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DMF NEWS

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Paul Diodati appointed as DMF Director

Career fishery biologist renowned for work on striped bass and northern shrimp

DMF's fishery biologist Paul J. Diodati is the new Director of DMF, replacing Philip G. Coates who retired on February 4, 2000 (See related articles). On January 27, 2000 Commissioner David Peters' appointed Paul, and the appointment was unanimously approved by the Marine Fisheries Commission. Commissioner Peters noted that "Paul is an exceptional fisheries management professional, and I am confident that he will do an outstanding job in leading Massachusetts' fisheries conservation and management efforts."

Commissioner Peters was assisted in the search for a new DMF Director by a review panel he appointed in mid-December, 1999. The panel met to discuss the qualifications for a new Director and assisted Commissioner Peters in interviewing all candidates. The panel members were: Allen Peterson, a former professional fisheries manager with a background in both federal and state fisheries management; Frank Mirarchi, a representative of the commercial fishing community; Colin "Rip" Cunningham, representative of the recreational fishing community; and Brian Rothschild, a member of one of Massachusetts' academic institutions who possesses a strong background in fisheries science and management.

Diodati is well-known for his 20 years of prior service here at DMF working on successful management of both striped bass and northern shrimp. He has worked closely with both recreational and commercial sectors during his career. He has been Acting Assistant Director of Research for DMF for the last six months since the retirement of Leigh Bridges.

Paul demonstrated great administrative skills for the past five years when he managed DMF's Sportfish Program. He earned universal praise for the program's effectiveness, especially renewed efforts to educate the public about our state's fisheries and the need for conservation. "Paul Diodati has the necessary professional background, work ethic, and commitment to conservation and sound fisheries management that we were looking for in a new Director of Marine Fisheries," said Bob Durand, Secretary of the Executive Office of Environmental Affairs. "Governor Cellucci, Lieutenant Governor Swift, Commissioner Peters and I look forward to working with Paul on marine fisheries issues that are so important for Massachusetts' coastal environment, the state's economy, and our quality of life."

photo by Dan McKiernan

Commissioner David Peters (left) and Paul Diodati (right)

On February 6th, Paul "hit the ground running" representing DMF at the Atlantic States Marine Fisheries Commission meeting in Alexandria, Virginia. He also attended a status conference at the First District Court in Boston for the long-running federal lawsuit against the Commonwealth regarding right whale protection. There'll be no down-time as Paul is now the state's chief fisheries policy- and decision-maker. Home-grown and well-trained, Paul's appointment has generated confidence, optimism, and excitement among DMF staff, fellow fisheries managers, and constituents.

by Dan McKiernan (DMF) and Bob Greco (DFWELE)

Phil Coates honored and roasted

DMF held a retirement party at the Sea Crest Hotel in Falmouth on February 12 in honor of Phil Coates' retirement. The event was attended by about 250 guests that included family, friends, and colleagues. Phil received many accolades, gifts, and momentos for his 36 years of distinguished service with 21 years as DMF's Director.

Master of ceremonies Commissioner David M. Peters, began the celebration by introducing State Representative Ruth Provost who presented Phil with a Citation from the House of Representatives. Signed by Speaker of the House, Tom Finneran and Representative Provost, on behalf of the entire membership, the Citation congratulated Phil and recognized his many years of dedicated service to the people of the Commonwealth and wished him good fortune and continued success in all endeavors. A similar Citation was presented by Representative Anthony Verga on behalf of Senate President Thomas Birmingham and Senator Therese Murray.

Priscilla Geigis of the Executive Office of Environmental Affairs, on behalf of Secretary Bob Durand and Governor Cellucci, presented Phil with another Citation in recognition of his many years of public service. She also gave him Bob Durand's Green Seal Award.

Marine Fisheries Commission chairman Mark Amorello, representing the entire Commission, gave Phil a ship's compass as a gesture of appreciation. The compass signified the many years Phil provided members with guidance and direction.

Mark Forest, speaking on behalf of Congressman William Delahunt, Senators Kennedy and Kerry, and former Congressman Gerry Studds, praised Phil as a great fisheries advocate always showing great professionalism and integrity. He noted Phil's important legacy: the creation of "the flagship, the premier fisheries management agency in the United States." He stated that Phil could take comfort knowing he had put together a dedicated and professional group of people representing the very best of Phil's qualities he exhibited over the years as DMF's Director. This sentiment was shared by Molly Benjamin, a Cape Cod Times reporter, who noted that despite its small size and budget, "DMF is amazingly responsive when people call."

Reading a letter from Senator Kerry, Mark commended Phil for his "tremendous efforts and hard work to ensure that fisheries resources will be managed wisely for generations to come." On behalf of the Senators and Congressmen, Mark presented Phil with a unique and special tribute – special Congressional recognition, i.e., a Certificate of Outstanding and Significant Contribution to the Quality of Life for the People of the 10th District.

Also attending were Phil's counterparts in the other New England states: David Borden (RI), Eric Smith (CT), Lew Flagg (ME), and John Nelson (NH). Typical of most retirement parties, the roasting was long and comical with David Borden highlighting Phil's role (see photo) in interstate scup management. David also presented Phil with a plaque from ASMFC thanking him for his support and especially his years as ASMFC Chairman.

Phil closed his retire ment party by thanking his family, friends, and the many DMF staff that attended. Gracious as always, he bid farewell to DMF and noted he was pleased DMF was in the good hands of Paul Diodati, DMF's new Director. The gifts presented to Phil included a GPS/fish finder unit for his new boat, a vacation to Nantucket island, and an antique (1st edition) fisheries text: *American Fishes* by G.B. Goode printed in 1887.

