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ASMFC

FISHERIES focus

Working towards healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015

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Margaret Hunter Receives ASMFC Annual Award of Excellence

Ms. Margaret Hunter, scientist with the Maine Department of Marine Resources, was presented the Commission's Annual Award of Excellence in Alexandria, Virginia for her years of outstanding contributions to the fisheries science and management programs of the Atlantic States Marine Fisheries Commission and the State of Maine. Ms. Hunter received her award in the area of scientific, technical, and advisory contributions.

From Left: ASMFC Executive Director Bob Beal, Margaret Hunter and Terry Stockwell with Maine DMR. Photo by ASMFC.

Ms. Hunter has served on the Commission's Northern Shrimp Technical Committee for well over a decade and for the majority of those years, she provided critical leadership as its Chair. Over the course of her chairmanship, she directed the technical committee's work through two peer-reviewed benchmark stock assessments, several annual stock assessment updates, two major plan amendments, and several addenda. Further, she has provided valuable scientific advice to the Northern Shrimp Section on quota setting, monitoring, reference points, and effort controls. She is one of those truly gifted scientists who is not only able to conduct sound scientific analysis, but is also able to effectively communicate the analysis and findings in a relatable and understandable way to both fishery managers and fishermen.

Ms. Hunter has been a dedicated scientist with the Maine Department of Marine Resources for over 30 years, conducting field research on northern shrimp, Atlantic herring, sea urchins, groundfish and other species, as well as providing valuable computer and analytical support for numerous fisheries projects. Since 2000, she has been responsible for the monitoring and assessment of Maine's sea urchin and northern shrimp fisheries. Both programs are critically important in that they provide the scientific foundation for management of these valuable fisheries.

Ms. Hunter's outstanding work ethic and commitment to detailed, but understandable, scientific advice has set an example for other scientists at the Maine Department of Marine Resources as well as those working on the Commission's technical and stock assessment committees.

Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200 A-N • Arlington, Virginia 22201 • www.asmfc.org

Upcoming Meetings

The Atlantic States Marine Fisheries Commission was formed by the 15 Atlantic coastal states in 1942 for the promotion and protection of coastal fishery resources. The Commission serves as the deliberative body of the Atlantic coastal states, coordinating the conservation and management of nearshore fishery resources, including marine, shell and diadromous species. The fifteen member states of the Commission are: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida.

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September 16-20
South Atlantic Fishery Management Council, The Charleston Marriott Hotel, 170 Lockwood Boulevard, Charleston, SC.

September 16 (10 AM - 6 PM) - 17 (8 AM - Noon)
ASMFC Biological Ecosystem Reference Points Workgroup, The Hotel at Arundel Preserve, 7795 Arundel Mills Boulevard Hanover, MD.

September 17 (1 - 6 PM) - 18 (8 AM - 5 PM)
ASMFC Atlantic Menhaden Technical Committee, The Hotel at Arundel Preserve, 7795 Arundel Mills Boulevard, Hanover, MD.

September 24 (10 AM - 4 PM)
ASMFC Horseshoe Crab Delaware Bay Ecosystem Technical Committee, ASMFC Offices, 1050 N. Highland Street, Arlington, VA.

September 25 (10 AM - 3 PM)
ASMFC Horseshoe Crab Technical Committee, ASMFC Offices, 1050 N. Highland Street, Arlington, VA.

September 24-26
New England Fishery Management Council, Cape Codder Resort, Hyannis, MA.

September 24-27
ASMFC Post-Release Mortality Workshop, Omni Parker House 60 School Street, Boston, MA.

October 2 (1 - 4:30 PM)
ASMFC Northern Shrimp Section, Urban Forestry Center, 45 Elwyn Road, Portsmouth, NH.

October 8-10
Mid-Atlantic Fishery Management Council, Courtyard Philadelphia Downtown, 21 North Juniper Street, Philadelphia, PA.

October 9-11
ASMFC American Lobster Stock Assessment Modeling Workshop, New Hampshire Fish and Game Region 3 Office and Marine Fisheries Division, 225 Main Street, Durham, NH.

October 21-25
ASMFC Tautog Stock Assessment Workshop, Massachusetts Division of Marine Fisheries, 251 Causeway Street, Boston, MA.

October 27-31
ASMFC 72nd Annual Meeting, The King and Prince Beach & Golf Resort, 201 Arnold Street, St. Simons Island, GA.

November 19-21
New England Fishery Management Council, Newport Marriott, Newport, RI.

December 2-6
South Atlantic Fishery Management Council, Hilton Wilmington Riverside, 301 North Water Street, Wilmington, NC.

December 10-12
Mid-Atlantic Fishery Management Council, The Westin Annapolis, 100 Westgate Circle, Annapolis, MD.

State and Federal Partners Join Forces to Rebuild River Herring

Long recognized for their importance to local fishing communities and as a forage species, river herring were one of the first Commission species to be addressed through an interstate fishery management plan (FMP) in the early 1980s, alongside American lobster, Atlantic menhaden, and Atlantic striped bass. Since that time, the Commission and the states have worked to sustainably manage river herring through increased monitoring and assessment, as well as engaging local, state, and federal partners in addressing additional threats to the stocks. NOAA Fisheries' recent determination to not list river herring as a threatened species under the Endangered Species Act (ESA) places an even greater emphasis on the need for collaborative efforts among all partners and stakeholders to ensure these species' recover. Here's a little bit about how we got to where we are and where we need to go.

