



ASMFC

FISHERIES *focus*

Vision: Sustainably Managing Atlantic Coastal Fisheries

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Live Streaming of ASMFC Summer Meeting

Board/Section meeting proceedings will be broadcast daily via webinar beginning at 8 a.m. on August 5th, continuing daily until the conclusion of the meeting (expected to be 4:45 p.m.) on August 7th. To register for the webinar, please go to <https://www3.gotomeeting.com/register/867248318>

ASMFC Summer Meeting

August 5-7, 2014
Crowne Plaza Old Town Alexandria
Final Agenda

Please note: The agenda is subject to change. The agenda reflects the current estimate of time required for scheduled meetings. The Commission may adjust this agenda in accordance with the actual duration of meetings. Interested parties should anticipate meetings starting earlier or later than indicated below.

TUESDAY, AUGUST 5

8:00 – 9:30 AM

Atlantic Herring Section

- Public Comment
- Review of Public Comment Summary to Draft Amendment 3 Public Information Document (*M. Yuen*)
- Draft Amendment 3
 - Provide Guidance to Plan Development Team for Draft Amendment 3 (*T. Stockwell*)
- Review and Populate Advisory Panel Membership (*M. Yuen*)

9:45 AM – 12:15 PM

American Lobster Management Board

- Public Comment
- Consider Addendum XXIII for Final Approval (*K. Taylor*) **Final Action**
- Consider Cancer Crab Public Information Document for Public Comment (*K. Taylor*) **Action**
- Review of Southern New England 10% Reduction Evaluation (*B. Glenn*)
- Update on Upcoming Federal Management Actions (*P. Burns*)
- Review of Consistency with Federal Trap Transfer Regulations (*K. Taylor*) **Possible Action**
- Stock Assessment Update (*B. Glenn*)
- Elect Vice-Chair **Action**

1:15 – 5:45 PM

Atlantic Striped Bass Management Board

- Public Comment
- Technical Committee Report on North Carolina Stock Assessment (*C. Godwin*) **Action**
- Consider Draft Addendum IV for Public Comment (*M. Waine*) **Action**
 - Review of Draft Addendum IV (*M. Waine*)
 - Law Enforcement Report (*K. Blanchard*)
 - Advisory Panel Report (*K. Place*)
 - Consider Final Approval of Draft Addendum IV for Public Comment

continued, see SUMMER MEETING AGENDA on page 6

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

Dr. Louis B. Daniel, III (NC)
Chair

Douglas E. Grout (NH)
Vice-Chair

Robert E. Beal
Executive Director

Patrick A. Campfield
Science Director

Toni Kerns
ISFMP Director

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August 5 - 7

ASMFC Summer Meeting, Crowne Plaza Old Town Alexandria, 901 N. Fairfax Street, Alexandria, VA

August 6 (1:30 - 4:00 PM)

ASMFC Biological Ecological Reference Point Workgroup Conference Call; dial 888.394.8197 (passcode: 222918) to join conference call

August 12 - 14

Mid-Atlantic Fishery Management Council, W Hotel, 515 15t Street NW, Washington, DC

August 12 - 15

ASMFC Atlantic Menhaden Stock Assessment Workshop, National Marine Fisheries Service Southeast Fisheries Science Center, General Auditorium, 101 Pivers Island Road, Beaufort, NC

August 15 (10 AM - Noon)

River Herring Technical Expert Workgroup Fisheries Subgroup Conference Call; contact Marin Hawk (mhawk@asmfc.org) for more information

September 8 - 12

ASMFC Technical Committee Meeting Week, location to be determined

September 15 - 19

South Atlantic Fishery Management Council, The Charleston Marriot Hotel, 170 Lockwood Boulevard, Charleston, SC

September 23 (begins at 9 AM) - 25 (ends at 1 PM)

ASMFC American Lobster Stock Assessment Workshop, Massachusetts Division of Marine Fisheries, 1213 Purchase Street, New Bedford, MA

September 30 - October 2

New England Fishery Management Council, Cape Codder Resort, Hyannis, MA

October 7 - 9

Mid-Atlantic Fishery Management Council, Courtyard Philadelphia Downtown, 21 N. Juniper Street, Philadelphia, PA