We will all miss Phil's leadership, his wealth of knowledge, and his never-ending good humor and wit. Good health, good fishing, and good times are DMF's wishes for this unique man and long-time friend who was our boss for so many years.

by David Pierce

Above : Phil received an award from friends Lou MacKeil of the Cape Cod Salties (center) and outdoor writer Molly Benjamin (right).

Below: Phil and Rhode Island Director David Borden shared a laugh over a wooden scup that David crafted in his woodshop to commemorate DMF's stance on scup management.

Phil Coates' farewell message

I have retired from state service after 35 years with 21 years as Director. Like the marine resources and fisheries we manage, the Division has undergone many changes this past decade, both in personnel and programs. We haven't grown significantly in numbers, but program scope has certainly changed and expanded.

Major core programs such as shellfish classification, sport fish development, statistics, and resource assessment are still humming along. However, increased focus on interjurisdictional fisheries management under ASMFC has required significant involvement by field staff on various species Technical Committees, and many citizens have been pressed into service as advisors for the various management plans.

The passage of the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA) in 1993 heralded in a new era of interjurisdictional management. By using the same compliance structure developed in the Atlantic Striped Bass Act, the Atlantic States and other related jurisdictions are now accountable for their actions in support of fishery management plans. ASMFC currently is responsible for a plethora of fishery management plans for our important coastal and co-managed species. Everything from horseshoe crabs to American eels are now under the purview of the Commission.

Scup is on that list of interjurisdictional species and is managed in conjunction with the Mid-Atlantic Fishery Management Council through a joint plan that includes black sea bass and summer flounder. Inequities in the scup plan forced us to go to the federal courts to seek equity. It's most ironic that the state that traditionally has been the leader in scup conservation initiatives took the ASMFC noncompliance process much farther than any other state simply because the management system refused to recognize our longstanding and very substantial state waters' hand-gear (hook) fishery.

At the federal level, passage of the re-authorized Magnuson-Stevens Fishery Conservation and Management Act in 1996 placed far greater accountability on the fishery management councils. Management plans must identify over-fished species and lay out recovery goals and timelines. Needless to say, the New England Fishery Management Council is working even harder to address a number of over-fished species including the key groundfish species and Atlantic scallops.

The near-collapsed condition and poor prognosis for Gulf of Maine cod has led to Council decisions that are impacting fishermen significantly. Many months of closures of near-shore areas have impacted fishermen's revenue and have caused large discard problems as fishermen return to the re-opened areas to seek cod and other species. On a positive note, a recent assessment update of the major groundfish stocks indicated positive upswings for most of the 12 key groundfish. With continued strong management and support from the industry, the groundfish picture in New England will be much improved over the next several years.

Plans for sea herring, monkfish, whiting, and spiny dogfish are either approved or are on the verge of approval. We have substantial problems with the dogfish plan that would eliminate directed fishing for at least the next nine years and would destroy our dogfish fishing industry. For example, the plan doesn't address the enormous by-catch and discard problem of dogfish in other fisheries where most of the mortality occurs. Unfortunately, if dogfish, scup, and cod are any indications, at some levels of the management system there is more concern about landings than discards. In contrast, the Division has been very concerned and has addressed the latter through the implementation of effective conservation engineering and sea sampling programs. Fishing gear innovations are either under development or have been deployed, such as the raised footrope trawl.

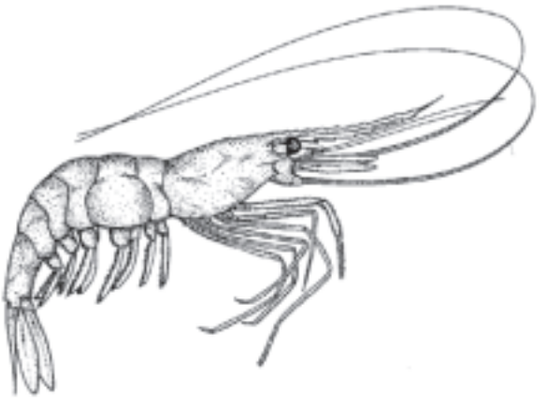
The Division has remained in the forefront of conservation engineering initiatives. Most notable is our work to develop an otter trawl that allows fishermen to pursue "small-mesh" whiting without impacting "large-mesh" groundfish. As a result of the partnership forged by the Division and the whiting industry, millions of dollars worth of whiting have been harvested from areas within and adjacent to the Commonwealth with minimal impact on flounder and cod.

We also have worked with fishermen to gain them access to spiny dogfish and other species from groundfish areas previously denied them. These actions have resulted in millions of dollars in harvest that would have been otherwise foregone.

The protection of habitat critical to the needs of fish is a major component of the latest federal fisheries action. The Division has been very involved in identifying such habitat. Fisheries habitat protection will be a major initiative during the next millennium.

Several programs have been brought on line during the past seven years. We have obtained funding to support the important survey and biological investigations work of the Center for Coastal Studies in Provincetown. The Center's work has assisted our response to a federal lawsuit. Massachusetts waters seasonally host as many as one-third of the remaining northern right whale population. We also have initiated a regulatory regime to reduce right whale entanglements with fixed fishing gear during the winter/early spring when the whales are present in state waters.

Our recreational fishing program has expanded significantly. One example has been Division and Department land acquisitions to enhance recreational fishing access. For example, working with the Orvis Company we acquired



marsh and upland property at the mouth of Scorton Creek in Sandwich.

