



ASMFC

FISHERIES *focus*

Vision: Sustainably Managing Atlantic Coastal Fisheries

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Douglas Grout Elected ASMFC Chair

On November 4th, member states of the Atlantic States Marine Fisheries Commission acknowledged the many accomplishments of outgoing Chair, Dr. Louis B. Daniel of North Carolina and elected Douglas Grout of New Hampshire as its new Chair.

In assuming the chairmanship, Mr. Grout spoke enthusiastically about his new position, "I am honored to be elected by my colleagues from the 15 Atlantic coast states, and pledge to uphold the trust they have placed in me as I serve my term chairing the Commission. Under my watch, I will work to lead the Commission responsibly through the many challenges inherent in managing our nation's coastal fisheries. I look forward to working closely with the Commission's management partners and will ensure the voices of our many stakeholders are heard."

"My predecessor, Louis Daniel, has cemented his legacy as a champion of marine fisheries and a role model to those they support by guiding the Commission through two productive years that included major management decisions for two of the Atlantic coast's most iconic species, Atlantic striped bass and Atlantic menhaden. Evidenced by the fact that a record number of Commission-managed fisheries are thriving, Louis never backed away from making tough decisions and always did what he believed to be the right thing. Under his leadership, the Commission transitioned smoothly through a period of major staff turnover, avoided an Endangered Species Act listing of American eel, and completed numerous benchmark stock assessments. In a tough fiscal environment, he also fought to provide the states with the resources they needed to get the job done."

Mr. Grout currently serves as the Chief of the Marine Fisheries Division of the New Hampshire Fish and Game Department where he has worked for over 30 years. He has been actively involved in the Commission process for many years, beginning in 1988 serving on the Management and Science Committee and numerous species technical committees. He received the Commission's Award of Excellence in the Scientific/Technical/Advisory category in 2005. As a Commissioner, he has chaired the Northern Shrimp Section, the American Lobster Board, and most recently, the Atlantic Striped Bass Board. Mr. Grout received his M.S. and B.S. in Zoology from the University of New Hampshire and is an American Fisheries Society Certified Fisheries Scientist.

The Commission also elected James Gilmore from New York as its Vice-Chair. Mr. Gilmore is the Director of Marine Resources for the New York State Department of Environmental Conservation.



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.

Atlantic States Marine Fisheries Commission

Douglas E. Grout (NH)
Chair

James J. Gilmore, Jr. (NY)
Vice-Chair

Robert E. Beal
Executive Director

Patrick A. Campfield
Science Director

Toni Kerns
ISFMP Director

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December 1 (10 AM - Noon)

American Lobster Technical Committee Webinar/Conference Call; go to <http://www.asmfc.org/calendar/> for more details.

December 1 - 3

New England Fishery Management Council, Holiday Inn by the Bay, Portland, ME.

December 7 (9:30 - 11:30 AM)

Northern Shrimp Advisory Panel, Urban Forestry Center, 45 Elwyn Road, Portsmouth, NH.

December 7 (1 - 4 PM)

Northern Shrimp Section, Urban Forestry Center, 45 Elwyn Road, Portsmouth, NH.

December 7 (Noon - 4 PM)

American Lobster Advisory Panel, Hilton Garden Inn Plymouth, 4 Home Depot Drive, Plymouth, MA.

December 7 - 11

South Atlantic Fishery Management Council, Doubletree by Hilton Oceanfront Hotel, 2717 W. Fort Macon Road, Atlantic Beach, NC.

December 8 (9 AM - 4 PM)

American Lobster Technical Committee, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA.

December 8 - 10

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

December 10 (1 - 3 PM)

Spot & Atlantic Croaker Stock Assessment Subcommittee Webinar/Conference Call; go to <http://www.asmfc.org/calendar/> for more details.

2016

January 26 - 28

New England Fishery Management Council, Sheraton Harborside, Portsmouth, NH.

February 2 - 4

ASMFC Winter Meeting, The Westin Alexandria, 400 Courthouse Square, Alexandria, VA.

February 9 - 11

Mid-Atlantic Fishery Management Council, DoubleTree by Hilton New Bern-Riverfront, New Bern, NC.

March 7 - 11

South Atlantic Fishery Management Council, Westin Jekyll Island, 110 Ocean Way, Jekyll Island, GA.

April 12 - 14

Mid-Atlantic Fishery Management Council, Montauk Yacht Club, Montauk, NY.

April 19 - 21

New England Fishery Management Council, Hilton Hotel, Mystic, CT.

May 2 - 5

ASMFC Winter Meeting, The Westin Alexandria, 400 Courthouse Square, Alexandria, VA.

June 13 - 17

South Atlantic Fishery Management Council, Hilton Cocoa Beach Oceanfront, 1550 N. Atlantic Avenue, Cocoa Beach, FL.

June 21 - 23

New England Fishery Management Council, Holiday Inn by the Bay, Portland, ME



Warming Waters Pose Difficult Questions

The Gulf of Maine is getting warmer. At a faster pace than almost anywhere else on the planet. The fish have taken notice and they're on the move.

In New England, Gulf Stream changes are exacerbating the steady climb of temperatures across the globe and this new reality is already challenging fishery managers. The most visible signs are habitat transformation, shifts in historical stock ranges, changing productivity, and spawning success in the region. American lobsters are moving away from their once productive Southern New England grounds, black sea bass are being caught in numbers never before seen north of Cape Cod, and northern shrimp are migrating northward into Canadian waters – all in pursuit of colder, more nutrient rich water.