October 7 - 10

ASMFC Weakfish Stock Assessment Data Workshop, Raleigh, NC (specific location to be determined)

October 27 - 30

ASMFC 73rd Annual Meeting, Mystic Hilton, 20 Coogan Boulevard, Mystic, CT

October 14 - 17

ASMFC Red Drum Stock Assessment Data Workshop, Charleston, SC (specific location to be determined)

November 18 - 20

New England Fishery Management Council, Newport Marriott, Newport, RI

December 1 - 5

South Atlantic Fishery Management Council, Doubletree by Hilton New Bern/Riverfront, 100 Middle Street New Bern, NC

December 9 - 11

Mid-Atlantic Fishery Management Council, Royal Sonesta, 550 Light Street, Baltimore, MD



The Northeast Area Monitoring and Assessment Program Receives Dedicated Funding from NOAA Fisheries

This June, we received good news on the fisheries research and data collection front with NOAA Fisheries announcing it will provide funding to the Northeast Area Monitoring and Assessment Program (NEAMAP) beginning in FY2015. NOAA Fisheries' new support is significant given that funding for fisheries surveys has become increasingly sparse while demands for more complex, data rich, and frequent stock assessments intensify. Further, NOAA Fisheries' direct support of NEAMAP will reduce the need for funding from the Mid-Atlantic Fishery Management Council Research Set-Aside (Mid-Atlantic RSA) and the NOAA Fisheries Northeast Cooperative Research Programs, allowing them to potentially address other high priority survey and research needs.

NEAMAP is a cooperative state/federal fishery-independent survey and research program for coastal waters from Maine to North Carolina. Information from the NEAMAP surveys is critical to understanding the distribution, abundance, and condition of marine fish and invertebrate populations throughout the Northeast and Mid-Atlantic. The program was initiated by the Commission in the late 1990s to address a gap in state and federal fishery-independent data collection coverage along the Atlantic coast, specifically in the Mid-Atlantic Bight, a coastal region which extends from Massachusetts through North Carolina. NEAMAP is coordinated by the Commission's Fisheries Science Program through the NEAMAP Board and Technical Committees. The Board and committees are composed of fisheries managers and scientists, respectively, from each state from Maine through North Carolina, as well as representatives from the New England and Mid-Atlantic Fishery Management Councils, and NOAA Fisheries Northeast Fisheries Science Center.

In 2006, NEAMAP piloted the Southern New England/Mid-Atlantic (SNE/MA) Nearshore Trawl Survey to sample inshore waters from Martha's Vineyard, MA to Cape Hatteras, NC. The survey has been conducting spring and fall surveys ever since, collecting distribution, abundance, biomass, and life history information (e.g., age, growth, size, diet) for more than 175 fish and invertebrate species. The success of this survey is due to the diligence and commitment of the program partners, most notably the Virginia Institute of Marine Science and Captain Jimmy Ruhle who conduct the survey, and the funding and support it has received from the Mid-Atlantic RSA Program.

Overall, the Mid-Atlantic RSA has been an important mechanism to fund research and compensate vessel owners participating in research through the sale of fish harvested under a research quota. Unfortunately, the program has come under intense scrutiny over the past several years, due to many participants misusing the program. In fact, earlier this summer the federal government issued 70 grand

jury subpoenas throughout New York as part of two-year investigation into illegal harvest under the guise of RSA fishing. The illegal harvest of summer flounder has been estimated to be over one million pounds. Over the next few months, the Commission and the Mid-Atlantic Council will need to decide the fate of the RSA program. Many managers seem to agree significant changes must be made to ensure better tracking of all RSA quota.

In 2011, NEAMAP was further expanded to include two long-running state surveys: the Maine-New Hampshire (ME-NH) Inshore Trawl Survey, which is partially funded by NOAA Fisheries Northeast Cooperative Research Program, and the Massachusetts Inshore Trawl Survey, which is funded through a combination of state and federal Sport Fish Restoration funds. With 13 complete years and a 14th underway, the ME-NH Inshore Trawl Survey has established seasonal (spring and fall) time series of abundance for over 25 species of fish and invertebrates. Similar to the SNE/MA Nearshore Trawl Survey, the ME-NH Survey is a collaborative research project using a commercial fishing vessel as the platform. Information from the survey is used in the assessment and management of several fisheries, including American lobster, Atlantic herring, monkfish, and Gulf of Maine winter flounder.