In 2008, the Commission initiated a coastwide stock assessment for river herring, the collective term for alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*). Completed in 2012, the assessment found that the overall coastwide population was depleted to near historic lows due to a number of factors including overfishing, inadequate fish passage at dams, predation, pollution, water withdrawals, and climate change. As a result of the unique life history of river herring, where adults return to their natal rivers and streams to spawn, the assessment also focused on river-specific populations as well. The river-by-river assessment of 52 stocks found that more than half of the stocks did not have sufficient data to determine the status, and slightly less than half were considered depleted compared to historic levels. However, for those stocks with data available, recent trends showed a number of river-specific stocks stabilizing, and a few with increasing trends over the past decade.

In response to growing concerns over river herring populations, the Commission adopted Amendment 2 to the FMP. This Amendment prohibited directed catch of these species throughout most of the Atlantic coast beginning January 1, 2012, with the exception of limited, sustainable fisheries in Maine, New Hampshire, New York, North Carolina and South Carolina. However, river herring are taken as incidental catch in several federal waters fisheries; the extent to which this bycatch is affecting river herring stocks has not been quantified. Both the New England and Mid-Atlantic Fishery Management Councils have initiated actions to reduce the incidental catch of river herring in federal fisheries to complement the actions taken by the Commission in state waters.

As the assessment neared completion and new management measures were being developed, NOAA Fisheries was petitioned by the Natural Resources Defense Council to list river herring as threatened under the ESA either throughout their range or as distinct population segments. In response to the petition, NOAA Fisheries completed a lengthy and comprehensive review of the status of river herring as required by the ESA. The Commission was an active partner in developing the background information to support the ESA evaluation, and provided the results of its coastwide stock assessment to NOAA Fisheries for use in its status review evaluation. While the Commission's benchmark stock assessment contained much of the information necessary to evaluate the ESA listing determination, NOAA Fisheries addressed factors outside the scope of the assessment (i.e. climate change, stock delineation, and extinction risk) through focused workshops, working group meetings, and review of additional sources of information.

After a rigorous review of the available scientific information and catch data, NOAA Fisheries announced in August 2013 that listing alewife and blueback herring as threatened or endangered under the ESA is not warranted at this time. NOAA Fisheries also announced that funds will be provided to the Commission to work cooperatively to develop a long-term and dynamic conservation plan for river herring focused on addressing data gaps and proactively conserving river herring and their habitat. This work will attempt to quantify the impact of ongoing restoration and conservation efforts, assess new and pending fisheries management measures, and review results from ongoing research. NOAA Fisheries has also committed to working with stakeholders to continue implementing important conservation efforts and fund needed research for river herring.

The continued recovery of river herring populations will need to address multiple factors from habitat alterations, to predation by native and non-native predators, to exploitation by fisheries. This will require the collective efforts of many players including local, state, tribal, and federal partners. Having dedicated the past 30 years to the sustainable management of river herring, the Commission and the states look forward to working with NOAA Fisheries, U.S. Fish and Wildlife Service, Congress and other partners to develop a long-term and dynamic conservation plan for river herring throughout the species' range from Maine to Florida. This collaborative process will give us the best chance to fund the surveys and research that will ultimately advance our understanding of river herring stock status and support informed management decisions to restore this valuable fishery resource.

Bait, Birds and Biomedical: A Glimpse into the World of Horseshoe Crabs

Introduction

Horseshoe crabs (*Limulus polyphemus*) are utilized by a diverse range of interests, which makes management of the resource complicated but interesting. American eel and whelk fisheries use horseshoe crabs as their primary bait, but the crabs are also an important resource for migrating shorebirds and for the pharmaceutical industry. Red knots, a candidate species under the Endangered Species Act, feed on horseshoe crab eggs in the Delaware Bay on their long migration from South America to the Arctic. Horseshoe crab blood is used by the biomedical industry to produce Limulus Amoebocyte Lysate (LAL), an important tool for detecting contaminants in medical devices and drugs.

The Commission's Adaptive Resource Management (ARM) Framework takes into account these various uses of horseshoe crabs to set a sustainable harvest level. However, the future of this multi-tasking model is uncertain due to budget constraints that have curtailed the primary abundance survey used by the ARM, namely the Virginia Tech Horseshoe Crab Trawl Survey.

Life History

Horseshoe crabs are a marine arthropod found along the Atlantic coast from northern Maine to the Yucatan Peninsula and the Gulf of Mexico. Adults either remain in estuaries or migrate to the continental shelf during the winter months. Migrations resume in the spring when the horseshoe crabs move to beach areas to spawn. Juveniles hatch from the beach environment and spend the first two years in nearshore areas.

Spawning usually coincides with the high tide during the full and new moon. Breeding activity is consistently higher during a full moon and is also greater during the night. Adults prefer sandy beach areas within bays and coves that are protected from surf. Eggs are laid in clusters or nest sites along the beach with females laying approximately 90,000 eggs per year in different egg clusters (although only about ten will reach adulthood).

The eggs play an important ecological role in the food web for migrating shorebirds. The Delaware Bay Estuary is the largest staging area for shorebirds in the Atlantic Flyway. An estimated 425,000 to one million migratory shorebirds converge on the Delaware Bay to feed and rebuild energy reserves prior to completing their northward migration. It is estimated that red knots double their mass (by consuming horseshoe crab eggs) before they have sufficient fuel to complete the journey north.

Commercial Fisheries and Biomedical Harvest

In addition to their role as a food source for birds, horseshoe crabs provide bait for commercial American eel and whelk (also known as conch) fisheries along the coast. Their unique blood is also used by the biomedical industry to produce LAL.