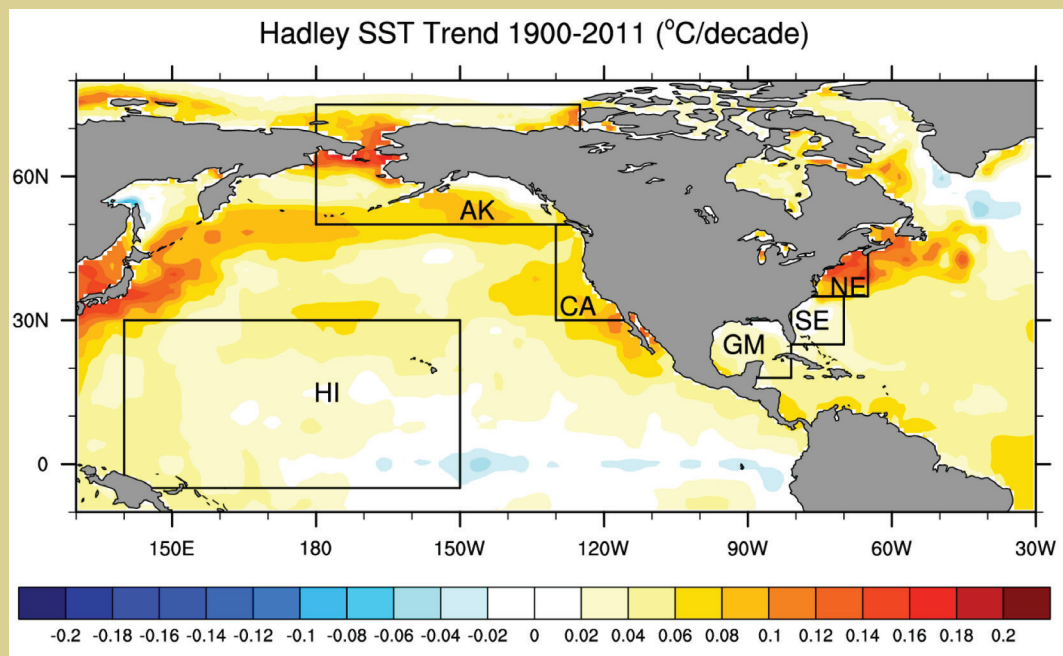
As more and more species respond to environmental changes, so too are their managers. The Commission, NOAA Fisheries, and the regional fishery management councils along the Atlantic are all studying changes in the ocean environment and assessing management solutions that meet current challenges and those on the horizon. Last year, the Commission's Management and Science Committee reported on changing stock distributions and possible management responses – including the third rail of fisheries management, allocation.

With stock distributions and productivity changing, there is a need to reassess current management plans and allocations. The Commission's 2016 Action Plan is already tackling the issue – by developing an addendum for Southern New England to respond to the results of the 2015 benchmark stock assessment in Lobster Conservation Management Areas 2, 3, 4, 5, and 6; by enacting and possibly extending a two-year moratorium on northern shrimp; and by developing a new black sea bass stock assessment to capture the increased abundance and range.

The Commission recently added Maine and New Hampshire to the management board governing black sea bass and stands ready to add states to other management boards when the need arises. Managers are also exploring ways to deal with ocean acidification and invasive species like green crab that have arisen in response to the warmer waters in New England.

For species like Southern New England lobster and northern shrimp, difficult choices must be made. Even in the absence of fishing pressure, there is concern they may never rebuild to historical levels. Undoubtedly, managers have tough decisions ahead – can we restore stocks like these through restrictive fishery management measures or should the remaining fishing fleet be allowed to harvest these fisheries until there is no economic incentive to do so?

Commission management will continue to evolve as habitats on the East Coast change. We'll strive to balance human needs with environmental restrictions. The pursuit of our Vision, *Sustainably Managing Atlantic Coastal Fisheries*, will not change. New England remains one of the most productive fishing areas in the U.S. and with hard work and robust science, the Commission will do all it can to keep it that way.



Rate of change in global sea surface temperatures/decade from 1900- 2011. Note the high rate of change in waters off New England. Image (c) NOAA.

Species Profile: American Lobster

A Tale of Two Stocks

Introduction

With roughly 150 million pounds of lobster landed in 2014, the American lobster fishery has experienced significant growth in the past 40 years. However, results from the 2015 stock assessment showed a mixed picture of stock status. In the Gulf of Maine and Georges Bank, the stock is experiencing record high abundance and recruitment. This is in contrast to the Southern New England stock which is at record low abundance and experiencing recruitment failure. Environmental changes, such as higher water temperatures, in concert with fishing mortality have been identified as principal causes of the poor stock condition in SNE. Interestingly, environmental changes have been generally favorable in GOM/GBK, where warmer water temperatures have increased the number of days in the species' optimal temperature range.

Following the presentation of the 2015 Stock Assessment, the Board convened a SNE working group comprised of Commissioners, industry representatives, technical committee members, and federal representatives. The goal of the working group is to identify goals for future management in Southern New England.

Life History

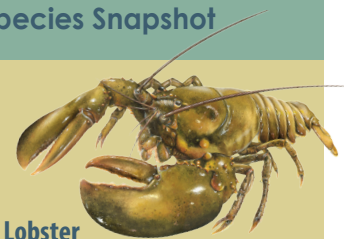
American lobster is a bottom-dwelling crustacean that is widely distributed over the continental shelf of North America. In the inshore waters of the U.S., it is most abundant from Maine through New Jersey, with abundance declining from north to south. Offshore, it occurs from Maine through North Carolina. The species was historically divided into three biological stock areas which included the Gulf of Maine (GOM), Georges Bank (GBK), and Southern New England (SNE). However, data showing evidence of significant seasonal migrations of large female lobsters between GOM and GBK proved these two stocks are not closed populations. As a result, the GOM and GBK were combined into a single biological unit.

Lobsters are solitary and territorial, living in a variety of habitats as long as there is a burrow or crevice where they can take cover. They usually remain within a home range of about 5-10 square km. In offshore areas, large mature lobsters make seasonal migrations inshore to reproduce. In southern inshore areas, large lobsters may move to deeper, cooler waters seasonally or permanently.

Reproduction and growth are linked to the molting (shedding of their shell) cycle. Lobsters have hard external skeletons (shell) that provide protection and body support. Lobsters periodically shed their shell to allow their body size to increase and mating to occur. Sperm is deposited in "soft" (recently molted) females and stored internally until extrusion, which can extend for two years. When extruded, the eggs are fertilized and attached to the underside of the female, where they are carried for nine to 11 months before hatching. Females hatch their eggs from mid-May to mid-June. Lobster larvae transition through five stages. For the first four stages larvae are planktonic, swimming at or near the water surface. At the fifth larval stage, juveniles sink to the ocean floor where they remain for the rest of their lifetime. Lobsters reach market size in about four to nine years, depending on water temperature and other biological factors.

Temperature is an important factor which influences lobster metabolism, spawning, development, and growth. When a

Species Snapshot



American Lobster
Homarus americanus

Interesting Facts:

- Lobsters smell food with small hairs covering their bodies and 4 small antennae.
- Lobsters' teeth are in their stomachs.
- Lobsters molt in order to grow. In the 1st year, a lobster molts 10 times to reach a length of 1 - 1 ½".
- A lobster that has lost 1 claw is called a cull. One that has lost 2 claws is called a bullet. Lobsters can regenerate new claws, legs, and antennae.
- Only 1 out of 2 million lobsters caught is blue in color.

Largest & Oldest Recorded: 44 lbs.