The longest running survey within NEAMAP is the Massachusetts Inshore Trawl Survey, conducted every spring and fall since 1978 to monitor the distribution, abundance and size composition of fish populations in state waters. All species of finfish and select invertebrates are weighed and measured. A subset of species are sampled for sex, maturity and age structures. All surveys since 1981 have been conducted aboard the *R/V Gloria Michelle* operated by NOAA Corps officers. Data from this survey have provided abundance and age indices and supported stock assessments for a number of species, including American lobster, Atlantic cod, black sea bass, horseshoe crab, scup, summer flounder, tautog, winter flounder and yellowtail flounder.

Collectively, data from NEAMAP and other state and federal fishery resource surveys form one of the world's largest, longest-running marine biological and oceanographic data sets. The sampling and analytical methods of the NEAMAP surveys have been independently peer reviewed and/or used in a number of peer reviewed stock assessments and for fisheries management purposes. NOAA Fisheries' recent pledge to fund two NEAMAP surveys sends a strong signal of the agency's commitment to fishery-independent data collection and its importance to our stock assessment and management activities. It is our hope that NOAA Fisheries will continue NEAMAP funding over the long-term to ensure the longevity of the valuable time series of data the surveys produce.

Species Profile: Spot

Managers Consider New Approach to Evaluating Stock Trends and Initiating Management Action

Introduction

Spot is one of the 275 sciaenid species worldwide. The Commission alone manages a total of six sciaenid species, which are commonly called drums, croakers, or hardheads for the repetitive throbbing or drumming sounds they produce. A small to medium bodied, short-lived species found in brackish and saltwater habitats from the Chesapeake Bay to South Carolina, spot are an important forage species for predators such as striped bass, weakfish, summer flounder, bluefish, and sharks. They are also an excellent food and sport fish, supporting recreational and commercial fisheries in the Mid- and South Atlantic, with total 2013 landings estimated at 6.1 million pounds.

The Commission adopted the first Spot Fishery Management Plan (FMP) in 1987. The FMP identified two major issues that have hindered effective management of the resource. The first being a lack of stock assessment data, including basic data requirements such as information on recruitment, age, size, and sex composition, as well as variations in these characteristics over time and area. The second issue concerns the bycatch (or inadvertent catch of undersized or unwanted fish) of spot in the South Atlantic shrimp trawl, pound net, long haul seine, and trawl fisheries. Since adoption of the FMP, progress has been made in the development of bycatch reduction devices for shrimp trawlers. In some tests, bycatch has been reduced by 50 to 75% while still retaining a significant shrimp catch. These devices are now commonly used by shrimpers throughout the South Atlantic states.

Further, advances have been made in understanding stock condition through the use of management triggers (established under the 2011 Omnibus Amendment) and the proposed use of a traffic light approach to assess changes in the resource and identify management approaches to respond to these changes. It is hoped that the 2016 benchmark stock assessment will shed even greater light on the status of this important resource.

Life History

Spot occur along the U.S. Atlantic coast in estuarine and coastal waters from the Gulf of Maine to Florida, although they are most abundant from Chesapeake Bay south to South Carolina. Spot migrate seasonally, entering bays and estuaries in the spring where they remain until late summer or fall when they move offshore to spawn. Spot mature between the ages of two and three, at lengths of seven to eight inches. Their maximum life span is about six years, although fish older than four years are uncommon.

Spawning takes place in the ocean from fall to early spring and the post-larvae move into estuaries, utilizing low salinity tidal creeks where they develop into juveniles. As spot grow, they move toward higher salinity areas during the summer and early fall and offshore in the fall as water temperatures decrease. Those that summered in the northern portion of their range also move south in the autumn. Spot are opportunistic bottom feeders, eating mainly worms, small crustaceans and mollusks, and organic material. The post-larvae prey on plankton and transition to bottom feeders as they age. As they grow into juveniles and adults, spot prey on polychaete worms, small crustaceans, and mollusks. Predators such as striped bass, weakfish, summer flounder, bluefish, and sharks eat them in turn.