The shellfish classification program continues to protect the public from contaminated shellfish while concurrently providing access to the Commonwealth's rich shellfish resources harvested from clean waters. Thousand of acres of shellfish-growing waters have been opened over the past several years. The shellfish purification plant at Plum Island has cleansed thousands of bushels of clams and continues to process shellfish harvested from moderately contaminated waters.

Our anadromous fish program has been successful in restoring or renovating several historic river herring runs. There is growing public interest in protecting and restoring traditional anadromous fish passage facilities, and the need to enhance and protect our forage base makes this program critically important.

Then, there is striped bass, our most important recreational species and an important commercial species as well. It is generally agreed that the recovery of striped bass is providing great satisfaction to the hundreds of thousands of recreational fishermen who live here or come to visit the Bay State. Our striped bass fishing has become so superb that many people visit just to catch stripers. Other important sportfish are showing signs of recovery, including fluke and weakfish, while others are beginning to respond positively to the rigorous management actions imposed by the state and federal management systems.

Although the management process has been severely criticized by some, and certainly the track record for some species hasn't been the best, I am an optimist. I am confident that the majority of our important fish stocks are beginning to show positive signs of recovery, a situation that bodes well for the future and for those who will be deriving pleasure and income in future years from our fisheries resources.

by Philip G. Coates, former Director

Dr. Stephen Clark receives 1999 Belding Award

NMFS's Dr. Stephen Clark of Falmouth was awarded the 10th annual Dr. David L. Belding Award for marine resource conservation. Dr. Clark is a Fishery Research Biologist with the Northeast Fisheries Science Center in Woods Hole.

"Dr. Clark has been a key person in advancing regional, national, and international fishery science during his distinguished career," said Commissioner David Peters. "His role in northern shrimp science and conservation has been critical in the successful management of the shrimp fishery in the Northeast for more than 25 years."

Commissioner Peters presented the award to Dr. Clark before the January meeting of the Marine Fisheries Commission. Phil Coates praised Steve as a "team player" in fisheries management and for his sage advice to state fisheries managers over the years.

Dr. Clark has been employed by NMFS since 1973 and has been involved with stock assessments, fishery biology, and resource surveys for a variety of marine fish stocks. He is a former Deputy Chief of the Conservation and Utilization Division and is well known and respected for his work on several scientific and technical committees.

The Belding Award is funded in perpetuity by Dr. Belding's descendants, who attended the ceremony. It is given to the individual who, in the opinion of the Commission, has done the most to promote the conservation and sustainable use of the Commonwealth's marine resources.

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. As a medical professor for Boston University, he wrote two textbooks in parasitology and physiology, and his work in marine biology became one of the cornerstones of today's DMF.

by Bob Greco (DFWELE)

Regional plan for horseshoe crab conservation

States to cut landings by 25% this year

The recent swirl of publicity on the plight of the horseshoe crab - much of it based on inaccurate anecdotal information - has resulted in a flood of form letters to the administration and the legislature urging severe reductions in commercial landings and even an outright ban on commercial harvest. Concerns about over-exploitation (leading to extinction), unregulated harvest, export to other states, and damage to bird populations are common elements in most of the letters. Much of this public concern has been generated by well-established environmental organizations and at least one ad-hoc organization formed for this specific purpose.

The primary rationale for keeping the horseshoe crab at high population levels is driven by the need to protect migratory shorebirds in the mid-Atlantic region, specifically in Delaware Bay. Horseshoe crabs, *Limulus polyphemus*,which are not true crabs, spawn and bury their eggs on beaches during spring high tides. Subsequent spawning by new arrivals each night results in eggs being uncovered and left exposed.

Several species of shorebirds have evolved to take advantage of this behavior. Some, which migrate from South America to breed in the Arctic during a very short season, would be unable to breed without this concentrated high-energy food source. If the birds arrive in Delaware Bay while the crabs are spawning, they can feed for several days and build fat reserves necessary to reach the Arctic during the brief period of suitable temperatures. No other food source of this magnitude or quality is available during this narrow window of opportunity.

Photo courtesy of Tom O'Connell, Maryland DNR

Increased harvest of horseshoe crabs for bait in conch and eel traps in the region and subsequent declines in the number of spawning crabs have raised concerns about preserving this fragile relationship. The needs of commercial fishermen are being balanced against those of birds (and birdwatchers) and of the biomedical industry that uses the blood of horseshoe crabs (released alive) to manufacture a lysate compound used in the currently accepted test for endotoxins in pharmaceuticals and prosthetic devices.

Since not enough is known about the population dynamics of the horseshoe crab to make sound biological decisions on harvest rates, quotas, etc., some are calling for a risk-averse management plan with reductions in harvest of 50% or more to protect the population until assessments can be made. Fishery managers, on the other hand, are reluctant to make that level of reduction, with its attendant economic consequences, without sufficient evidence to justify it.

In response to an evolving fishery management plan under development by the ASFMC, DMF promulgated a regulation requiring the licensing of all harvesters and mandatory reporting by dealers and fishermen. Working with conch pot fishermen, we estimated our average bait use, and submitted an estimated RPL (reference period landings) of 400,000 crabs per year.

Through interviews we believe Massachusetts landings have been relatively stable over the last several years. In 1999, a total of 473,593 crabs were reported landed by 94 licensed fishermen. Of these, the vast majority were used as bait for conch fishing here in Massachusetts, in a pot fishery that produces $1 to 3 million in annual revenues in Cape Cod, Buzzards Bay and the Islands.

Less than 1% were sold outside Massachusetts, and 7% were sold to educational and research institutions. Our bait dealers reported imports of over 70,000 crabs from the mid-Atlantic area to augment the local harvest. These were primarily landed by draggers fishing in the EEZ and landing in Virginia and Maryland.