In the early days of the horseshoe crab fishery (1850s-1920s), the species was primarily used for fertilizer and livestock, with annual landings of between 1.5 and 2 million crabs. Harvest was low for about twenty years, until the 1970s, when harvest ranged from 20,000 pounds to greater than two million pounds until the 1990s. Since the discovery of the success of horseshoe crabs as bait in the eel and whelk fisheries, commercial harvest has been used primarily for that purpose. Increased need for bait in the whelk fishery likely caused an increase in horseshoe crab harvest in the 1990s, with a peak of nearly six million pounds in 1997. Since that time, effective management has reduced the harvest of horseshoe crabs. Preliminary coastwide commercial landings for bait in 2012

Species Snapshot

Horseshoe Crab
Limulus polyphemus

Management Unit:
New Hampshire to Florida

Interesting Facts:

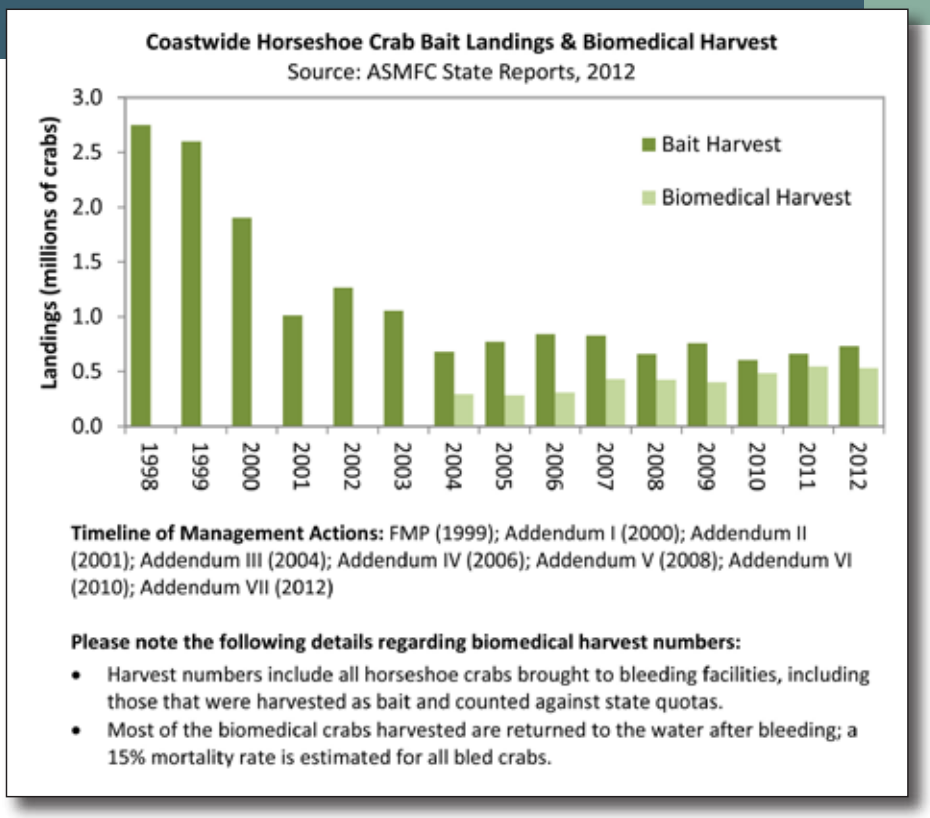
- Horseshoe crabs were once called "horsefoot crabs" because of their resemblance to a horse's hoof.
- Their scientific name "polyphemus" alludes to a one-eyed giant in Greek mythology, due to the fact that people thought they only had one eye (they actually have ten).
- Horseshoe crabs have existed for nearly 400 million years, predating flying insects, dinosaurs, and man.
- Horseshoe crabs are more closely related to spiders than crabs.
- There are 4 living species of horseshoe crabs and only 1 of those inhabits the western Atlantic Ocean. The other 3 are found in the Pacific Ocean.

Stock Status: Unknown

Photo by Laurel Wilkerson, USFWS

were approximately 729,000 horseshoe crabs. Trawls, hand harvests, and dredges make up the bulk of commercial horseshoe crab bait landings.

Horseshoe crabs are effective as bait in the whelk and eel fisheries because of a chemical cue that is released by their flesh. Recent research conducted at the University of Delaware found that less horseshoe crab tissue is needed than previously thought to successfully attract the target species. The research tested artificial bait, which is an alginate-based mixture with horseshoe crab tissue and Asian shore crab meat (an abundant invasive species, not to be confused with Asian horseshoe crab). The artificial bait, which uses a 50:50 mixture of horseshoe crabs to Asian shore crabs, was found to be as successful as the 100% horseshoe crab mixture. In addition, the research also determined that male horseshoe crabs can be used in the artificial bait, which eliminates the need for eel and whelk fishermen to target female horseshoe crabs. The research is encouraging for the conservation of horseshoe crabs because using the artificial bait may lead to reduced harvest pressure.



Horseshoe crabs are also collected by the biomedical industry to support the production of LAL, a clotting agent that aids in the detection of human pathogens in patients, drugs, and intravenous devices. No other procedure has the same accuracy as the LAL test. Blood from the horseshoe crab is obtained by collecting adults, extracting a portion of their blood, and releasing them alive. Following bleeding, most crabs are returned to the waters where they were captured. However, since 2004, states have the ability to enter bled crabs into the bait market and count those crabs against the bait quota. In recent years, the total estimate of horseshoe crabs caught for medical usage is around 500,000 per year on the Atlantic coast. Estimated mortality on biomedical crabs not counted against state bait quotas has increased from about 45,000 crabs in 2004 to approximately 80,000 crabs in 2012.

Stock Status

The status of the stock is unknown largely due to the lack of long-term data sets for commercial landings and stock abundance. However, the 2009 peer-reviewed benchmark stock assessment indicates that the Delaware Bay horseshoe crab population is experiencing positive population growth. Increasing trends were most evident for juveniles, followed by adult males. A significant increase in adult females was observed in the Virginia Tech Benthic Trawl Survey. These patterns are indicative of population recovery, given that horseshoe crab females take longer to mature than males. Positive trends in horseshoe crab numbers are also being seen in the Southeast region.