Commercial & Recreational Fisheries

Spot support commercial fisheries along the Atlantic coast, particularly from Chesapeake Bay southward. They are harvested by a variety of commercial gears including haul seines, pound nets, gillnets, and trawls. From 1950 through the early 80s commercial

Species Snapshot

Spot

Leiostomus xanthurus

Common Names:

Norfolk spot, flat croaker, golden croaker, spot croaker, silver gudgeon, goody, hub, roach, jimmy

Management

Unit:

Delaware to Florida

Interesting Facts:

- Spot travel in huge (>100 fish) slow-moving schools over sand-mud bottoms.
- Spot are the only member of the drum family, which includes weakfish, red and black drum, and croaker, with a forked tail.
- Spot tend to live longer and attain a greater size in the northern extent of their range.

Largest Recorded:

14 inches (Norfolk, Virginia 2011)

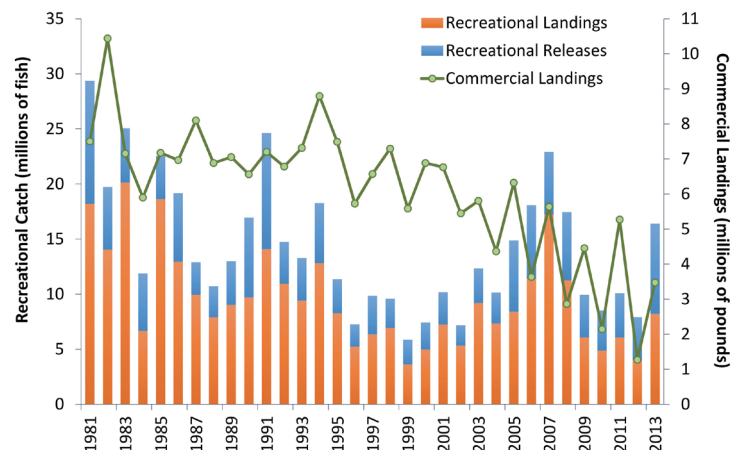
Life Span: 6 years

Stock Status: Unknown



Spot Recreational Catch (Landings + Releases) & Commercial Landings

Source: NMFS Fisheries Statistics Division, 2014



catches widely fluctuated, ranging from 3.9 to 14.5 million pounds. Such variability is expected because spot are a short-lived species and catch in most years consists of a single year class, the strength of which appears to be determined by environmental conditions that prevail on the spawning and nursery grounds in any particular year. Landings show less year-to-year variability from 1984 to 2003, ranging from 5.8 to 8.8 million pounds. Since 2003, commercial landings have fluctuated between 6.3 (2005) to 1.3 (2012) million pounds.

Spot is a popular recreational species sought by anglers from Delaware Bay to northern Florida. Most of the Atlantic recreational harvest is taken within three miles of the coast, from shore or by private or rental boats rather than by party or charter boats. For past 30 years, recreational harvest has also widely varied between 3.6 and 20.1 million fish (or 1.7 and 6.9 million pounds). While harvest trended upward from a low in 1999 (3.6 million fish) to 15.9 million fish in 2007, it has declined and remained below 2007 levels since, with the 2013 harvest recorded at 8.2 million fish.

Stock Status

No coastwide assessment has been performed for spot; however, spot are a target or component of several state and state-surveys using trawls, gillnets, or seine nets. Both juvenile abundance indices (JAIs) and adult abundances have widely fluctuated been throughout the survey time series, indicating high variability in year to year recruitment and overall abundance.

In addition to these surveys, commercial and recreational catch-per-unit effort (CPUE) data provide indices of relative spot abundance. Similar to the independent surveys, commercial CPUE across the states of Maryland, Virginia, and North Carolina have also been variable, but generally show a declining trend in recent years. To aid in better understanding the dynamics of the spot population along the Atlantic coast in light of variability in landings and survey