Maximum Age: A method to determine the exact age of a lobster has not been discovered. Based on knowledge of body size at age, the maximum age attained may be 100 years.

Stock Status:

- GOM/GBK: Not depleted and not experiencing overfishing
- SNE: Depleted and not experiencing overfishing



female lobster extrudes eggs, temperature directly impacts the length of time the eggs are carried until hatching occurs, when surface water temperatures are above 12°C. Lobsters generally avoid water temperatures below 5°C and above 18°C. Prolonged temperatures above 20.5°C can induce respiratory stress in lobsters and have been shown to increase the incidence of shell disease.

Recreational & Commercial Fisheries

The lobster fishery has seen incredible expansion in landings over the last 40 years. From 1976 – 2008, average coastwide landings tripled, reaching 92 million pounds in 2006. Since 2008, total coastwide landings have further increased to just under 150 million pounds in 2012. These high landings have been sustained in 2013 and 2014.

In 2014, approximately 94% of lobsters were caught in the waters of Maine and Massachusetts, with the two states accounting for 84% and 10% of the commercial landings, respectively. New Hampshire accounted for 3% of landings with roughly 5 million pounds in 2014. Landings in the SNE stock area have been declining since the late 1990s from highs of approximately 20 million pounds to lows of roughly 3.3 million pounds in 2013.

Lobster pots are the predominant commercial gear, with a small percent of the landings being caught by trawls. Lobster is also taken recreationally with pots and by hand while SCUBA diving. The magnitude of recreational landings is unknown.

Status of the Stock

The 2015 American Lobster Benchmark Stock Assessment and Peer Review Report indicates the American lobster resource presents a mixed picture of stock status, with record high stock abundance and recruitment in GOM and GBK, and record low abundance and recruitment in SNE. The GOM/GBK stock is not overfished and not experiencing overfishing. Conversely, the SNE stock is severely depleted with poor prospects of recovery, necessitating protection.

Gulf of Maine/Georges Bank

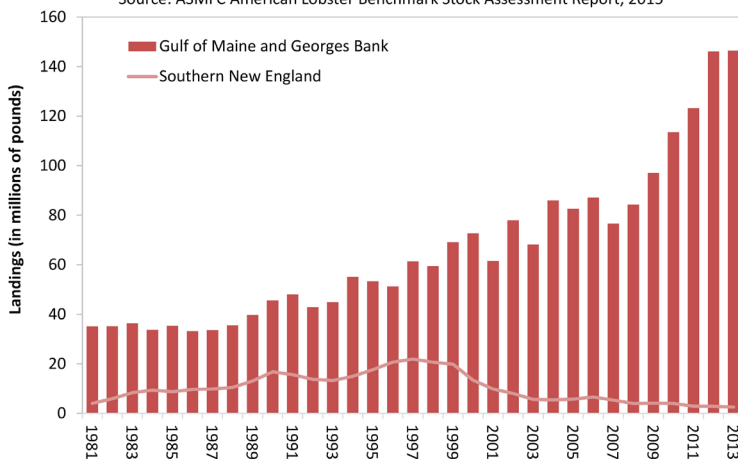
GOM/GBK stock abundance has increased since 1979, and at an accelerated pace since 2007. Recruitment and spawning stock abundance have remained high between 2008 and 2013. Current stock abundance is at an all-time high. Exploitation (fishing mortality) declined after 1979 until the mid-1990s and then remained stable with higher exploitation on males than females. Current exploitation rates remain on par with the 2008-2013 average.

Southern New England

SNE stock abundance increased from the early 1980s, peaked during the late 1990s, then declined steeply through the early 2000s to a record low in 2013. Both the assessment and peer review support the finding that the SNE stock is severely depleted. Declines in population abundance are most pronounced in the inshore portion of the stock where environmental conditions have remained unfavorable to lobsters since the late 1990s. The stock has collapsed and is undergoing recruitment failure. Despite attrition among the fleet and fewer traps fished for lobster, declines have continued. These declines are largely

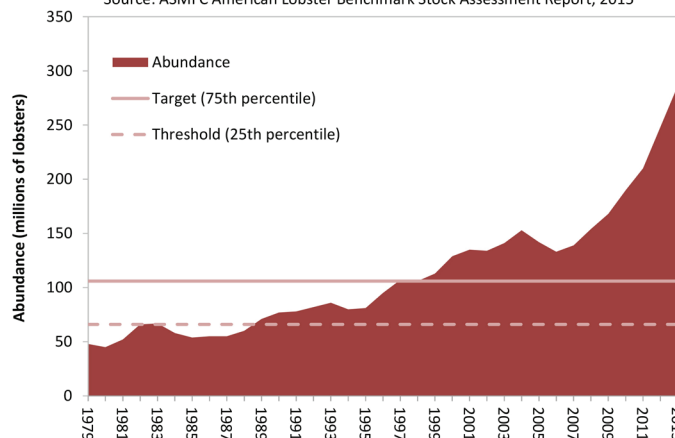
American Lobster Landings by Stock Area

Source: ASMFC American Lobster Benchmark Stock Assessment Report, 2015



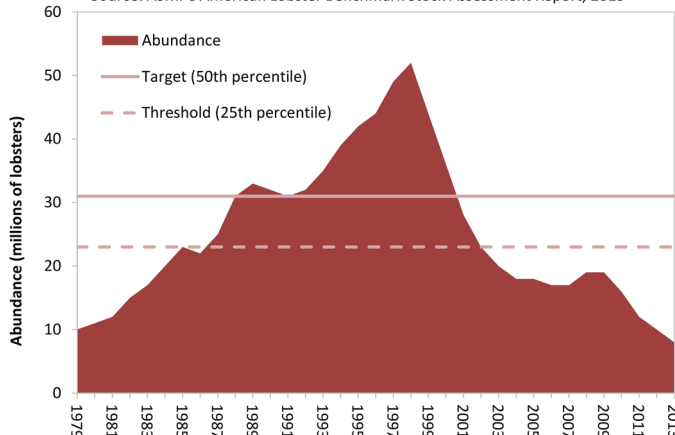
American Lobster Abundance for the Gulf of Maine and Georges Bank Stock Unit

Source: ASMFC American Lobster Benchmark Stock Assessment Report, 2015



American Lobster Abundance for the Southern New England Stock Unit

Source: ASMFC American Lobster Benchmark Stock Assessment Report, 2015



continued, see AMERICAN LOBSTER on page 8

ASMFC Presents Willard Cole Prestigious Captain David H. Hart Award

The Commission presented Willard “Bill” Cole, formerly with the U.S. Fish and Wildlife Service, the Captain David H. Hart Award, its highest annual award, at the Commission’s 74th Annual Meeting in St. Augustine, FL.