In contrast, the stock assessment showed declining abundance in New York and New England. Declines in the New England population were also apparent in the 2009 assessment. The Commission's Horseshoe Crab Technical Committee believes decreased harvest quotas in Delaware Bay encouraged increased harvest in nearby regions. The Technical Committee recommends continued precautionary management to address effects of redirected harvest from Delaware Bay to outlying populations. Since the 2008 fishing season, New York and Massachusetts continue to adjust their regulations to address recent increased harvest in their respective waters.

Horseshoe crabs are currently undergoing a stock assessment update. The report is expected to be available in October 2013.

Atlantic Coastal Management

Horseshoe crabs are managed under the Interstate Fishery Management Plan for Horseshoe Crab (December 1998). The Commission established state-by-state quotas in all Atlantic states for crabs harvested for bait under Addendum I (2000). In 2006, in response to decreasing migratory shorebird populations, Addendum IV was approved. This enabled the Commission to reduce quotas in New Jersey and Delaware and added additional protection in Maryland and Virginia to increase horseshoe crab and egg abundance in and around Delaware Bay. These measures were in place from 2006 – 2012. In 2012, using its ARM Framework, the Commission's Horseshoe Crab Management Board approved a harvest limit of 500,000 Delaware Bay male horseshoe crabs and zero female horseshoe crabs for the 2013 season. The ARM Framework, established through Addendum VII, incorporates both shorebird and horseshoe crab abundance levels to set optimized harvest levels for horseshoe crabs of Delaware Bay origin. It was developed

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ASMFC American Eel Board Seeks to Reduce Eel Mortality Across Multiple Life Stages

In August, the Commission's American Eel Management Board made progress in its efforts to reduce overall mortality of American eel through its approval of Addendum III to the Interstate Fishery Management Plan for American Eel and initiation of Draft Addendum IV. Given the scope of issues addressed in Draft Addendum III and the wide range of input received through public comment, the Board decided to divide the issues between the two addenda, with Draft Addendum IV primarily focusing on management measures for the glass eel fishery.

Addendum III establishes a 9-inch minimum size limit for recreational and commercial yellow eel fisheries, trip-level reporting for the commercial yellow eel fishery, and a 25 recreational fish per day creel limit. In addition, the Addendum requires all states and jurisdictions to implement a silver eel seasonal closure from September 1 to December 31 for any gear type other than baited traps/pots and spear fishing. While gear types, such as fyke nets, pound nets, and weirs, may still be fished, no retention of eels is allowed during the closed season. New York's Delaware River silver eel weir fishery is exempt from implementing this provision until January 1, 2015.

The Addendum restricts the development of fisheries on pigmented eels by establishing a tolerance limit of 25 pigmented eels per pound of glass eel catch. It also calls for the implementation of state-specific monitoring programs and provides recommendations for habitat improvements. States will be required to implement the Addendum's measures by January 1, 2014.

Draft Addendum IV will propose a suite of options to address the glass eel fishery. These include, but are not limited to, the allowance of glass eel fisheries in states where harvest is currently prohibited, a coastwide quota, monitoring requirements, enforcement measures and associated penalties, quota transferability, and timely reporting. The Draft Addendum will also include options for managing New York's Delaware River silver eel weir fishery. The Board will review and consider approval of Draft Addendum IV for public comment in October at the Commission's Annual Meeting. If approved, Draft Addendum IV will be released for public comment during late fall/early winter, with possible Board final action in February 2014 and the implementation of management measures in 2014.

The Board's actions respond to the findings of the 2012 benchmark stock assessment indicating the American eel population in U.S. waters is depleted. The stock has declined in recent decades and the prevalence of significant downward trends in

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Photo by Brian Gratwicke

ASMFC Workshop and Report Explore Current State of American Eel Fish Passage Technology

The Commission has released its latest report, *Proceedings of a Workshop on American Eel Passage Technologies.* The report summarizes the findings and recommendations of a July 2011 workshop that brought together over 120 biologists, engineers, and managers from around the world to explore the current state of eel passage at riverine migratory barriers.

The workshop and report respond to recent concerns regarding a decline in recruitment of American eels. Specifically addressed are the need to restore this species to historic habitats by providing passage for upstream migrant juveniles at riverine barriers, including dams, as well as the need to provide safe passage to spawning grounds for downstream migrant adults.

American eels are a catadromous species; they live in freshwater for the majority of their lives and migrate to the ocean to reproduce. Unpigmented juvenile eels, called glass eels, transported from the Sargasso Sea into freshwater systems along the coasts of the eastern Atlantic Ocean and Gulf of Mexico, migrate up rivers and streams to grow and mature. Some eels may even migrate over a thousand miles up river where there is the potential to encounter many man-made barriers. In freshwater, glass eels metamorphose into elvers and eventually yellow eels. When yellow eels mature and metamorphose into silver eels, they migrate down their natal streams and rivers to the Atlantic Ocean and eventually the Sargasso Sea to reproduce. If migration during one of these life history stages is impeded by a barrier, eel may not be able to reproduce and contribute offspring to the population. This unusual life history strategy requires unique upstream and

continued, see FISH PASSAGE, page 8

Atlantic Herring Addendum VI Refines Commission Specification Process

The Commission's Atlantic Herring Section approved Addendum VI to the Interstate Fishery Management Plan (FMP) for Atlantic Herring. The Addendum improves alignment between state and federal Atlantic herring management by allowing the use of consistent tools across all four management areas of the species range. The Addendum's measures include (1) seasonal splitting of the annual catch limit sub-components (sub-ACLs) for Areas 1B, 2, and 3; (2) up to 10% carry-over of a sub-ACL for all management areas; (3) the establishment of triggers to initiate the closing of directed fisheries, and (4) using the annual specification process to set triggers.

