made, will be available at:

www.mass.gov/envir/mepa/secondlevelpages/recentdecisions.htm.

by Vin Malkoski

Dr. Kevin Stokesbury Receives 2004 Belding Award

At the October 7TH Business Meeting, the Massachusetts Marine Fisheries Advisory Commission (MFAC) voted to award the 2004 Belding Award to Dr. Kevin Stokesbury. Created in 1989, the Belding Award is given annually to the individual who, in the opinion of the MFAC, has done the most to promote conservation and sustainable use of the Commonwealth's marine resources.

An Assistant Professor at University of Massachusetts - Dartmouth's School for Marine Sciences and Technology (SMASST), Dr. Stokesbury has proved instrumental in the revitalization of the commercial scallop industry in New Bedford (See "*Sea scallop management bolstered by innovative UMASS survey*" in *DMF News*, Third Quarter 2003). His work analyzing the effects of closed management areas on the harvested stocks of Georges Bank scallops, *Placopecten magellanicus*, has involved both physical and biological factors influencing the spatial distribution of sea scallops.

The award's namesake, Dr. Belding, was well known both to medical students and shellfish wardens in the first half of the 20TH century, as he conducted two distinguished careers simultaneously in medicine and marine biology. His work in marine biology became one of the cornerstones of today's Massachusetts Division of Marine Fisheries. The award was funded in perpetuity by Dr. Belding's family.

Belding Shellfish Reports Re-Published

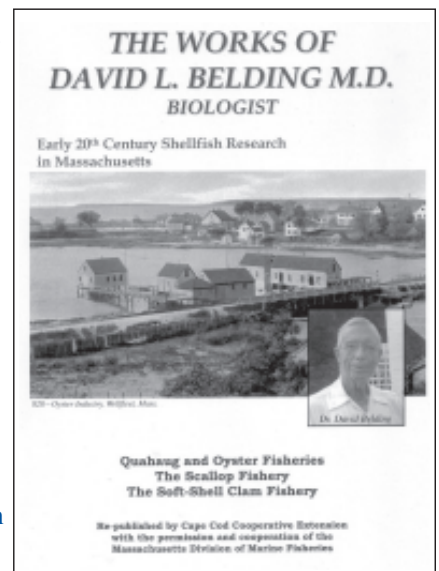
On February 16, 2005, the Barnstable County Commissioners presented Division of Marine Fisheries Director Paul Diodati with a copy of the newly re-published Massachusetts shellfish reports written by Dr. David Belding. This collection of three works, *The Quahaug and Oyster Fisheries*, *The Scallop Fishery* and *The Soft-Shell Clam Fishery*, were originally published between 1907 and 1910 by the Massachusetts Commissioners of Fisheries and Game as a result of investigations directed by the Massachusetts Legislature from 1905 through 1910. Today, many of Dr. Belding's observations and recommendations remain the basis of shellfish management decisions in this and other states.

The presentation was made at a special meeting of the Barnstable County Shellfish Advisory Committee in Hyannis.

In attendance were County Commissioners, Selectmen, Belding family members, Cape Cod Cooperative Extension Marine Program staff, Marine Fisheries Shellfish Program staff, Shellfish Constables representing all of coastal Massachusetts and members of the public.

These reports have been extremely popular among those who work in shellfish and particularly with individuals involved in all aspects of shellfish production and management in Massachusetts including scientists, managers, elected officials, shellfish constables, fishermen and aquaculturists. Since the original publication date, the reports have been updated and reprinted twice: in 1930 by the Commissioners of Fisheries and Game and once again in 1964 by the Division of Marine Fisheries. *Marine Fisheries'* supply of 1964 reprints has long been depleted. Meanwhile, new generations of shellfish managers and a burgeoning shellfish aquaculture industry have generated renewed interest in Belding's views on public and private shellfish propagation, management of the shellfisheries, history of the fisheries, shellfish biology and environmental requirements, pollution and habitat protection. Much of his work remains accurate sustaining these reports as a "must read" for anyone with an interest in Massachusetts shellfish management or aquaculture.