Massachusetts landings have not increased in recent years because the state's conch pot fishery is stable and tightly regulated. Both number of licenses and number of pots are limited by long-standing regulations. Concerns about a growing demand for exports to other states have been unfounded because our fishermen must import crabs to meet their own needs. As long as demand and the price are stable there is no incentive to ship crabs long distances. Sightings of rental vehicles with horseshoe crabs during the relatively short season has caused speculation about exports, since many of them carry out-of-state plates. However, only two non-resident licenses were sold in 1999 (Rhode Island residents).

Our horseshoe crab landings are harvested by hand in relatively few areas by Massachusetts residents for their own bait use or for sale to other Massachusetts fishermen. Before the horseshoe crabs became important as conch bait, town predator control programs were necessary to control their numbers. Horseshoe crabs are effective predators of shell-

fish, especially soft-shelled clams. Many shellfish experts believe that the robust clam populations occurring on Cape Cod at present are partially a result of the benefits of the horseshoe crab bait fishery.

There is no demonstrated relationship between the local horseshoe crab population in Massachusetts and that in Delaware Bay. Most movement is confined to relatively short inshore-offshore migrations. In addition, there is no documented dependence by any bird species on Massachusetts horseshoe crab eggs. The migratory shorebirds of concern, such as the red knot, do not use the New England coast as a staging area on their northward migration. Some shorebird species visit our shores on their return south during late July and August, but there is no documented consumption of horseshoe crab eggs or larvae. At that time of year, any few remaining eggs and larvae are components of the overall invertebrate food resources and are not a critical single source. In addition to shorebirds, several species of marine turtles feed on horseshoe crabs, and one terrestrial turtle, the diamond backed terrapin feeds on early life stages in the intertidal zone.

Although it has not been demonstrated that the Massachusetts horseshoe crab population is over-fished, or that our fishery is causing any ecological damage, we have cooperated in the development of the ASMFC management plan, and we have met all compliance measures currently in place. On February 9, the ASMFC Horseshoe Crab Management Board met in Alexandria, VA, to adopt an Addendum to the plan that adds effort controls. Massachusetts representatives agreed with the majority of states that a conservative approach balancing the interests of the bait fisheries, the biomedical industry, and ecological considerations is most prudent.

The most important measure passed by ASMFC is a cap on horseshoe crab bait landings at 25% below reference period landings for all states, with a closure of the bait fishery when the cap is reached. States with more conservative measures already in place are encouraged to maintain them. In addition DMF will consider a variety of conservation measures designed to make the cap more effective, such as closed days, temporary closed areas, strict reporting requirements, and encouraging the use of methods to minimize bait use, especially alternative baits. Development of a practical alternative or synthetic bait for conch would be the most effective way to take the pressure off the horseshoe crab resource, and several promising baits are under development.

This crab's resilience and unique life history have made it a celebrity marine species in the new millennium – despite its being around for at least 60 million years. Horseshoe crabs have survived large-scale industrial fisheries for the production of fertilizer and years of community-based predator control programs - that offered bounties! Given that the present fishery is low-tech and of short duration during spring, we are confident that the species can be managed successfully as a renewable resource.

The management planning process underway at ASMFC by participating states has been effective for a variety of species, including striped bass. Conservation measures, especially the mandatory 25% reduction in landings, statistical reporting, and population surveys will ensure that this species will remain at its present level of abundance for the foreseeable future.

By Jim Fair, Assistant Director

New focus for DMF's Power Plant Investigations Project

Final flounder tag lottery held

The scope of the Power Plant Investigations Project has changed. We no longer conduct fisheries field sampling programs to assess the environmental impact of the Plymouth Pilgrim Nuclear Power Station on living marine resources in Western Cape Cod Bay. Since 1970, this DMF project has studied marine fisheries off the power station with our focus being on groundfish, cunner, rainbow smelt, lobster, and the red macro-alga (seaweed) - Irish moss. Other investigations included a sportfish creel survey and monitoring water temperature and dissolved gas saturations in the plant's intake and discharge waters.

DMF's Brian Kelly presents gillnetter Brainard Ames with this year's grand prize. DMF photo by Matt Camisa

We will continue in 2000 to collect samples of sediment and marine life nearby the Pilgrim Nuclear Power Station to monitor radiological levels in the environment. This will be the responsibility of Matthew Camisa. We will continue our involvement in power plant environmental impact assessment work by helping to oversee and evaluate the goals, objectives, and sampling design of environmental studies at existing and proposed coastal power plants. This will be one of my tasks. I also will review environmental impact reports; recommend restorative measures and corrective actions to mitigate adverse power plant impacts of water withdrawals and thermal discharges; and advise on changes in scope and direction of field sampling programs to assess power plant impacts.

Vin Malkoski and John Boardman have been reassigned to DMF's Sportfish Program. Brian Kelly has been transferred to DMF's Fisheries Dependent Investigations Program.

Results of our long-term biological studies that have revealed much about the ecology of western Cape Cod Bay will be highlighted in future issues of DMF News.

There was a big payoff for fishermen returning winter flounder tag recapture information in 1999. They were eligible for our lottery of one $500 and five $100 cash prizes. Brainard Ames, a commercial gillnetter, was our big winner in 1999. He was awarded $600 (see picture). Three other fishermen won prizes of $100-200. The 1999 drawing

was the last we will offer as a reward for winter flounder tag returns. Still, we ask fishermen to be on the lookout for tagged flounder.