Addendum VI was developed to complement the New England Fishery Management Council's Framework 2, which was released as a proposed rule on August 2, with a comment period ending on September 3. While the current Interstate Atlantic Herring FMP provides states the flexibility to split quota in Area 1A, it does not include provisions for seasonal splitting in Areas 1B, 2, and 3. The Addendum allows for up to 10% of unused sub-ACL for all management areas to carry over from one year to the following year after final landings data have been released. This provision also allows unused quota to be rolled from one season to the next within the same fishing year.

The Addendum establishes triggers to close directed fisheries in a management area when 92% of a sub-ACL is projected to be reached and stock-wide when 95% of the ACL is projected to be reached. A 2,000 pound bycatch allowance continues after directed fisheries are closed. The 10% rollover provision is intended to provide greater flexibility to herring industry, while the triggers are intended to prevent overharvesting in individual management areas and coastwide. States must implement Addendum VI's measures on or before January 1, 2014.

The Addendum will available on the Commission website (www.asmfc.org) under *Breaking News* by mid-August. For more information, please contact Melissa Yuen, FMP Coordinator at myuen@asmfc.org or 703.842.0740.

ASMFC South Atlantic Board Approves Spanish Mackerel & Red Drum Addenda

Juvenile red drum captured as past of Georgia DNR's young-of-the-year survey. Photo Chris Kalinowsky, GA DNR

The Commission's South Atlantic State-Federal Fisheries Management Board approved two addenda – Addendum I to the Omnibus Amendment to the Interstate Fishery Management Plans (FMPs) for Spanish Mackerel, Spot, and Spotted Seatrout and Addendum I to Amendment 2 to the Interstate FMP for Red Drum.

Addendum I to the Omnibus Amendment establishes a pilot program that would allow states to reduce the Spanish mackerel minimum size limit for the commercial pound net fishery to 11 ½ inches during the summer months of July through September for the 2013 and 2014 fishing years only. The measure is intended to reduce waste of these shorter fish, which are discarded dead in the summer months, by converting them to landed fish that will be counted against the quota.

The Addendum responds to reports about the increased incidence of Spanish mackerel ¼ to ½ inch short of the 12-inch fork length minimum size limit in pound nets during the summer months. While the fish are alive in the pound, once the net is bunted and bailing commences, they die before being released. This may be due to a combination of temperature, stress and crowding. While individual fishermen have experimented with different wall or panel mesh sizes depending on the target species, there is no consistent use of cull panels. Those who have used cull panels have noted the difficulty and lack of success in being able to release the undersized fish quickly enough to prevent dead discards during this time of year.

The measure will only apply for the 2013 and 2014 fishing years after which the success of the program will be evaluated for consideration in years beyond 2014. Interested states would be required to notify the Commission of the specific time period it intends to use the minimum size limit exemption.

The Board also approved Addendum I to Amendment 2. The Addendum revises Amendment 2's habitat section to include current information on red drum spawning habitat and habitat by life stage (egg, larval, juvenile, sub-adult, and adult). It also identifies and describes the distribution of key habitats and habitats of concern, including threats, habitat bottlenecks (habitat or habitat characteristics that limit the sustainability or recovery of red drum), and ecosystem considerations.

Both addenda will be available on the Commission's website (www.asmfc.org) under *Breaking News* or by contacting the Commission at 703.842.0740. For more information, please contact Kirby Rootes-Murdy FMP Coordinator, at krootes-murdy@asmfc.org or 703.842.0740.

AMERICAN EEL, continued from page 6

multiple surveys across the coast is cause for concern. Causes of decline are likely due to a combination of historical overfishing, habitat loss, food web alterations, predation, turbine mortality, environmental changes, toxins and contaminants, and disease.

Commercial regulations vary by state. Glass eel fisheries currently occur in Maine and South Carolina. Significant yellow eel fisheries occur in New Jersey, Delaware, Maryland, the Potomac River, Virginia, and North Carolina. Although commercial fishery landings and effort in recent times have declined in most regions, current levels of fishing effort may still be too high given the depleted nature of the stock. Given the current status of the fishery and resource, the Board approved Addendum III in order to reduce overall mortality of American eel, and will consider further conservation measures in Draft Addendum IV.

Addendum III will be available on the Commission website (www.asmfc.org) under *Breaking News* or by contacting the Commission at 703.842.0740. For more information, please contact Kate Taylor, Senior FMP Coordinator, at ktaylor@asmfc.org or 703.842.0740.

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downstream passage technologies and considerations. Unfortunately, traditional upstream fish passage structures, such as fishways and fish lifts, are often ineffective passing juvenile eels, necessitating specialized passage structures. Glass eels and elvers migrate up streams differently than anadromous species targeted by traditional fishways. Eels often use substrate to move through swiftly flowing water and can even climb exposed substrates that have wetted surfaces, such as boulders. Although designs for eel passage structure options are available and diverse, many biologists, managers, and engineers are unfamiliar with eel pass age design and operation, or unaware of the available options.

Knowledge on downstream eel passage is not as advanced as knowledge on upstream passage and technologies need to be further developed and evaluated. Unlike upstream passage where eels are attracted to flows during spring migrations, timing and behavior during downstream migration is not well understood. In addition, downstream passage over barriers can be injurious or lethal to larger, silver eels. The spinning of turbines in hydroelectric dams can strike eels and falls over spillways can result in eel kills.