Throughout his nearly 40-year career as a state, university, and federal fishery manager and scientist, Bill Cole worked to protect, restore, and conserve fisheries resources and their habitats along the Atlantic coast. Bill graduated from North Carolina State University in 1966 and moved to Lake City, Florida, where he began his career with the Florida Game and Freshwater Fish Commission. Shortly after, he joined the U.S. Fish and Wildlife Service (USFWS), where he stayed for the remainder of his career. At USFWS, Bill served in different capacities and numerous offices from North Carolina to New York, DC, Texas and even New Mexico. In each place he left an indelible mark; serving on review teams for the first Everglades study, developing the Navigable Waters Handbook; protecting riverine, wetland, and coastal habitats in Long Island Sound, the Hudson River, and St. Lawrence Seaway; and establishing what ultimately would become the USFWS South Atlantic Fish and Wildlife Conservation Office. While with the South Atlantic Office, he worked closely with the State of North Carolina to restore anadromous fishery resources throughout the Albemarle and Pamlico Sounds,

once the site of the largest commercial American shad and river herring fisheries on the entire East Coast.

With his customary vision, Bill understood early on that management of fishery resources in North Carolina required participation in regional fishery management institutions as well. As such, he became involved with both the South Atlantic Fishery Management Council and the Commission, serving as the Southeast Regional Director’s designee for both institutions. He served in that capacity continuously for 19 years. Bill served on numerous committees and management boards for both groups, and prior to his retirement served as Chair of the Commission’s South Atlantic State-Federal Fisheries Management Board.

Along with several colleagues, Bill conceived the Cooperative Winter Tagging Cruise off North Carolina and Virginia. The Cruise was designed to tag striped bass in a mixed stock of migratory fish wintering off the North Carolina Outer Banks and southern Virginia as a part of the Commission’s Atlantic migratory striped bass management program. The Cruise began in 1988 and has been conducted annually with few interruptions. It is one of the longest time-series of any such coastal tagging program, as well as one of the most effective federal, state, and academic partnerships. Bill served as Chief Scientist on all but two of the cruises during an 18 year period, and annually coordinated scheduling, equipment acquisition, and recruitment of all Scientific Party members. Through the years, tagging of additional ASMFC- and Council-managed species was added to the Cruise protocol. To date, the Cruise has tagged 252 Atlantic sturgeon and over 47,000 striped bass, with a tag return rate approaching 20 percent.

Bill is a charter member of the Atlantic Coastal Cooperative Statistics Program Operations Committee, and has been an ardent supporter of the Program since its inception, providing staff to serve



as the initial Program Coordinator, and working tirelessly with federal and state partners to move the program forward.

Finally, during his last year with USFWS, Bill was detailed to the National Marine Fisheries Service, where he served as Special Assistant to the Assistant Administrator for Fisheries, Dr. William Hogarth. Bill was a key element in the planning of several national-level meetings that brought together fisheries professionals from Regional Fishery Management Councils and Interstate Fisheries Management Commissions to consider the future directions of fisheries management.

Bill has characterized himself as a “biopolitician,” but his contribution to the management of U.S. East Coast fisheries goes well beyond his many notable accomplishments. Bill has been a true friend and mentor to many in our fisheries management family and we are deeply indebted to him. Since Bill was unable to attend the Hart Award ceremony, Dr. Wilson Laney, a longtime colleague and friend, accepted the award on Bill’s behalf.

The Commission instituted the Award in 1991 to recognize individuals who have made outstanding efforts to improve Atlantic coast marine fisheries. The Hart Award is named for one of the Commission’s longest serving members, who dedicated himself to the advancement and protection of marine fishery resources.



Bill with longtime colleague Sara Winslow on the 2002 SEAMAP Winter Cooperative Tagging Cruise.

Atlantic Herring

On November 2nd, the Atlantic Herring Section approved the Public Hearing Document for Draft Amendment 3 to the Interstate Fishery Management Plan (FMP) for Atlantic Herring for public comment. Draft Amendment 3 was initiated to strengthen spawning protections in Area 1A (inshore Gulf of Maine) and address concerns raised by the commercial fishing industry. The Public Hearing Document proposes (1) alternatives to the spawning monitoring program (protocol, default start dates, area boundaries, and length of the closure period); (2) removing the fixed gear set-aside rollover provision; and (3) requiring a vessel's fish hold to be emptied before leaving on a fishing trip.

Today's rebuilt herring population is comprised of a broader range of age classes with older and larger fish compared to the population during overfished conditions. Analysis of more than a decade's worth of data suggests larger herring spawn first, and the timing of the start of spawning varies from year-to-year. Proposed alternatives to the current spawning monitoring program address annual differences and provide additional measures to more adequately protect spawning fish.

At the request of the fishing industry, the Public Hearing Document includes an option to adjust the fixed gear set-aside rollover provision. Currently, the set-aside of 295 mt is available to fixed gear fishermen through November 1, after which the remaining set-aside becomes available to the rest of the Area 1A fishery. The November 1 date was set because, typically, herring have migrated out of the Gulf of Maine by that time. Anecdotal evidence suggests herring are in the Gulf of Maine after November 1, therefore, fixed gear fishermen requested the set-aside be made available to them for the remainder of the calendar year.

Members of industry also suggested a requirement for fish holds to be empty of fish prior to trip departures. This provision would allow for full accountability and encourage less wasteful fishing practices by creating an incentive to catch herring to

meet market demands. The New England Fishery Management Council included a complementary provision in its Framework Adjustment 4 to the Federal Atlantic Herring FMP.

The states will be conducting public hearings on the Public Hearing Document beginning in January. Fishermen and other interested groups are encouraged to provide input on the Public Hearing Document either by attending state public hearings or by providing written comment. A press release will announce the availability of the Public Hearing Document, details of the scheduled hearings, and the deadline for the submission of public comment. For more information, please contact Ashton Harp, FMP Coordinator, at aharp@asmfc.org.

Black Sea Bass & Summer Flounder

On November 2nd, the Summer Flounder, Scup and Black Sea Bass Management Board approved increases to the 2016 black sea bass commercial quota and recreational harvest limit (RHL), with the commercial quota now set at 2.71 million pounds and the RHL at 2.88 million pounds. These increases are consistent with actions taken by the Mid-Atlantic Fishery Management Council in October. The increased quota for black sea bass was based on updated catch and survey information. A black sea bass benchmark stock assessment is underway for completion in December 2016.