From 1993-1999, DMF biologists on the Power Plant Investigations Project marked (tagged and fin-clipped) and released 22,476 winter flounder in western Cape Cod Bay and part of Massachusetts Bay, primarily during the winter flounder spawning season. To date, we have 1,024 tag returns (4.5% recovery rate). These recaptures came from research, commercial, and recreational catches. The majority of returns came from our tagging area near Plymouth. We have had a small number of distant recaptures from Boston Harbor, Stellwagen Bank, Buzzards Bay, Newport, and Long Island.

This information has helped us map seasonal movements, define the geographical distribution and fidelity of the local population, and estimate population size for winter flounder. Our overall tagging objective has been to assess the impact of power plant operations on winter flounder. Winter flounder larvae are entrained in Power Plant cooling waters withdrawn from Cape Cod Bay.

by Robert Lawton, Power Plant Studies

Scup Management: Summer 2000

Even though it's almost March, ASMFC still does not know how the scup commercial fishery will be managed this summer (starting May 1). However, there is one good idea on the table – a proposed ASMFC emergency action that would dramatically increase the summer quota for this year and that DMF believes it can support, at least for one year.

At the February ASMFC meeting the Scup Management Board tentatively approved a DMF analysis critical for ASMFC to "save" this year's summer season. By applying much more realistic estimates of mortality of scup released during the summer season by fishermen using weirs, handlines, pots, and floating traps, we can remove the 300,000 lbs. overage of last year's coast-wide summer quota – an overage created by Rhode Island when officals chose not to close the state's fishery when the federal coast-wide summer quota was caught. Massachusetts closed when the summer coast-wide quota was taken. Rhode Island insisted on taking its 60.6% ASMFC share (598,000 lbs.). Just as important, by revising our estimates of discard mortality, we can obtain a 1.32 million lbs. summer quota for all states to share (primarily Mass., R.I., and N.Y).

The Scup Management Board agreed ASMFC should adopt realistic dead-discard assumptions. Common sense and our years of experience with gear used to catch scup inshore allows reasonable and defensible assumptions. Clearly, the status quo is indefensible: applying trawl discard mortality estimates to inshore fisheries especially those prosecuted by other gear. DMF has long argued that ASMFC should assume all released fish from pots have very high survival such as 95%. Similarly, for gear using hooks, we should use our collective expertise to assume no more than 5% mortality. DMF research showed a less than 5% hooking mortality for black sea bass. The same percentage could be applied to scup.

The alternative to a coast-wide summer 1.32 million lbs. quota is a quota of 687,000 lbs. (987,000 minus the 1999 overage) that will be disastrous for Massachusetts, Rhode Island, and New York. Most summer landings occurs in these three states. DMF cannot support a quota of 687,000 lbs. especially if ASMFC attempts to hold the Commonwealth to just 22% of the total (only 151,000 lbs.). This percentage is one option (non-preferred) ASMFC likely will include as part of any emergency action. A quota of this magnitude would represent a cut in our summer inshore fishery landings of about 90% from 1996. The "required" cut is 52% according to the Plan's schedule for reducing exploitation with landings as a proxy for exploitation.

So where are we now? The Scup Board agreed to the following preferred option for emergency action. This option is still being refined and debated. If no changes are made to this option during the next few weeks, we might adopt a strategy that empolys a bi-monthly allocation for this summer (May 1 through October 31):

Sector/Period	***Quota and %***
Floating traps, weirs & pound nets	***507,900 lbs. (38.5%)***
May - June (all other gears)	***331,100 lbs. (25.1%)***
July - August (all other gears)	***201,800 lbs. (15.3%)***
Sept. - October (all other gears)	***278,400 lbs. (21.1%)***

These figures are preliminary and if approved by the Board in March, will be part of an ASMFC Emergency Rule to go to hearings this spring. An important part of this strategy is all states agreeing to the same landing limit of 200 lbs. An option may be to provide for greater landings by trawlers.

This approach involves setting aside a substantial portion of the summer quota for floating traps, weirs, and pound nets. DMF has insisted that weirs be included in this set-aside to ensure that this stationary gear in the eastern portion of Nantucket Sound won't face a zero quota if Rhode Island floating trap fishermen catch scup in large amounts before scup make their way to waters off Harwich and Chatham where the weir fishery is located. One possibility is to take a portion of the 38.5% and reserve it specifically for weirs. Each state would establish its own daily landing limit if they chose to do so. In 1999 DMF did not limit weirs because the weir scup fishery sometimes is no more than a few weeks long.

A benefit of this approach is that fishermen landing scup in Massachusetts won't find themselves with no quota for most of the summer and fall. In 1999 our fishery closed in June and did not re-open until November 1. Valuable scup were abundant throughout the summer and into the fall. With this bimonthly allocation of the summer coast-wide quota, fishermen and dealers would have an opportunity to fish at least in July and September when the new quota periods begin. The limit likely would be 200 lbs.

At our March public hearings we will air scup proposals for this summer. One option will be the preferred approach of ASMFC. Other options will include what DMF should do if ASMFC decides to go in another direction or if the summer coast-wide quota is not increased to 1.32 million lbs. We could repeat 1999 this summer, but with some changes such as a much lower landing limit in May, to prevent a lengthy summer and fall closure.

by David Pierce

"Ball" of lost gillnet and lobster gear removed from the ocean bottom by a contracted trawler. DMF is devising a ghost gear removal startegy that is effective and economical. DMF photo by Mike Pol

Ghost Gearbusters!

"Ghost" fishing gear is an unfortunate fact of life. Through storms, tides, accidents, interaction with other fishermen or with other boats, fishing gear is lost from time to time. Lobster pots may have their marking buoys cut by a passing propeller. A gillnet may be dragged by a storm miles from where it was set out. A trawl net may be hopelessly snagged on rocks.