The workshop provided a forum for eel passage experts to share and discuss successful and ineffective passage technologies and evaluations from different parts of the world. General guidelines on the design and operation of upstream eel passage structures are covered in the report and examples with specifications are provided for a variety of budgets and barrier types. Current technologies and experiences with downstream passage were also discussed at the workshop and are highlighted in the report. Research needs and tough questions identified during the workshop are included to guide the next steps in improving both upstream and downstream eel passage. *Proceedings of a Workshop on American Eel Passage Technologies* is available of the Commission website at www.asmfc.org under *Breaking News*. For more information, please contact Jeff Kipp, Fish Passage Work Group Coordinator, at jkipp@asmfc.org or 703.842.0740.

American Lobster Addendum XXI Modifies Trap Transferability Program for Areas 2 & 3

The Commission's American Lobster Management Board approved Addendum XXI to Amendment 3 to the Interstate Fishery Management Plan for American Lobster. Addendum XXI implements changes to the transferability program for Lobster Conservation Management Areas (LCMAs) 2 (Southern New England) and 3 (offshore waters). These changes are designed to allow for flexibility in the movement of traps as the consolidation program for LCMAs 2 and 3 is implemented to address latent effort (unfished traps) in the fishery. The measures are also intended to provide a mechanism for industry to maintain a profitable fishery as trap reductions occur.

Under Addendum XXI, LCMA 2 and 3 fishermen purchasing traps with multi-area trap history may fish those traps in any area the traps have history. Previous regulations required recipients of partial trap transfers to choose a single LCMA the transferred traps are authorized to fish in. This new measure aligns the rules for the sale of partial traps with those for full business sales of multi-area history traps. For LCMA 2 only, the Board approved a single and aggregate ownership cap of 1,600 traps (800 active and 800 banked). The ownership cap allows for the purchase and accumulation of traps over and above the current LCMA 2 trap cap of 800 active traps. The single ownership cap sunsets two years after the last trap reduction occurs under Addendum XVIII. For LCMA 3 only, the Board approved an active trap cap of 2,000 traps, which will be reduced over five years to 1,548 traps (5% per year). The management measures contained in Addendum XXI will be implemented by November 1, 2013.

Photo by Dan McKiernan, MA DMF

ACCSP Announces Data Warehouse Upgrades

Public Access & Dynamic Data Refreshes Now Available

The Atlantic Coastal Cooperative Statistics Program (ACCSP) has launched the latest version of the Data Warehouse, an online database populated with fishery-dependent data supplied by the 23 program partners of ACCSP. The latest developments include providing users with 1) a query tool of the Data Warehouse for quick public access and 2) transparent and timely dataset updates to the Data Warehouse. The Data Warehouse now has the capability for immediate public access to non-confidential data, without the requirement of login credentials. This new Public Data Warehouse feature increases accessibility for first-time or less frequent visitors of the Data Warehouse. An additional time-saving feature of the Data Warehouse for users with login credentials (i.e., confidential or non-confidential account holders) is the ability to conveniently save personal queries.

Geoff White, ACCSP Data Team Leader who led the effort on these improvements, had this to say about the upgrades, "Upgrading the interface and infrastructure of the Data Warehouse now provides users with improved data access and query response times. Frequent users can save queries and thereby save time accessing information. The infrastructure changes are also environmentally friendly, since the data center now uses less electricity!"

Also, ACCSP is pleased to share a major advancement in informing users when data are integrated into the Data Warehouse. A dynamic webpage was produced for the purpose of updating the status of available data with dates for the latest refresh of non-confidential/confidential recreational and commercial catch and effort data in the Data Warehouse.

To login or access the Public Data Warehouse, please visit
http://www.accsp.org/dataware.htm

For the status of available data, please visit
http://mahi.accsp.org:8080/myJSPs/SOAD.jsp

For insight on how the data are loaded, please visit
http://www.accsp.org/dataloadprocess.html

ACCSP is a cooperative state-federal program to design, implement, and conduct marine fisheries statistics data collection programs and to integrate those data into a single data management system that will meet the needs of fishery managers, scientists, and fishermen. It is composed of representatives from natural resource management agencies coastwide, including ASMFC, the three Atlantic fishery management councils, the 15 Atlantic states, the Potomac River Fisheries Commission, the D.C. Fisheries and Wildlife Division, NOAA Fisheries, and the U.S. Fish & Wildlife Service. For more information, please visit www.accsp.org or contact Ann McElhatton, Program Manager, at ann.mcelhatton@accsp.org or 703.842.0780.

On The Legislative Front

Fiscal Year 2014 Appropriations

Since the last issue of *Fisheries Focus*, the House and Senate have both passed their Fiscal Year (FY) 2014 Commerce, Justice, Science Appropriations bills, which fund NOAA and provide the majority of the Commission's federal dollars. The appropriated amounts for "Interjurisdictional Fisheries Act" grants are $2 million in the House and $2.5 million in the Senate, and "Regional Councils and Fishery Commissions" funding is up to approximately $32 million in both chambers. Additionally, the Senate bill contained some fishery-related appropriations riders:

- A requirement for NOAA to contract fishing boats to carry out some fish stock assessments
- A mandate for NOAA to cover the cost of all on-board monitors
- A rider barring NOAA from diverting Saltonstall-Kennedy Act money for internal management

Congress has yet to pass any of the 12 annual appropriations bills for FY 2014 and, barring a last minute deal, it is likely the government will be funded through a temporary extension of FY 2013 sequester spending levels. When Congress returns from its August recess, only nine working days remain of the FY ending September 30.