In preparing this special 2004 edition the Cape Cod Cooperative Extension, with agreement from *Marine Fisheries*, chose to present the material in its 1964 reprint format. The 2004 edition is available to the public at \$35.00 a copy and to Shellfish Constables and Selectmen at \$25.00 with an additional charge of \$5.00 per copy if shipping is required. To request a copy please contact the Cooperative Extension at (508) 375-6690 or at the Deeds and Probate Building in Barnstable.



Dr. David Pierce presents the 2004 Belding Award, a chelsea ship's clock, to Dr. Kevin Stokesbury (left).

DMF File Photo

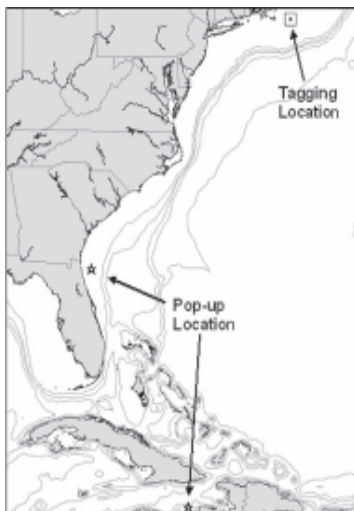
Basking Shark Tagging Update

In the last issue of *DMF News*, *Marine Fisheries* reported on a novel method for improving knowledge of endangered North Atlantic right whale (*Eubalaena glacialis*) movements and habitat use (see *Basking Sharks May Help Identify Unknown Right Whale Habitats* in *DMF News*, Second Quarter - Third Quarter 2004). *Marine Fisheries* biologists in collaboration with researchers Stephan Zeeman and Erin Estrada of the University of New England (UNE) are tagging basking sharks, *Cetorhinus maximus*, with high technology pop-up archival tags.

Basking sharks are often found in aggregations with right whales, feeding on the same dense patches of planktonic copepods, and it is likely that they exhibit the same seasonal movement patterns as the North Atlantic right whale. The multifaceted study, funded with a grant from the Massachusetts Environmental Trust, hopes to shed light on important questions of biology, distribution, migration, and essential habitat for both species and preliminary data is in.

Pop-up Archival Transmitting (PAT) tags used in this study collect temperature, depth, and light level data at user-defined intervals. At a time pre-programmed by the researcher, tags detach from the animal and float to the surface where data relays through an Argos satellite to the researcher. Tags not only provide fixed locations of animals at the time of pop-up, but researchers may also re-create dynamic movements of the shark based on light level data. In late September 2004, UNE and *Marine Fisheries* biologists tagged two basking sharks approximately 40 nautical miles east of Nantucket Island. The tags were applied by harpooner Captain Bill Chaprales from the F/V Ezydazit with the assistance of his spotter pilot Tim (Wilderness Dave) Voorheis.

On January 31, 2005, the tags detached from the sharks as scheduled, floated to the surface, and began transmitting four months of data. The recovered tags, despite being attached on sharks within four nautical miles of each other back in September, were found in January very far apart. One of the sharks traveled 870 nautical miles SW, about 30 nautical miles east of Jacksonville, FL where it spent most of its time in the surface waters. The other shark traveled over 1,400 miles SSE to an area between the Caribbean islands of Haiti and Jamaica. This latter shark is the first known record of this species in the Caribbean. Remarkably, this shark spent most of its time at depths in excess of 1,600 feet while in this area.



Over 1,400 miles separated one tagging site and pop-up location.

Map by Greg Skomal

It appears that the depth of these sharks is highly correlated with water temperature because both sharks preferred to remain in water that was 55-66°F, regardless of the location.

The early results from these two tags are both intriguing and encouraging. It appears that the deep waters of the Caribbean may be newly discovered over-wintering habitat of the basking shark. Will these data provide new insights into unknown winter migration patterns of the right whale? *Marine Fisheries'* efforts have just begun and the team is looking to tag another group of animals in 2005. We'll keep you posted.

by Gregory Skomal



Photo courtesy of Tim Voorheis

Cpt. Chaprales (on prow) uses harpoon to tag basking shark.