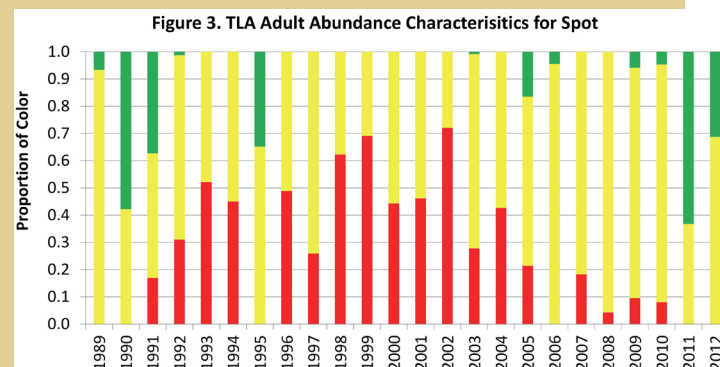
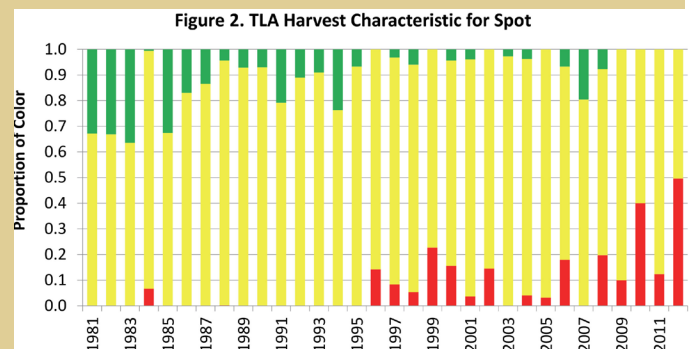
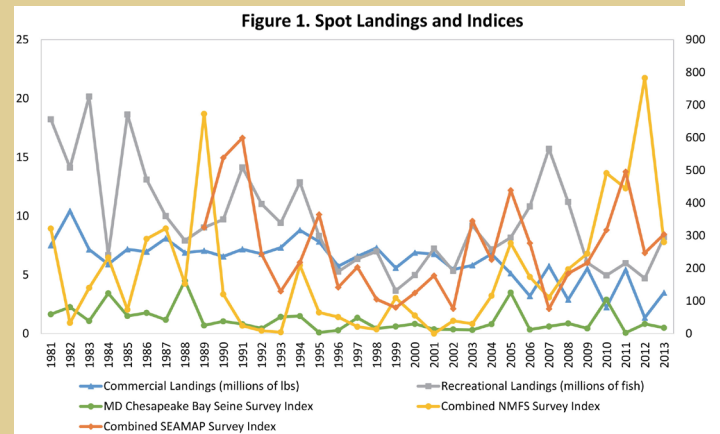
continued, see SPOT on page 9

Proposed Traffic Light Approach (TLA) Offers New Way to Assess Long-term Stock Trends

The TLA is a statistically robust way to incorporate multiple sources of data into a single, easily understood metric for management advice. It is often used for data-poor species, or species which are not assessed on a frequent basis, such as blue crabs in North Carolina and snow crabs in the Gulf of St. Lawrence. This management approach has been proposed for spot because spot is a short-lived species with highly variable abundance, which has not been through a benchmark assessment yet. There are several fishery-independent indices for spot, and they are caught both

recreationally and commercially. Trying to combine all these sources of data into a single figure is confusing and makes it difficult to distinguish trends (see Figure 1), but the TLA allows us to synthesize those datasets into a harvest metric and an abundance metric that makes overall trends in the population easily recognizable (Figures 2 & 3). As harvest or abundance increase relative to their long-term mean, the proportion of green in a given year will increase, and as harvest or abundance decrease, the amount of red in that year becomes more predominant.

For spot, we can see an increasing proportion of red in harvest in recent years, due to declining landings. This follows several years of higher red in the adult abundance indices. The most recent years of the abundance characteristic indicate abundance has increased relative to the late 1990s and early 2000s. Managers have the option of taking action when the proportion of red becomes too high, either in a single year, or over several years in a row. As you can see, the TLA provides a quantitative and intuitive way of understanding trends in multiple sources of data that is a great improvement on simply looking at these datasets independently.