Magnuson-Stevens Reauthorization

Both the House of Representatives and Senate continue to hold hearings to gather perspectives from fishery stakeholders and managers in preparation for reauthorizing the Magnuson-Stevens Act. The current authorization of the bill will expire on September 30, 2013. While both chambers have held a number of informational hearings, neither has yet produced a bill. Senator Mark Begich (D-AK), Chairman of the Senate Subcommittee charged with writing the legislation in that chamber, has stated the Senate will be moving systematically to reauthorize Magnuson-Stevens and will not rush the process in order to meet the September 30 deadline. Look for more hearings to be scheduled later this fall in both chambers.

"Councils and Commissions" and "Interjurisdictional Fisheries Act" Historical Funding Levels ($ thousands)

Fiscal Year	Councils and Commissions	Interjurisdictional Fisheries Act
FY 2008	25,701	2,506
FY 2009	27,289	2,569
FY 2010	31,855	2,574
FY 2011	31.855	1,653
FY2012	31,754	0
FY 2013 enacted	31,555	2,000
House FY 2014	32,000	2,000
Senate FY 2014	32,008	2,500
President FY 2014	31,000	2,500

**FY 2013 and 2014 amounts shown do not indicate reductions resulting from the Budget Control Act sequester.*

Proposed Management Actions

Two Draft Addenda are currently available for public comment and can be found on the Commission website (www.asmfc.org) under "Breaking News." Fishermen and other interested groups are encouraged to provide input on the Draft Addendum either by attending state public hearings or providing written comment. Comments may be submitted to the Commission via email at comments@asmfc.org or by mail at 1050 N. Highland Street, Suite 200 A-N, Arlington, VA, 22201. The respective management boards will review submitted public comment as well as input from its advisory panels, technical committees, and the Law Enforcement Committee and consider final action on the Draft Addenda at the Commission's Annual Meeting in St. Simons Island, GA. Below is a brief overview of the proposed actions.

Coastal Sharks Draft Addendum III

Draft Addendum III to the Interstate Fishery Management Plan (FMP) for Atlantic Coastal Sharks proposes changes to the coastal shark species groupings for hammerhead and blacknose sharks and the establishment of a new commercial quota and recreational size limit for hammerhead sharks.

The Draft Addendum was initiated to ensure consistency between the state and federal coastal shark plans. The federal Highly Migratory Species FMP was amended to address recent findings that scalloped hammerhead, blacknose, and sandbar sharks are overfished and/or experiencing overfishing. Specifically, Amendment 5a changed the coastal shark species groupings for hammerhead and blacknose sharks and established a new commercial quota and recreational size limit for hammerhead sharks.

Photo (c) Terry Goss 2008/ Marine Photobank

Draft Addendum III proposes to remove all hammerheads (i.e., great, scalloped, and smooth) from the "Non-Sandbar Large Coastal Sharks" group and move them under the "Hammerheads" group due to the difficultly in differentiating between various hammerhead species particularly when dressed. The Draft Addendum also proposes removing blacknose sharks from the "Small Coastal Sharks" group and placing them under the "Blacknose Shark" group. Finetooth, bonnethead and Atlantic sharpnose would remain in the "Non-Blacknose Small Coastal Sharks" species group.

Further, the Draft Addendum considers a new recreational size limit of 78 inches fork length for all hammerhead sharks based on research which found female scalloped hammerhead sharks reach maturity at 78 inches. The proposed measure is intended to limit the retention of immature female hammerheads. It is anticipated that several states will be conducting public hearings on the Draft Addendum; information on those hearings will be released when it is finalized. Public comment will be accepted until 5:00 PM (EST) on September 25, 2013.

American Lobster Draft Addendum XXII

Draft Addendum XXII to Amendment 3 to the Interstate Fishery Management Plan for American Lobster addresses issues pertaining to single and aggregate ownership caps in Lobster Conservation Management Area (LCMA) 3. These issues were originally presented in Draft Addendum XXI (see page XX for final action) but were moved into Draft Addendum XXII for further exploration and public comment as well as clarify the resulting trap limits after trap reductions are implemented. Public comment will be accepted until 5:00 PM (EST) on October 7, 2013.

Comings & Goings

Commissioners

SEN. PHILIP BOYLE has been appointed as NY's Legislative Commissioner to the ASMFC. Elected to the NY Senate in 2012, Sen. Boyle represents the 4th State Senate District, which includes Islip and West Babylon. Active in legislative issues for more than two decades, Sen. Boyle has been involved at both the state and federal levels, serving terms in the state's Senate and Assembly, as well as a senior staffer on Capitol Hill.

SEN. SUSAN SOSNOWSKI, who has served on the RI Senate since 1996, returns to the Commission as the state's Legislative Commissioner. She previously served on the ASMFC from 2008 - 2010. Sen. Sosnowski serves on the Clean Water Finance Agency and the Coastal Resources Management Council.

Welcome to the Commission, Senators Boyle and Sosnowski!

REP. PETER F. MARTIN departs after three years as RI's Legislative Commissioner. Rep. Martin actively participated in the activities of the Legislators and Governors' Appointees, which has focused on ways to promote the value and benefits of the Commission at the state and federal levels. We wish Rep. Martin the very best in all his future endeavors.

Staff

SHANNA MADSEN joins the Commission as its Fisheries Science Coordinator. Shanna comes to us from the Environmental Cooperative Science Center (a branch of NOAA's Education Partnership Program), where she worked on the Mission-Aransas National Estuarine Research Reserve in Port Aransas, Texas. Shanna received a Master of Science in Marine Science from the University of South Alabama and a Bachelor of Science in Marine Science from SUNY at Stony Brook. Welcome to the Commission, Shanna!