Losing gear is bad enough, but sometimes the gear continues to cause problems. It can become a hazard to navigation and to other fishing gear. If lost fishing gear continues to ensnare fish, it is called ghost gear. A lost gillnet can still catch fish when lost, leaving the fish in the net to die pointlessly. To avoid this problem in lobster pots, an escape panel is held in place by metal rings that erode, allowing the panel to open and free any trapped lobsters or fish. Sadly, ghost gear poses a risk not only to fish and shellfish, but also to marine mammals, such as seals, dolphins, and whales – including the highly endangered northern right whale.

Al Rencurrel, captain of the surf clammer *Maude Platt*, was clamming on Billingsgate Shoal in the eastern part of Cape Cod Bay, known to be critical right whale habitat. DMF biologists have seen from aerial surveys that it is a favorite haunt of the northern right whale in winter/early spring. While raising his clam dredge to the surface, Capt. Rencurrel noticed some line running across it. He suspected a tangle of ghost gear might be at the other end of the line. After removing the line, he saw a pair of buoys, and jotted down their position. His intent was simply to avoid the area in the future, but then he went a step further. He reported the position of the buoys to DMF.

Shortly thereafter, environmental police and a dive team from DMF surveyed the site and determined that a pyramid of lobster pots and gillnets were at the other end of the buoys, and a variety of species were entangled in the gillnets. DMF's Conservation Engineering Program then chartered the Scituate trawler *Christopher Andrew*, captained by Frank Mirarchi, on 28 June 1999 to attempt to recover the ghost gear.

The lobster buoys were just where Al Rencurrel had reported them. With a quick hook of a gaff, a pull of a line, and the use of the net drum, a messy pile of monofilament twine and wood lathe lobster pots were hauled onboard. The twine was wound thickly, like a baseball with its cover off, and the wood lathe pots were crushed under the weight of the ball.

The gillnets appeared to be standard monofilament 6 1/2 and 7 inch green and pink nets. Without further gear markings, it was impossible to determine their origin. The registration number on the lobster buoys led DMF to a lobstermen from Scituate who mainly fished the Middle portion of Stellwagen Bank and the Boston Harbor dumpsite. Based on when he started using the color scheme of the buoys, we know the pots were between two and seven years old.

DMF is developing a ghost gear removal initiative in Cape Cod Bay. We will rely on fishermen like Al Rencurrel to report locations of ghost gear. Sometimes one small act has many major beneficial consequences. By reporting ghost gear, Al Rencurrel contributed to conservation of our marine resources: fish, crustaceans, and possibly marine mammals. We need your help. Mark ghost gear with a buoy when you can, and report the location to DMF. Working together we can remove a lot of unnecessary gear that harms all of us – fishermen, boaters, and even whales.

by Mike Pol, DMF Conservation Engineering Program

Environmental Police Lt. Peter Hanlon inspecting abandoned lobster gear in Cape Cod Bay Critical Habitat. DMF photo by Dan McKiernan

Raised Footrope Trawl Catches Rising Squid

Springtime brings warmer water into Vineyard and Nantucket Sound, and Loligo squid follow soon thereafter, appearing in weirs along the Cape Cod shoreline in April. Soon, small trawlers arrive in Woods Hole, Falmouth, Hyannis, and the Islands, joining local fishermen for the annual spring squid fishery in Nantucket Sound.

The squid fishery was studied by two DMF scientists, Dan McKiernan and Dr. David Pierce in 1993 and 1994. They made nine recommendations for further work, including designing a net that catches only squid and reduces bycatch of flounders and scup. Since 1997, DMF's Conservation Engineering Program in partnership with the Manomet Center for Conservation Sciences, has been working every spring with the Nantucket Sound squid fleet to measure catch and bycatch, and to test alternative net designs. This work was largely funded through a Saltonstall-Kennedy grant.

Three types of nets have been looked at: the standard net, used by many fishermen; a raised footrope trawl (RFT) (the same net used in the whiting fishery); and a "separator trawl." The RFT was described in a previous issue of the DMF News. A separator trawl is an experimental net that is horizontally divided across its mouth, with an upper and lower codend. Using this net, fish or squid in the upper part of the mouth of the net end up in the upper codend, and fish in the lower part of the mouth move into the lower codend.

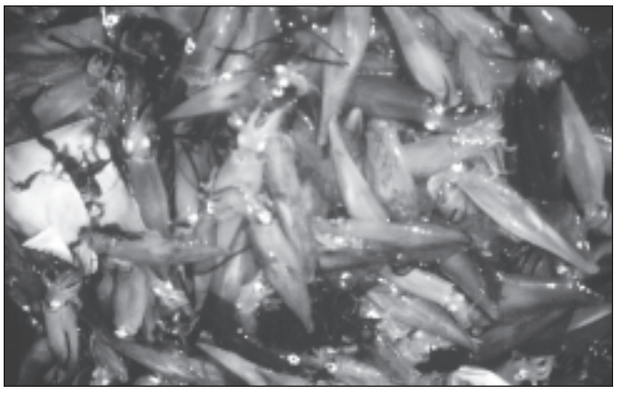
Underwater video footage collected the first spring showed a previously unknown behavior in squid: when herded by a net, they swim along, slowly rise up in the mouth of the net, and then fall back when exhausted. Scup, on the other hand, stay low. This difference in behavior was verified by the separator trawl. When the separator trawl was tested, the top cod-end contained nearly all squid and other kept species (90% - see figure). The lower cod-end contained the bycatch of skates, crab, and other species.