- 8:00 – 10:00 AM **Executive Committee (*Breakfast will be served at 7:45 a.m.*)**
(A portion will be a closed session for Executive Committee members only)
- Public Comment
 - Procedural Issues (*R. Beal*)
 - Report on Commissioner Conflict of Interest Policy
 - Use of Meeting-Specific Proxies
 - What Constitutes a 2/3 Vote with Regard to the Services Abstaining
 - Advisory Panel Involvement in Fishery Management Plan Development
 - Technical Group Guidelines on Consensus Building
 - Discussion of ASMFC Support for Non-ASMFC Staff to Attend Conferences, Educational or Other Career/Knowledge-Building Courses
 - Discussion of American Eel Enforcement Efforts (*P. Keliher*)
 - Awards Committee Report (*S. Woodward*)
 - Executive Director's Annual Review (*L. Daniel*) **(Closed Session)**
- 10:00 AM – 12:15 PM **Interstate Fisheries Management Program (ISFMP) Policy Board**
- Public Comment
 - Review of Stock Rebuilding Performance (*T. Kerns*)
 - Review and Consider Comments on NOAA Fisheries Special Management Zones
 - Proposed Rule (*T. Kerns*) **Action**
 - Stock Assessment Updates
 - Atlantic Menhaden (*G. Nesslage*)
 - Tautog (*K. Drew*)
 - Sturgeon (*K. Drew, J. Kipp*)
 - River Herring Technical Expert Working Group Progress Report (*M. Hawk*)
 - Discussion of Collaboration with Great Lakes Fisheries Commission on American Eel Management
 - Atlantic Coastal Fish Habitat Partnership Report (*P. Campfield*)
- 1:15 – 2:15 PM **Business Session**
- Public Comment
 - Consider Approval of Policy on Commissioner Financial Disclosure and Conflict of Interest **Final Action**
- 2:30 – 3:00 PM **Spiny Dogfish Management Board**
- Public Comment
 - Consider Draft Addendum V for Public Comment (*M. Hawk*) **Action**
- 3:15 – 5:00 PM **Summer Flounder, Scup, and Black Sea Bass Management Board**
- Public Comment
 - Review of Public Information Document for Draft Amendment 21 for Public Comment (*K. Rootes-Murdy*) **Action**
 - Review of Summer Flounder, Scup, and Black Sea Bass Advisory Panels (*K. Rootes-Murdy*)
 - Consider Adjustment to 2014 Black Sea Bass Recreational Season for Southern States (*K. Rootes-Murdy*) **Action**
 - Discussion of the Research Set Aside Program for Summer Flounder, Scup, and Black Sea Bass (*D. Pierce*)
- 3:45 – 5:00 PM **Atlantic Coastal Cooperative Statistics Program (ACCSP) Executive Committee**
(A portion of this meeting will be a closed session for Executive Committee members only)
- Public Comment
 - ACCSP Program Director Updates (*M. Cahall*)
 - FY2015 Project Proposals
 - Review Revised Outreach Strategic Plan
 - Status of Independent Program Review Recommendations Implementation
 - ACCSP Governance Ad-Hoc Committee Update (*R. Boyles*)
 - Funding Subcommittee Update (*R. Beal*)
 - Operations Committee and Subcommittee Update (*T. Hoopes*)
 - SOP Subcommittee

- Report of Action Items from Last Meeting
 - FY2014 Funded Projects
 - Status:* Principal Investigators notified once funding is available (*M. Cahall*) (Completed)
 - Independent Program Review Recommendations Implementation
 - Status:* SOP Workgroup to meet to build a directory and cross-reference to determine which areas address the Independent Panel Review Recommendations
 - ACCSP Governance Ad-hoc Committee
 - Status:* Completed survey to be forwarded to all committees. Survey end-date needs to be determined. R. Boyles to draft and forward an email
 - Funding Subcommittee
 - Status:* R. Beal, M. Cahall and A. McElhatton to develop a decision document identifying the pros and cons of different strategies. Once the decision document is drafted the Subcommittee will meet to decide if there is a preferred option.
 - Quarterly Budget/Expenditures from Greater Atlantic Regional Fisheries Office and Southeast Regional Office
 - Status:* Budget/expenditures forwarded to Principal Investigators and Operations Committee on July 1st (*E. Wyatt*)
 - Introduction of Elizabeth Wyatt, New Program Assistant
 - Marine Recreational Information Program (MRIP)-Access Point Angler Intercept Survey (APAIS) Transition
 - Status:* Conference Call to be scheduled to review state budgets and ensure consistency among states (*G. White*)
- Closed Session for Executive Committee Only