The Board also initiated development of Draft Addendum XXVII to the Summer Flounder and Black Sea Bass Fishery Management Plans (FMPs) to consider extending use of regional management approaches for the 2016 recreational summer flounder fishery, including an option that would allow for a Delaware Bay specific region. The Draft Addendum also will propose extending use of ad-hoc regional management approaches for black sea bass recreational fisheries in 2016 and 2017. In the event the options in Draft Addendum XXVII are not approved for management, the Board extended the current



Photo (c) Steve Withuhn

summer flounder regional management approach for use in 2016.

In 2014, the Board approved Addendum XXV to shift away from traditional use of state-by-state harvest targets under conservation equivalency to the use of an alternative regional strategy for managing summer flounder recreational fisheries. Based on its success in keeping recreational harvest within the RHL and providing greater regulatory consistency among neighboring states, this strategy was extended for use in 2015. State-by-state harvest targets previously utilized under conservation equivalency created difficulties for some states as overages occurred due largely to state shares and limits not reflecting local summer flounder abundance and its availability to recreational fishermen. In 2014 and 2015, management regions were the following: Massachusetts; Rhode Island; Connecticut-New Jersey; Delaware-Virginia; and North Carolina.

*continued, see FISHERY MANAGEMENT ACTIONS
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in response to adverse environmental conditions including increasing water temperatures over the last 15 years combined with sustained fishing mortality.

Declines in catch and fishery-independent survey indices in the offshore portion are evident as well; however they are not as severe. It is believed the offshore area of SNE depends on nearshore larval settlement and offshore migration as the source of recruits (e.g., young of the year lobsters). Therefore, unless fishing effort is curtailed, the offshore component will be in jeopardy in the future when the poor year classes fail to materialize offshore. The Peer Review Panel noted while the SNE stock is not experiencing overfishing based on the current reference points, these reference points were established “without considering the possibility that the stock could be at the lowest abundance level ever and the production of recruits in the inshore area (on which the offshore area depends) could be brought to an extremely low level. It is noted that pre-recruits are not measured in the offshore surveys, so the effects of recruitment failure in the inshore would not be seen in the offshore until years later when the lobsters become available to the fishery and surveys. Hence, by any reasonable standard, it is necessary to protect the offshore component of the stock until increased recruitment can be observed.”

Peer Review Panel Recommendations

For SNE, the Panel recommends close monitoring of stock status along with implementing measures to protect the remaining lobster resource in order to promote stock rebuilding. Stock indicators should be updated annually and reported to the Management Board for appropriate action. Given the good condition of the GOM/GBK stock, the Panel recommended stock indicators be monitored prior to the next benchmark assessment to detect signs of changing recruitment or other conditions.

Atlantic Coastal Management

American lobster is managed under

Amendment 3 to the Interstate Fishery Management Plan (FMP) and its Addenda (I - XXIII). The goal of the American lobster management plan is to increase egg production. Amendment 3 establishes seven lobster conservation management areas (LCMAs): Inshore and offshore GOM (Area 1), Inshore SNE (Area 2), Offshore Waters (Area 3), Inshore and offshore Northern Mid-Atlantic (Area 4), Inshore and offshore Southern Mid-Atlantic (Area 5), New York and Connecticut State Waters (Area 6), and Outer Cape Cod (Area 7). Lobster Conservation Management Teams (LCMTs), composed of industry representatives, were formed for each management area. The LCMTs are charged with advising the American Lobster Board and recommending changes to the management plan within their areas. The commercial fishery is primarily controlled through minimum/maximum size limits, trap limits, and v-notching of egg-bearing females.

Given the critically depleted condition of the SNE stock, the American Lobster Board approved Addenda XVII - XXII, which implement a suite of measures to reduce exploitation and allow the SNE stock to rebuild. These measures include a v-notching program, trap reductions, closed seasons for certain areas, and a trap consolidation/transferability program. Throughout 2014, the American Lobster Board monitored the progress of the SNE LCMAs in achieving the required 10% reduction in exploitation in order to address rebuilding. Using landings as a proxy for exploitation, Technical Committee review of the implemented measures within SNE found LCMAs 2, 3 and 6 met the required reductions while LCMAs 4 and 5 did not. LCMA 4 submitted a proposal for a closed season from April 30 through May 31. This proposal was approved by the Management Board for implementation. LCMA 5 maintained the February 1-March 31 season closure.

In May 2015, the American Lobster Board approved Addendum XXIV, aligning state and federal measures trap transfer programs for LCMAs 2, 3, and Outer Cape Cod regarding the conservation tax

on trap allocations when whole fishing businesses are transferred, trap allocation transfer increments, and restrictions on trap allocation transfers among permit holders who are authorized to fish both state and federal waters (dual permit holder) within a single lobster management area. The Addendum removes the 10% conservation tax on full business transfers. It was found that the transfer tax on full business transfers was unnecessary to prevent the activation of latent effort and that current regulations provide sufficient controls for latent effort.

The Addendum also specifies traps shall be transferred in 10 trap increments in all areas that currently have a trap transferability program, unless specified otherwise. This change allows for fewer traps to be transferred at one time, thus allowing more flexibility for a permit holder in the trap transfer process. This repeals restrictions on vessel size and trap allocation transfers and does not require a permit be retired if the permit holder has less than 50 traps. Dual permit holders are permitted to transfer allocation with dual permits holders from other states. If a dual permit holder chooses to purchase a federal trap allocation from a dual permit holder from another state, only the federal allocation will transfer. Therefore, the buyer must also purchase state allocation from a permit holder in their own state to align the federal and state allocations. If the state and federal allocations do not align, the most restrictive rule applies. The Addendum's measures are effective immediately.

In August 2015, the Board accepted both the stock assessment and peer review report for management use. In response to the findings regarding the status of the SNE stock, the Board established a working group of Board, technical committee, and industry members to review the assessment and peer review findings and develop recommendations for Board consideration. For more information, please contact Megan Ware, FMP Coordinator, at mware@asmfc.org.

Fishery Management Actions (continued)

The Draft Addendum also will propose the continued use of regional management for the 2016 black sea bass recreational fishery with northern (Massachusetts – New Jersey) and southern regions (Delaware – North Carolina). The regional management approach has been used since 2011 and offers advantages over coastwide regulations by addressing geographic differences in the stock (size, abundance, and seasonality) while maintaining the consistent application of management measures by neighboring states.