DMF Reviews Fishery Impacts of Proposed Cape Wind Farm

Projected to occupy 24 square miles of Nantucket Sound, the Cape Wind Energy Project would result in the construction and operation of 130 wind turbine generators on Horseshoe Shoal. The proposed alternative energy project continues to be under the local and even national spotlight, as a wide range of constituents from area residents, environmental groups, and industry representatives add to the discussion surrounding state and federal permitting reviews.

The Army Corps of Engineers, the federal agency with lead jurisdiction, released a Draft Environmental Impact Statement (DEIS) in November of 2004, which also served as the Draft Environmental Impact Report (DEIR) for the necessary state MEPA review. In keeping with *Marine Fisheries'* mission to manage and protect the Commonwealth's marine resources, staff biologists reviewed the Cape Wind DEIS/DEIR to evaluate its potential impacts and provided comments to the Corps and Secretary of Environmental Affairs.

Nantucket Sound provides very important feeding, spawning, and/or nursery grounds for many species of finfish and invertebrates, including bluefish, striped bass, scup, summer flounder, winter flounder, black sea bass, tautog, squid, and whelks. Further, historic migration patterns suggest that spawning and juvenile development activities in the Sound may impact abundance levels for some species as far down as the mid-Atlantic. Commercial and recreational fishing in Nantucket Sound provides significant revenue to the local economy and is an integral, indeed traditional, part of life in many Cape Cod and Island towns.

As a result of our review, *Marine Fisheries* is concerned about the possibility of significant impacts to fisheries resources, habitat, and harvest activities in Nantucket Sound. *Marine Fisheries* has recommended that applicants provide additional information to effectively evaluate potential

aquatic disciplines will be welcomed (e.g./ SCUBA divers, snorkelers, kayakers, and shoreline assistants). In addition, *MarineFisheries* hopes to collaborate with local schools to augment planting opportunities by rearing eelgrass from seeds. Volunteer opportunities can be tracked on the Hubline link at our website (www.mass.gov/marinefisheries).

Habitat Enhancement

MarineFisheries will enhance key bottom sediments in Massachusetts Bay as a means of providing mitigation for the assumed biological impacts of the Hubline construction. A substantial amount of the impacted sediment along the pipeline footprint consists primarily of gravel, cobble, and boulders. This type of complex habitat provides critical relief and interstitial spaces to several life stages of commercially important species such as American lobster, winter flounder, sea scallops, sea urchins, and Atlantic cod. Numerous other species of fish, shellfish and invertebrates, important to local productivity and diversity, are also dependent on complex hard bottom.

The Habitat Enhancement Project consists of four phases: (1) experimental design, (2) site selection and permitting, (3) installation, and (4) monitoring. Reef composition and orientation, cobble/boulder arrangement within the footprint, and site location will address questions and concerns such as environmental variability and behavioral ecology. Control areas setup within the footprint will establish a comparison for effects due to reef presence. Furthermore, a natural “non-impact” control reef area will be identified nearby during the site selection process for evaluating the progress of the installed reef.

MarineFisheries has selected a design that will place an array of six 400 m² (10m x 40m) rectangular reefs and control sites within a total footprint area of 7,000 m². The actual reef area (2,400 m²) is twice the size of successful cobble reefs deployed in Boston Harbor, MA and Narragansett Bay, RI. Rocks varying in size from 6-25 cm cobble to 30-75 cm boulders will comprise each of the six reef structures in order to best accommodate multiple life stages of lobsters, finfish, and other benthic invertebrates. Rocks will be separated and arranged by size in a graduated fashion within each plot so that each rock size group will contribute equally to the total area.

Reef placement will occur in the corridor of habitat impacted by the Hubline construction, provided that all other site selection criteria are met; these include adequate depth, sediment type, bottom slope, current, post larval lobster settlement, user conflicts, accessibility, water quality, established fauna, flora, and habitats. MassGIS and existing databases from monitoring programs and surveys were used to identify prime areas for installation of the artificial reef. Four prime locations for potential reef sites were identified. Within these areas 24 sites near naturally occurring bedrock were selected. We are currently collecting data from all of these sites on slope, current speed and direction, bottom composition, species presence and absence, and depth. The final stage of the site evaluation process will be to confirm natural post-larval lobster delivery via deployment of settlement collectors at the final three possible reef locations. Once the collection of larval settlement data is complete, we will select one of the final three areas for installation of the reef.