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HORSESHOE CRAB, continued from page 5

in recognition of the relationship between horseshoe crab eggs and shorebirds in the Delaware Bay Region. The optimized harvest level is reevaluated annually, allowing for management to adapt to the changes in the population levels of horseshoe crabs and shorebirds as a result of the regulations. This model depends on the data obtained from the Virginia Tech Trawl Survey. In 2012, the survey was unable to sample the entire Delaware Bay area. In 2013, there is not enough funding for the trawl survey to occur. In the absence of this data, the ARM Working Group is exploring other options that would provide similar abundance estimates. These options include the fall Northeast Area Monitoring and Assessment Program survey and/or using mark-resight data from the spawning survey.

The uncertainty in the stock status of horseshoe crabs has moved some states to adopt more conservative management than is outlined in Addendum VII. For example, there has been a moratorium on horseshoe crab harvest in New Jersey since 2008. This moratorium has had impacts to surrounding states, increasing the occurrence of poaching and driving up the market price of crabs. In addition, the harvest controls on the Atlantic states have made it difficult for some whelk and eel fishermen to obtain enough bait for their use. Some fishermen have turned to using imported Asian horseshoe crabs as bait. The Commission has released a resolution expressing concern over this practice for a variety of human health and ecological reasons (see right). For more information, please contact Marin Hawk, FMP Coordinator, at mhawk@asmfc.org or 703.842.0740.

Resolution to Ban the Import and Use of Asian Horseshoe Crabs as Bait

Whereas, the Atlantic States Marine Fisheries Commission is comprised of representatives of the fifteen Atlantic coastal states and is charged with management of fisheries resources, marine, shell, and anadromous; and

Whereas, one of those fisheries resources is the Atlantic horseshoe crab (*Limulus polyphemus*) which is managed for its ecological services, use as bait, and in the biomedical industry; and

Whereas, horseshoe crabs are used as bait in fisheries for American eel and whelk fisheries; and

Whereas, bait shortages motivated seafood dealers in the State of New York to import 2,000 non-native Asian horseshoe crabs in 2011, and 7,400 kilograms of non-native Asian horseshoe crabs in 2012 for use as bait in state waters; and

Whereas, three species of Asian horseshoe crabs (*Tachypleus gigas, Carcinoscorpius rotundicauda*, and *Tachypleus tridentatus*) pose a potential threat to the marine resources and human health along the US Atlantic coast; and

Whereas, recent evidence presented in 2011 suggests that the populations of these three species of Asian horseshoe crabs are in decline; and

Whereas, it will take the US Fish and Wildlife Service up to a year to add the species to the Injurious Wildlife list of the Lacey Act so importation can be regulated on a federal level; and

Whereas, in the meantime measures should be put in place to address the issue; and

Whereas, one species of parasitic flatworm lays eggs in tough cocoons on the shell of the Asian horseshoe crab, which can easily survive and hatch even if the host crab is killed; and

Whereas, the introduction of such or similar parasites would have detrimental effects on the American horseshoe crab population, and

Whereas, detrimental impacts on American horseshoe crab populations will likely impact food availability for migratory shorebirds, including red knots; and

Whereas, one species of Asian horseshoe crab (*C. rotundicauda*) is known to contain the powerful, potentially painful, neurotoxin tetrodotoxin (TTX); and,

Whereas, the potential for TTX accumulation in commonly consumed seafood product (whelk and eel) and subsequent human illness is unknown; and

Now, therefore be it resolved ***that the Commission's Horseshoe Crab Management Board recommend to its member states that they take any and all action to ban the importation and use of Asian horseshoe crabs as bait as soon as possible.***

COMINGS & GOINGS, continued from page 10

MELISSA PAINE will be leaving the Commission after seven years of being an important contributor to the Commission's scientific activities. Among her many contributions, Melissa led the development of coastwide research priorities for all ASMFC species, initiated the Commission's evaluation of climate change impacts to stock distributions, and assisted in writing the new Benchmark Assessment Framework and Reference Points Guidance documents. Melissa played a key role in coordinating the activities of both the Southeast Area Monitoring and Assessment Program (SEAMAP), particularly the South Atlantic component, and the Northeast Area Monitoring and Assessment Program (NEAMAP). She advanced the data management strategies and outreach tools (revamped websites) for both programs, oversaw the development of the SEAMAP's current 5-Year Management Plan, and coordinated the external peer review of NEAMAP's SNE/MA Survey. She also started the ASMFC Mid-Atlantic Trawl Fishery Observer Program through grant awards from the ACCSP. Melissa's commitment to excellence and teamwork as well as her generous and joyful spirit will be greatly missed. We wish her the very best!

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Toni Kerns Recognized for 10 Years of Service

In August at the Commission's Summer Meeting, Commissioners and staff recognized Toni Kerns for her 10 years of dedicated service to the Commission.

Toni first joined the Commission as a Fishery Management Plan (FMP) Coordinator, responsible for coordinating management programs of several key and highly complex species including bluefish, summer flounder, scup, black sea bass, and American lobster. As FMP Coordinator, she worked cooperatively with the states and the Mid-Atlantic Fishery Management Council to craft measures that led to the rebuilding of all four of the Commission's Mid-Atlantic species. She also oversaw the successful completion of two American lobster benchmark stock assessments, the adoption of new reference points to manage the resource, and the development of a rebuilding program for the Southern New England stock.

In 2006, Toni was promoted to Senior FMP Coordinator, assisting in the oversight and coordination of the Interstate Fisheries Management Program (ISFMP) as well as the mentoring of new FMP Coordinators. The dedication of her time, expertise, and support has played an important role in ensuring the success of new FMP Coordinators and, in turn, the species management programs they coordinate. Earlier this year, in recognition of her in-depth knowledge of Atlantic coastal fisheries issues, her long-standing commitment to the Commission's stewardship responsibilities, and her strong work ethic was promoted to ISFMP Director. Congratulations, Toni!

Photo by ASMFC