Draft Addendum XXVII will be presented to the Board for its consideration and approval for public comment at its joint meeting with the Council in December. At the December meeting, the Board and Council also will consider black sea bass and scup federal management measures for 2016. For more information, please contact Kirby Rootes-Murdy, Fishery Management Plan Coordinator, at krootes-murdy@asmfc.org.



Juvenile horseshoe crabs (~ 2 years old) (c) Derek Perry, MA DMF

Horseshoe Crab

On November 5th, the Horseshoe Crab Management Board approved the harvest specifications for horseshoe crabs of Delaware Bay origin. Under the Adaptive Resource Management (ARM) Framework, the Board set a harvest limit of 500,000 Delaware Bay male horseshoe crabs and zero female horseshoe crabs for the 2016 season. Based on the allocation mechanism established in Addendum VII, the following quotas were set for the states of New Jersey, Delaware, Maryland, and Virginia, which harvest horseshoe crabs of Delaware Bay origin.

State	Delaware Bay Origin Horseshoe Crab Quota (no. of crabs)	Total Quota
	Male Only	Male Only
Delaware	162,136	162,136
New Jersey	162,136	162,136
Maryland	141,112	255,980
Virginia*	34,615	81,331

*Virginia harvest refers to harvest east of the COLREGS line only

The Board chose a harvest management program based on the Technical Committee and ARM Subcommittee recommendation. 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. Previously the horseshoe crab abundance estimate was based on data from the Benthic Trawl Survey conducted by Virginia Polytechnic Institute; however, due to the Benthic Trawl Survey not having been conducted in recent years, a composite index of the Delaware 30ft Trawl Survey, New Jersey Delaware Bay Trawl Survey, and New Jersey Ocean Trawl Survey was used instead. Funding has been secured for the Benthic Trawl Survey to be conducted in 2016.

The Horseshoe Crab Technical Committee, Delaware Bay Ecosystem Technical Committee, and the ARM Subcommittee also recommended the ARM Framework be reviewed and updated in

2016. The Board agreed with this recommendation, with specific interest in re-considering the thresholds to allow the harvest of female horseshoe crabs, as well as the recent listing of red knot as a threatened species under the Endangered Species Act by the U.S. Fish and Wildlife Service. The ARM Subcommittee will develop specific recommendations for the Board on changes to the ARM Framework in 2016.

For more information, please contact Kirby Rootes-Murdy, FMP Coordinator, at krootes-murdy@asmfc.org.

Jonah Crab

On November 2nd, the American Lobster Management Board initiated Addendum I to the Jonah Crab Fishery Management Plan (FMP) to consider changes in the incidental bycatch limit for non-trap gear. The FMP currently prescribes a 200 crabs per calendar day/500 crabs per trip incidental bycatch limit; however, concerns were expressed over the appropriateness of these limits. Data submitted by the New England Fishery Management Council and NOAA Fisheries illustrated while 97-99% of trips from 2010 through 2014 have been within the current limit, there were a number of trips above the limit. Furthermore, current bycatch landings are sufficiently low, accounting for approximately 1% of total landings.

Given a goal of the Jonah Crab FMP is to prevent expansion of the fishery while including all current participants, the Board has initiated an addendum to consider altering the incidental bycatch limit with options to increase the limit to 1000 crabs per trip or eliminate the bycatch limit for non-trap gear. Draft Addendum I will be presented to the Board in February. If approved, the Board would release the Draft Addendum for public comment and will consider final approval of the addendum at the Commission's Spring Meeting in May. For more information, please contact Megan Ware, FMP Coordinator, at mware@asmfc.org.

VIMS Graduate Student Explores the Potential Impacts of a Parasitic Nematode on American Eel Swimbladders

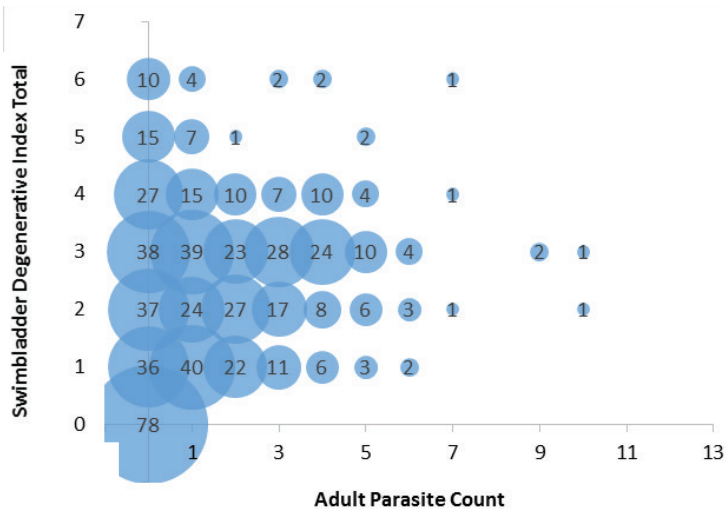
According to the 2012 Benchmark Stock Assessment, the American eel population is depleted in U.S. waters, and is at historically low levels due to a combination of habitat loss, dams, overfishing, and pollution. Another potential threat, noted as a research recommendation in the stock assessment, is an invasive parasitic nematode that infects and severely damages the swimbladder of eels. A swimbladder is a gas filled, balloon-like organ that eels use to control their depth in the water column. This parasite, *Anguillicoloides crassus*, was first discovered in the U.S. in 1995 and has since rapidly spread throughout the range of the American eel. The parasite originates from the Japanese eel in eastern Asia, but was likely introduced to the American eel and European eel populations through the eel aquaculture trade.

Studies on parasite infection of the European eel, a very closely related species, found adverse effects such as reduced swimming performance, inability of the swimbladder to maintain proper gas volume, and decreased tolerance to low oxygen levels. These observed effects are hypothesized to reduce an eel's ability to escape various sources of mortality such as predators, fishing pressure, hydropower dams, and unfavorable environmental conditions. Individual effects are thought to add up to population-level impacts such as increased natural mortality and compromised reproduction.