5:00 – 6:00 PM

ACCSP Coordinating Council

- Public Comment
- Review of Outstanding Action Items from May 2014
 - Review the Model Used for the Proportional Standard Error (PSE) Project
 - Consider Approval of 2014-2018 Outreach Strategic Plan **Final Action**
 - Review Modified Outreach Strategic Plan (*A. McElhatton*)
- ACCSP Status Report (*M. Cahall*)
 - Program Update
 - New Program Assistant
 - Current Projects Update
 - MRIP PSE
 - MRIP-AP AIS Transition Status
 - SAFIS Hand-Held Trip Reporting
 - Lobster Trap Tag Transferability
 - FY2015 Funding Requests
- Independent Program Review Progress
 - ACCSP Governance Ad-Hoc Committee Update (*R. Boyles*)
 - Funding Subcommittee Update (*R. Beal*)
 - Update from Operations Committee and Subcommittee (*M. Cahall*)
 - SOP Subcommittees

THURSDAY, AUGUST 7

8:00 AM – Noon

American Eel Management Board

- Public Comment
- Elect Vice-Chair **Action**
- Draft Addendum IV for Final Approval **Final Action**
 - Review of Draft Addendum IV (*K. Taylor*)
 - Review of Public Comment (*K. Taylor*)
 - Advisory Panel Report (*M. Bouw*)
 - Technical Committee Report (*S. Eyster*)
 - Law Enforcement Report (*J. Fessenden*)
 - Consider Final Approval of Addendum IV

Noon – 12:30 PM

Lunch for Commissioners and Proxies

continued, see SUMMER MEETING AGENDA on page 11

Science Highlight: Invasive Blue Catfish in the Chesapeake Bay

Blue catfish (*Ictalurus furcatus*) grow to an impressive size and are fished for recreationally in the Chesapeake Bay and associated rivers of Virginia and Maryland. In fact, the world record blue catfish weighed 143 pounds and spanned 57 inches long with a girth of 43.5 inches, caught in Buggs Island Lake, Virginia in 2011 by Nick Anderson. Although the blue catfish is prized by fishermen, fisheries scientists and managers have grown increasingly concerned about the impact of this invasive species on native species of flora and fauna in the Chesapeake Bay and its tributaries.

Biologists have found that blue catfish reduce biodiversity in the waters they have overtaken, mostly by eating native small fish and juveniles, and threatening ecosystem health and productivity. They pose an economic and ecological problem of increasing severity in their non-native habitats. The growing invasive blue catfish population and its impacts on native fish populations need to be monitored closely to determine if fishery management action is needed.

Journey to the Chesapeake

Blue catfish are endemic (naturally occurring) to the Mississippi, Missouri and Ohio River Basins of the central and southern US. From 1973-1977, the Virginia Department of Game and Inland Fisheries introduced this species to the James, York, and Rappahannock Rivers of Virginia to serve as a recreational fishery. During that time, it was very common to stock non-native species for fishing purposes. Since then, ecologists have studied the repercussions of introducing new species, and fisheries management strategies have changed to avoid this method. Unfortunately, fishermen had already caught and relocated blue catfish throughout Maryland and Virginia with the goal of establishing additional fishing opportunities.

An invasive species is defined as an “alien species whose introduction does or is likely to cause economic or environmental harm to human health.”

The blue catfish survives all too well in its newfound environment. Because this fish can tolerate a wide range of salinities and habitat types, it has easily spread through much of the Chesapeake Bay and its tributaries. A large portion of the Bay contains water of a tolerable salinity, which offers a huge range of potential new habitat to this invader. The blue catfish is now recognized as a non-native, invasive species. An invasive species is defined as an “alien species whose introduction does or is likely to cause economic or environmental harm to human health.” On the other hand, a native species is one that has evolved and



USFWS Fishery Biologist, Mike Mangold with blue catfish taken from Dyke Marsh, Potomac River, VA (Photo: U.S. Fish and Wildlife Service)

naturally exists in the described range. This is also called an endemic species. The blue crab is an example of an endemic species that has always lived in the Bay.

Adaptive Characteristics

Though many non-native species have been introduced to the Chesapeake Bay area, the blue catfish is by far one of the most well-established invasive species. Why has this fish become so abundant in Maryland and Virginia? Blue catfish have five key characteristics that form a successful survival strategy: habitat generalist, generalist feeder, high reproductive rate, large body size, and long lifespan.