Upon completion of the site selection process *Marine Fisheries* will contract a company to install the reef. Adherence to reef specifications will be confirmed via post-installation side-scan sonar and visual diver surveys. To evaluate the success of this project we will establish a structured monitoring program designed to characterize and track both post larval settlement populations of benthic invertebrates and finfish. Control sites on impacted and non-impacted substrates will also be monitored for comparison.

Innovative Lobster Survey using Ventless Traps

In the fall of 2004 *MarineFisheries* initiated a pilot ventless trap survey for American lobster in Massachusetts Bay. Stratified by depth and sediment type, this survey is designed to account for habitat effects on lobster spatial distribution. Such information will help to comparatively evaluate lobster abundance and size structure on the impacted HubLine pathway relative to non-impacted areas throughout Massachusetts Bay.

The survey was a cooperative venture between *Marine Fisheries* biologists and four commercial lobstermen who fished experimental ventless traps at pre-defined randomly-selected stations throughout Massachusetts Bay. Traps were constructed of 1-inch wire mesh and were fished in six-pot trawls with alternating vented and non-vented traps. A total of forty trawls were deployed and hauled twice per month in October and November resulting in a total of 936 trap hauls sampled during sixteen sampling trips. Over 8,000 lobsters were observed and as expected, catches were higher in the ventless traps where >90% of all lobsters caught were sub-legal. Smaller lobsters were observed more frequently in boulder and cobble habitat than in mud or sandy areas and were more common in shallow water than deep strata.

MarineFisheries will resume this survey in May 2005 and extend it across seasons.



Photo courtesy of Robert Stravinsky

DMF observer sampling lobsters caught in ventless trap.

Further Updates

Check back often for updates on Hubline project results and developments via our dedicated Hubline site on our webpage (www.mass.gov/marinefisheries).

by Bruce Estrella

HubLine Assessment, Mitigation and Restoration - an Update

Since 2004, *MarineFishes* has led work on HubLine assessment, mitigation, and restoration activities (see “HubLine Construction Impacts” in *DMF News*, Fourth Quarter 2003-First Quarter 2004.) Constructed by Algonquin Gas Transmission Company in Massachusetts Bay during 2002-2003, the “HubLine” natural gas pipeline runs 29.4 miles long from Salem/Beverly to Weymouth. Post-construction activities of the HubLine pathway are multi-faceted and are intended to both assess and mitigate impacts from construction and evaluate recovery while restoring habitat. To date *MarineFishes* has made several inroads along these objectives including acoustic and optical surveys, a ventless trap survey for American lobster, eelgrass restoration, and habitat enhancement.

Acoustic and Optical Surveys

Biologists have continued to deploy ROV's (Remotely Operated Vehicles) and towed sonar equipment to document the state of the back-filled trenches created along the pipeline pathway. The combination of these survey tools resulted in complete coverage of the back-filled trench across all depths. Countless sonar images were reviewed in order to evaluate sediment type and relief and to establish future sites for monitoring that are representative of various sediment types, topographical features, and depth along the pipeline pathway.

Eelgrass Restoration

The primary goal of *MarineFishes*' Eelgrass Restoration Project is to re-establish eelgrass in Boston Harbor as partial mitigation for assumed impacts to the environment from construction of the HubLine. Eelgrass meadows form the foundation for primary production in coastal marine ecosystems. They stabilize bottom sediments and serve as habitat for many life stages of numerous marine species. Unfortunately, loss of eelgrass habitat due to human impacts on the Massachusetts coastal marine ecosystem has been extensive. Once prolific, eelgrass meadows in Boston Harbor now can be found in only a few isolated locations.

Our Eelgrass Restoration Project efforts during 2004 focused on three major tasks: site selection, permitting, and planning for the spring '05 field season:

Site Selection. To select up to 10 potential transplant areas in Boston Harbor, our biologists evaluated available environmental data sets for the Boston area from various agencies and augmented these data with *in situ* environmental monitoring. A preliminary transplant suitability index (PTSI) was then generated from a suite of parameters including depth, sediment type, water quality, and northeast exposure (prevailing direction of winter storm winds)

The use of a MassGIS-based (geographic information system mapping software) model effectively focused the search for suitable sites. Possible donor sites north of the Harbor, between Nahant and Revere were also examined.