Our initial plan was to try to modify the separator trawl to be used commercially. However, we learned that some fishermen had found the RFT from the whiting fishery fished cleanly in the squid fishery. These boats fished with sea samplers onboard. It was immediately clear that the RFT was a very clean net; in fact, it fished almost identically to the upper part of the separator trawl. The catch with the raised footrope trawl was 97% squid and other kept catch in 1999.

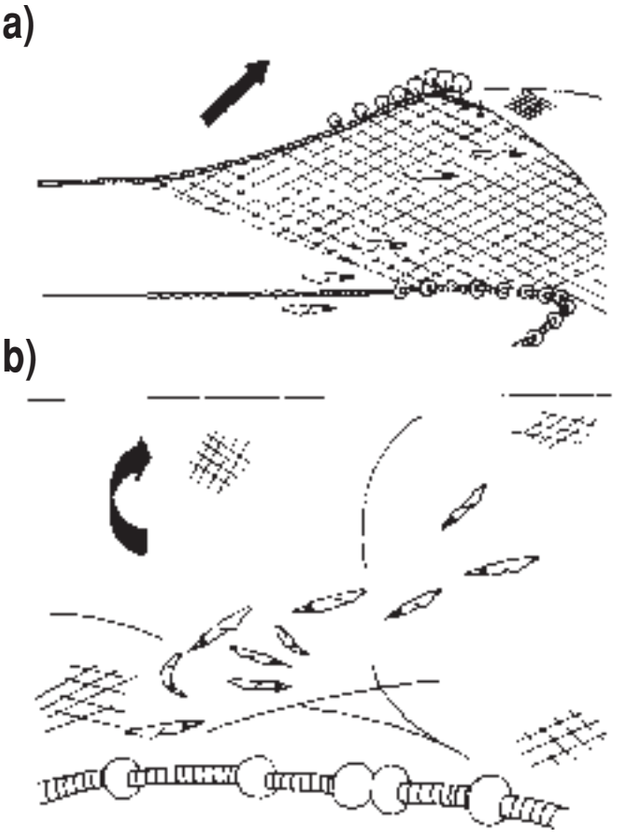
The RFT has many advantages:(a) fishermen can fish for whiting and squid with the same net at different times of year; (b) the net fishes so cleanly that very little time is spent sorting the catch; (c) the clean catch means the quality of the squid is high; (d) raising the footrope off the bottom probably reduces any effect on fish habitat; (e) the net is not abraded by the sandy bottom of the Sound, and (f) the net is easier to tow which reduces fuel costs.

This spring, in cooperation with the fishing fleet, we plan to continue our testing of the RFT and other net modifications. For the fourth year, the annual migration of squid and squid fishermen will be followed by DMF and MCCS scientists, with their fish scales and underwater cameras.

By Michael Pol, DMF Conservation Engineering Program, and Chris Glass, Manomet Center for Conservation Sciences



Below: a) Sequence taken from videotape showing the position of a single squid in five consecutive frames showing reaction to the footrope of the approaching net. The squid turn to swim ahead of the net and gradually rise upward into the upper part of the of the mouth of the net. b) Sequence taken from the videotape showing the position of two squid in five consecutive frames. When tired, squid stopped swimming, turned, and rose upwards allowing the net to overtake them. (Reprinted by permission from MTS Journal 1999 Vol. 33(2) 35-42. Bycatch Reduction in Massachusetts inshore squid (Loligo pealeii) trawl fisheries by Glass, C.W, B. Sarno, H.O. Milliken, G.D. Morris, and H.A.Carr.)



DMF Rules UPDATE

Public Hearings • Regulations • Legislation

Notice of Public Hearings

Scheduled for March 7, 8 and 10, 2000

Under the provisions of G.L. C. 30A and pursuant to the authority found in G.L. c 130 ss. 17A, 80, 100A, and 104, the Division of Marine Fisheries (DMF) and the Marine Fisheries Commission (MFC) have scheduled hearings on the following proposals. Contact the Division of Marine Fisheries for draft regulations and further details. DMF and MFC will consider all oral and written comments through the close of business on Friday, March 10 and votes on these proposals will be taken at the March 14 Business Meeting of the Commission. If specific changes are not approved, current regulations will remain in effect.

(1)DMF proposals for striped bass rule changes for 2000 based on input of the DMF-sponsored Striped Bass Advisory Group.

Option A: Maintain status quo; or Option B: Increase recreational minimum size from the current 28" to a larger size ranging as high as 34". Also DMF seeks comments on whether to open the commercial fishery on July 5 or July 2.

(2)DMF proposals for new restrictions affecting spiny dogfish commercial harvest and sale.

(a) Require commercial harvesters to obtain a regulated fishery permit;

(b) Require dealers who purchase dogfish from commercial fishermen to obtain authorization from DMF and report purchases.

(c) Adopt a 70 cm (28") minimum size.

(d) Establish a possession/landing limit up to 7,000 lbs.

(e) Close the dogfish fishery when an annual quota of up to 22 million lbs. is reached.

(f)Establish regulations specific to dogfish gillnetters (DMF seeks comments on ways to define "dogfish gillnetting" through area, season, and gear specifications)

i. Prohibit overnight sets of dogfish gillnets and establish minimum mesh size of dogfish gillnets of 6.5."

ii. Establish a maximum number of dogfish gillnets nets to thirty 300 foot nets.

iii Restrict access to dogfish gillnetting to those gillnetters who can document fishing for dogfish in state waters three out of the last five years (1995-1999).

(3) DMF proposals for management of the summer (May-October) commercial scup fishery.