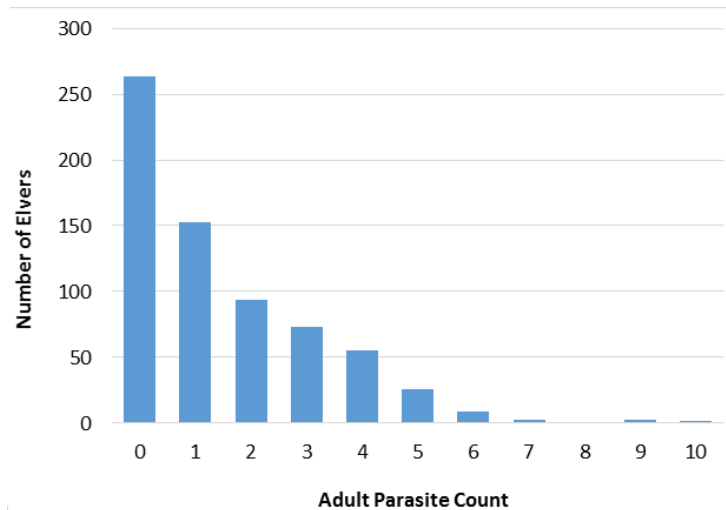
In North America, little research has been conducted regarding the effects of this parasite on American eel. Surveys of the parasite in coastal states have shown that over 80% of American eels can be infected in certain areas and that all life stages of the eel, from glass to silver, are susceptible to infection. Therefore, the potential for population-level impacts exists, but has not been confirmed yet.

Work at the Virginia Institute of Marine Science (VIMS) uses a combination of survey and modeling techniques to investigate the impacts of this parasite on the American eel in North America. Currently, glass and elver American eels are being collected from six sites in the Chesapeake Bay in conjunction with the ASMFC mandated young-of-year glass eel monitoring program. The eels are transported to the lab and measured for length, weight, life stage, and age. They are then dissected, their parasites counted, and the swimbladder condition determined and scored with a swimbladder degenerative index (SDI), which assesses the opaqueness, thickness, pigmentation, and contents of the organ (see photos right).

Results from elvers collected from March to July in 2015 show that over 60% are infected by the adult stage of



Number of elvers (size of circle indicated by number within) with matching adult parasite count and swimbladder degenerative index score (i.e., we recorded 78 elvers with 0 parasites that had an SDI of 0). Swimbladder degenerative index (SDI) totals range from 0 (healthy/normal state) to 6 (being severely damaged). Sample size is 608, from a 2015 field season.



Frequency of the number of adult parasites per individual elver. Sample size is 681, from a 2015 field season.



Swimbladder dissection of an elver American eel. Left image shows the swimbladder removed from the eel and filled with parasites. Right image shows the parasites removed from swimbladder (red arrow). A pair of forceps is shown for size comparison.

continued, see AMERICAN EEL on page 12

Robert Boyles Elected ACCSP Coordinating Council Chair



On November 2nd, Program partners of the Atlantic Coastal Cooperative Statistics Program's (ACCSP) Coordinating Council (the ACCSP's governing body), acknowledged the many accomplishments of outgoing Chair, Cheri Patterson of New Hampshire and elected Robert H. Boyles, Jr. of South Carolina as its new Chair.

In assuming the chairmanship, Mr. Boyles spoke eagerly about his new position, "It is with much honor that I accept the position of Chair of the Coordinating Council. To be elected by my fellow colleagues is humbling and I pledge to continue to advance the ACCSP as the principle source of dependable fisheries data on the Atlantic coast. In order to achieve this goal, I plan on guiding ACCSP through a successful governance review process to ensure that the ultimate decision is in the best interest of the Program. I also commit to working with ACCSP staff and Council members committees to upgrade ACCSP applications to the standards that our partners deserve."

"My predecessor, Cheri Patterson, has paved a smooth path for me as I take on Chairmanship through what I know was countless hours of dedication to this Program. In two short years, Cheri has guided ACCSP through 67 recommendations that were a result of an Independent Review of the Program, ensuring that all recommendations were addressed for implementation through seven different vehicles. Additionally, Cheri oversaw a historic meeting at our last annual meeting in Mystic, Connecticut where the ACCSP's Coordinating Council met jointly with the Atlantic States Marine Fisheries Commission's Interstate Fisheries Management Program Policy Board to decide on whether both groups, working with the Atlantic states, should move forward on conducting the Access Point Angler Intercept Survey (APAIS) portion of the Marine Recreational Information Program. The result was a unanimous vote to allow for state conduct of the APAIS beginning in 2016."

Mr. Boyles currently is the Deputy Director for Marine Resources with the South Carolina Department of Natural Resources. In this position, Mr. Boyles oversees the State of South Carolina's marine resources research, management, and education operations. Mr. Boyles received his B.S. in Mathematical Economics from Wake Forest University and his M.S. in Marine Policy from the University of Delaware. In 1993, Robert was a Dean John A. Knauss Sea Grant Marine Policy Fellow, where he worked for the NOAA Coastal Ocean Program.

The Coordinating Council also elected Lynn Fegley from Maryland as its Vice-Chair. Ms. Fegley is the Maryland Department of Natural Resources Fisheries Service Deputy Director.

ACCSP Comings & Goings

Ann McElhatton

In October, rekindling her passion for environmental education, Ann accepted a position as a high school biology teacher at a local Virginia school. Ann has been with ACCSP for nearly eight years, first hired as the Outreach Coordinator and, for the past three and a half years, serving as Program Manager. While at ACCSP, she was instrumental in producing ACCSP's Outreach Strategic Plan, providing outreach products for all of our partner applications, designing and writing *Fisheries Files* and Annual Reports, and spearheading the redesign and launch of ACCSP's new website. Additionally, Ann was able to broaden ACCSP's scope of influence by launching its Twitter and Facebook accounts, reaching a whole new audience of individuals. Ann was pivotal in forming the Atlantic Coast Fisheries Communication Group, composed of outreach professionals in all the East Coast state, regional, and federal fisheries agencies with the primary purpose of networking and achieving shared communication goals. A product of that Group, which Ann developed and distributed weekly, is a listserve highlighting upcoming meetings, recent news alerts, and articles of interest along the Atlantic coast. Since its launch over a year ago, the number of subscribers has grown into the hundreds. While Ann's positivity, determined drive, and ability to communicate with any audience will be very much missed, they will serve her well in instilling a passion for environmental stewardship in today's youth. We wish Ann the very best of luck in her future endeavors.



Alex DiJohnson

In October, Alex DiJohnson joined the ACCSP staff as Recreational Data Coordinator. As Coordinator, Alex's primary responsibilities include ensuring consistent data entry and interpretation



continued, see ACCSP COMINGS & GOINGS on page 13



ACCSP is a cooperative state-federal program focused on the design, implementation, and conduct of marine fisheries statistics data collection programs and the integration of 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 the Atlantic States Marine Fisheries Commission, 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 further information please visit www.accsp.org.

the nematode and that up to 10 adult nematodes can be found within a single eel. Additionally, 87% of the elvers exhibit some degree of damage to their swimbladders, with symptoms including thickening of the walls, loss of translucence, reduced space for gas, pigmentation, and parasite induced degradation. Severe damage sustained from repeated infections likely causes the swimbladder to become an unsuitable habitat for parasites. Therefore, the SDI is a valuable tool for measuring the full accumulation of damage from all infections, in the event that parasites are no longer present within the swimbladder. After another field season of sampling, VIMS will use these data in addition to glass and yellow eel data to develop a model to estimate infection-related mortality.