Staff surveyed and "ground-truthed" suitable sites identified by the model, and in some cases, eliminated them as potential planting sites when in the presence of a marina, high energy environment, or incorrect depth. The boat traffic associated with marinas makes transplanting impractical and potentially dangerous. Riprap reflects wakes generated in



A SCUBA diver assesses eelgrass.

shipping channels, creating energetic conditions unsuitable for eelgrass growth. Monitoring of potential sites will continue in spring '05.

“Groundtruthing” also included specification of depth adjusted for tides, sediment type, and bioturbator density (i.e./ animals detrimental to eelgrass stability). *MarineFishes* personnel collected sediment cores and counted bioturbator species such as green crabs and skates along two to three 50-meter transects per site (2m swath per transect). Sediment samples were dried and sieved to determine composition by weight and grain size.

Many sites contained very fine sediment grain size (silt and clay) with black anaerobic mud below ~2 cm. These observations of possible anoxic sediments, which can subject eelgrass to hydrogen sulfide toxicity, raised concerns about bottom sediment quality. This prompted us to plan contracted analyses of Total Organic Carbon (TOC) and pore water sulfide that will help refine transplant site selection processes. Harvesting at donor beds will begin later in the spring, followed by planting at the test sites.

Permitting. All necessary eelgrass restoration permits have been filed including Notices of Intent with the seven affected towns and DEP, the Army Corps of Engineers, Massachusetts Historical Commission, and Board of Underwater Archeological Resources. Throughout the permitting process *MarineFishes* presented information on our eelgrass restoration work to numerous Town Conservation Commissions.

Planning for spring '05 field season. Typically methods have been used to transplant eelgrass using modified lobster pots or frames. These are frames to which eelgrass shoots can be attached and deployed at sea with rhizomes in contact with the sediments. More lightweight TERF alternatives that are easier to deploy have been developed and prototypes soon will be tested in the field.

One new restoration technique being considered is the possibility of co-planting eelgrass with oysters. Oysters would help reduce siltation that has become a problem in the degraded Boston Harbor environment. This technique has been deployed in Chesapeake Bay but further research is ongoing on oyster filtration rates and their effect on water clarity.

MarineFishes will promote volunteer participation in the Eelgrass Restoration Project, not only for the practical help it will provide, but to create a sense of awareness and stewardship among local citizens about this valuable resource. Volunteers with skills in applicable aquatic or non-

INSIDE...

- c Massachusetts' 1 million rec. anglers
- c Hubline update
- c Basking shark tags reveal migrations
- c *Marine Fisheries*' comments on the Cape Wind Proposal
- c 2004 Belding Award and Reports
- c Federal hearings on whale-safe gear
- c Commonwealth's striped bass policy
- c March 21, 22, & 29 Public Hearings
- c New Regulations

Surfers•Surfers•Surfers

This Newsletter and Other

Information is available

at our Web Site!

<http://www.mass.gov/marinefisheries>

DMF NEWS

EDITORS: **Dan McKiernan**
David Pierce
Melanie Griffin

GRAPHICS: **David Gabriel**

Marine Fisheries 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.

Paul J. Diodati, Director, *Marine Fisheries*
David M. Peters, Commissioner, DFWEL
Ellen Roy Herzfelder, Secretary, EOE
Mitt Romney, Governor

Comments and suggestions for the newsletter are welcome. Please contact the Editors at (617) 626-1520, or write to:

Division of Marine Fisheries
251 Causeway Street, Suite 400
Boston, MA 02114

Publication #17020-12-7000-01/2003-\$4,200

Printed on recycled paper.

FIRST-CLASS MAIL
U.S. POSTAGE
PAID
BOSTON MA
PERMIT NO. 56299

Division of Marine Fisheries
251 Causeway Street, Suite 400
Boston, Massachusetts 02114