Based on the outcome of upcoming ASMFC decisions, the 2000 fishery will be managed under one of two possible management schemes.

(a)Bi-monthly quotas shares by all states (e.g. RI, MA, NY) with common regulations among all harvesting states including a trip limit of 200 lbs. for most gear types with a quota set-aside reserved for weirs, pound nets and floating traps

(b)Massachusetts managed 500,000 lb. quota with the following restrictions:

May 1 – June 30: 100 lbs. limit for fishermen using hooks and pots, 500 lbs. for draggers, and no limits on weirs

July 1 – Oct 31: 200 lbs. limit for fishermen using hooks or pots; no weekend fishing;
500 lbs. for draggers; (with an option to allow weekend fishing)

(4) Proposals to amend summer flounder recreational and commercial fishing.

(a) Recreational: To comply with the interstate management plan, DMF proposes to amend the summer flounder recreational minimum size from 15" to 151/2 " and increase the recreational season to May 10 – October 2 (last year's season was May 29 - September 11.) Possession limit of 8 fish remains unchanged.

(b) Commercial fishery: Public petition to amend the season and trip limit rules to allow fishermen deploying longlines to harvest 100 lbs./day during the same period (April – June) that netters are allowed to land 100 lbs. Current regulations prohibit all commercial summer flounder harvest by fishermen using hooks during April 23 – July 4.

(5) DMF proposals to regulate American eel fisheries to bring Massachusetts into compliance with the interstate management plan.

(A) Require commercial harvesters to obtain a regulated fishery permit; Permit conditions would include submission of monthly catch reports;

(B) Increase in the minimum size limit from 4" to 6";

(C) Establish a non-commercial (recreational) possession limit of fifty (50) eels;

(D) Require dealers who purchase eels from commercial fishermen to obtain authorization from DMF and report purchases.

(6)DMF proposals to regulate horseshoe crab fisheries to bring Massachusetts into compliance with the interstate management plan. The ASMFC-approved quota for Massachusetts for 2000 is 330,337 crabs. To manage this quota DMF proposes (a) Daily bag limit of 1000 per licensed harvester; (b) Prohibition on commercial harvest on Saturdays and Sundays; (c) Mandatory use of bait bags by conch potters; and (d) establishment of procedures to open and close specific areas to protect sensitive or depleted spawning areas; and (e) Establishment of a control date on the issuance of regulated fishery permits of February 15, 2000.

(7) Accept comments on recent emergency action to increase cod trip limit from 200 to 400 lbs. to complement recent federal actions.

Three hearings have been scheduled: **NOTE the early start times at 6:00p.m.**
Tuesday, March 7 from 6:00 to 10:00 p.m. at the Fuller School in Gloucester;
Wednesday, March 8, 2000 from 6:00 to 10:00 p.m. at the Mass. Maritme Academy in Buzzards Bay;
and Friday March 10, 2000 from 4:00 to 8:00 p.m. at the Tisbury Senior Center on Martha's Vineyard

Regulatory Update

During the period December 1999 through February 2000, the following actions were taken by DMF and MFC

Lobster trap limit of 800 pots per vessel was re-filed. This rule prohibits the use of 2 permits per vessel to circumvent the 800 pot rule. It was originally filed in Spring 1999 but expired.

Northern Shrimp rules enacted consistent with ASMFC shrimp plan for 2000. Season shortened to just 51 days, a January 17 - March 31 season, prohibition on Sunday fishing, and allowance for a "double" Nordmore Grate.

Fluke permit endorsement for gear type. For 2000, fluke regulated fishery permit holders are required to designate their past gear types to harvest fluke.

Sea sampling requirement. Like the regulation that mandates fishermen to accommodate Environmental Police Officers for inspection, this new rule sets up -as a condition of any commercial permit – the requirement to accommodate DMF observers for biological sampling and observing fishing practices etc. Formerly only draggers (Coastal Access Permit holders) were obliged to accommodate observers.

Groundfish gear amended to comply with federal rules. Trawler roller size lowered from 18" to 12" and square mesh increased from 6" to 6.5" Also the April groundfish closure around Cape Ann was extended through May.

Tautog closed season re-filed. The "open" seasons for 2000 will the same as 1999's: April 16-May 15 and July 11 - Oct 31.

Cod trip limits: The 200 lb. trip limit in the Gulf of Maine was increased to 400 lbs. to match the recent federal increase. Also a 2,000 lb. trip limit was established for waters east and south of Cape Cod below 42 degrees latitude. This complements the Georges Bank trip limits.

V-notched Female Lobster Protection changed to enhance enforcement by deleting language in the former regulation that allowed fishermen to avoid penalty by relinquishing v-notched lobsters to law enforcement officers.

Trap Tags regulation amended to specifically prohibit fishermen from placing tags on their traps that were issued to other fishermen.

Lobster Processing regulations re-written to reference Department of Public Health statutes, and federal HACCP regulations.

Finally, the Commission approved a lobster management regulation change but DMF has delayed its filing pending the approval of the ASMFC to ensure it's not in violation of the lobster plan. The change amended the lobster maximum size regulation to allow vessels with state lobster licenses endorsed for Lobster Management Area I to possess lobsters larger than 5 inch carapace length when enrolled in the federal Gulf of Maine Cod Trip Limit Exemption Program.

INSIDE...

Surfers • Surfers • Surfers

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

HTTP://www.state.ma.us/DFWELE/DPT_TOC.HTM

DMF NEWS

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DMF 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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Comments and suggestions for the newsletter are welcome. Please contact the Editors at (617) 626-1520, or write to DMF, 100 Cambridge St., Boston, MA 02202.

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