The information gained from this project will help inform management decisions for the American eel. Modeling results will provide information on age-specific infection rates and how they change throughout the life stages of the eel. Any indication of infection-related mortality can be incorporated in the next stock assessment to better estimate natural mortality. Additionally, the model can be easily applied to other areas of the species' range beyond the Chesapeake Bay.

Despite the questions addressed by VIMS' research, many more questions remain regarding the physiological and reproductive effects of this parasitic nematode on the American eel. In the event that this parasite is not found to significantly impact the eel population, the ability of the eels to withstand such an intense infection would be equally important to investigate. Nevertheless, more research is warranted to further evaluate the threats of the parasitic nematode to the recovery and sustainability of the American eel.

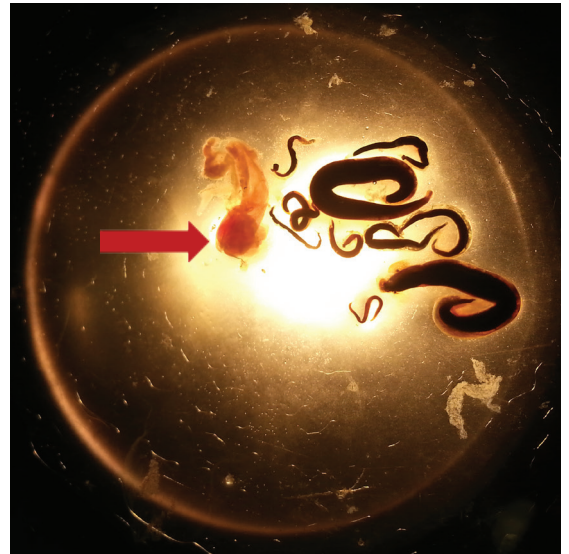


Image of parasitic nematode removed from a single elver swimbladder (arrow) as viewed under a light microscope.



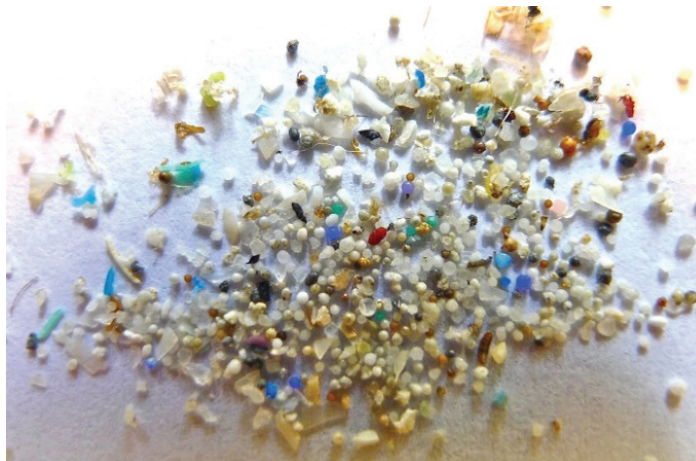
This article was contributed by Zoemma Warshafsky, a VIMS Master's Student. Zoemma is in her second year, studying the effects of the parasitic nematode on the American eel. She received her B.S. from the University of Massachusetts Amherst in 2014, where she completed an undergraduate thesis on a nasal parasite of Atlantic Bluefin tuna. Overall, she is interested in how parasites, diseases, and other physiological factors affect fish population. She hopes people learn to love and respect eels as much as she has. Her project is funded through the VA Sea Grant Graduate Research Fellowship and VIMS student grants. For more information, please contact Zoemma at ztwarshafsky@vims.edu.



House Committee Approves Legislation to Phase Out Microbeads

On November 18th, the U.S. House of Representatives' Energy and Commerce Committee unanimously approved H.R. 1321, the Microbead-Free Waters Act of 2015. H.R. 1321 would prohibit the manufacture, sale, or distribution of personal care products containing synthetic plastic microbeads by July 1, 2019.

Microbeads, only a few millimeters in size, are a source of plastic pollution that often bypass wastewater treatment plants due to their small size. As such, these tiny pieces of plastic make their way into waterways where fish sometimes mistake them for food. They're detrimental to the health of fish and can absorb toxic chemicals from the environment, introducing them into our food



chain. Plastic microbeads are commonly found in personal care products such as facewash, exfoliators, and toothpaste. Many companies using microbeads are voluntarily phasing out microbeads in favor of biodegradable alternatives.

H.R. 1321 is now awaits approval of the full House of Representatives. Companion legislation in the Senate has been referred to the Health, Education, Labor, and Pensions Committee but has not yet been acted upon. Additionally, individual states and counties are also phasing out microbeads locally.

For more information, please contact Deke Tompkins, Legislative Executive Assistant, at dtompkins@asmfc.org.



ACCSP COMINGS & GOINGS continued from page 11

through the Marine Recreational Information Program (MRIP) Access-Point Angler Intercept Survey (APAIS). He will also train ACCSP and Atlantic state employees on the procedures of the survey. Alex will be responsible for coordinating data submission for the states of Delaware through Georgia and will be the primary point of contact for any issues that arise in those states.

Alex earned a Bachelor's degree in Wildlife Conservation from Juniata College. He is currently finishing his Master's degree in Natural Resources from Delaware State University where he is studying the behavioral response of Atlantic Sturgeon to commercial shipping in the Delaware River.

Coleby Wilt

Also in October, Coleby Wilt joined the ACCSP staff as Recreational Data Coordinator. Coleby's primary responsibilities include aiding in the implementation of APAIS and ensuring daily aspects of the survey run properly. He also will be in charge of data submission for the states of Maine through New Jersey and will be the primary point of contact for any issues that arise within those states.



Coleby earned his Master's degree in Biology from the University of Nebraska and a Bachelor's degree from California Polytechnic State University San Luis Obispo.

Please join us in welcoming both Alex and Coleby.

Mark Your Calendars 2016 ASMFC Meeting Dates

Winter Meeting - February 2-4
The Westin Alexandria, Alexandria, VA

Spring Meeting - May 2-5
The Westin Alexandria, Alexandria, VA

Summer Meeting - August 2-4
The Westin Alexandria, Alexandria, VA

75th Annual Meeting - October 23-27
Harborside Hotel, Bar Harbor, ME

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