After blue catfish reach sexual maturity at 6-7 years of age, they are very prolific spawners; females produce 4,000-8,000 eggs per kilogram of body weight. This means that a 20 pound female could lay over 70,000 eggs during every spring spawning season. Such a steep reproductive rate ensures that many of these young grow to adulthood.

Blue catfish are relatively long-lived; those that reach adulthood have been known to survive for over twenty years, breeding on an annual basis. Adults can grow to be over 100 pounds, and at this size, they are threatened by very few natural predators. The high annual reproductive rate of this species, combined with its long lifespan and high adult survival, allows it to build dense populations which crowd out native species.

Blue catfish are habitat generalists, meaning that they can adapt to a variety of habitat conditions and salinities. They are also generalist feeders that eat organisms on many levels of the food chain; they are known for devouring almost any fish, shellfish, and crustacean that can fit into their mouths. This pairing of traits means that blue cats can adapt to a wide range of physical environments and organismal communities, a flexibility which considerably expands their potential range.

Subsequently, blue catfish have become extraordinarily well adapted to the Chesapeake Bay and its tributaries. They continue to spread rapidly through the river systems of Maryland and Virginia, threatening naturally occurring fish species.

Impact on the Chesapeake Bay Ecosystem

The successful adaptation of blue catfish to the Chesapeake Bay has impacted the health of native populations. Endemic species face two challenges in the presence of the blue catfish: increased predation pressure and competition for resources. A voracious generalist feeder and a top predator, the blue catfish preys heavily upon many threatened species within the watershed. Predation pressure is occurring on multiple species managed by

continued, see CATFISH on page 10

ACCSP Announces 2014 Funded Fisheries Data Collection Projects

The Atlantic Coastal Cooperative Statistics Program (ACCSP), a state and federal partnership for marine fisheries data collection and data management, has allocated nearly \$2 million to its state and federal partners for new and ongoing projects to improve data collection for coastal fisheries in 2014. The following projects will be awarded funding:

- **Maine Department of Marine Resources** will receive (1) \$164,663 to continue the state's management of dealer and harvester reporting and (2) \$130,598 to continue portside commercial catch sampling and comparative bycatch sampling for Atlantic herring, Atlantic mackerel, and Atlantic menhaden.
- **Massachusetts Division of Marine Fisheries** will receive \$139,094 to implement a swipe card pilot project for Massachusetts trip-level shellfish transactions.
- **Rhode Island Division of Fish and Wildlife** will receive \$85,408 to maintain and coordinate its fishery-dependent data feeds to ACCSP.
- **New Jersey Division of Fish and Wildlife** will receive \$152,602 to continue electronic reporting and biological characterization of its commercial fisheries.
- **North Carolina Division of Marine Fisheries** will receive (1) \$143,144 to begin characterizing finfish bycatch and discards (including protected species interactions) in its cobia hook-and-line fishery, (2) \$50,549 to begin a pilot study on bycatch and discards (including protected species) in North Carolina's commercial skimmer trawl fishery, and 3) \$35,886 to begin a project focused on the age and sex data collection from the state's recreational and commercial fisheries.
- **South Carolina Department of Natural Resources** will receive \$175,716 to continue instituting a collection method for ACCSP commercial module in South Carolina.
- **The Atlantic States Marine Fisheries Commission** will receive \$57,400 to continue carrying out an observer program for the Mid-Atlantic (New York, New Jersey, Maryland, Virginia) and Rhode Island small mesh otter trawl fishery.
- **The ACCSP Recreational Technical Committee and Florida Fish and Wildlife Conservation Commission** will jointly receive \$155,490 to increase at sea sampling levels for the recreational headboat fishery on the Atlantic coast (New Hampshire through Florida).

For more information on any of these projects please contact Ann McElhatton, Program Manager with ACCSP, at info@accsp.org or 703.842.0780.

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 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 or www.accsp.org/prelease.htm.



Image © www.inlandboys.org

SPOT, continued from page 5

data, spot has been scheduled for a benchmark stock assessment in 2016.

Atlantic Coastal Management

Spot is currently managed under the Omnibus Amendment for Spanish Mackerel, Spot and Spotted Seatrout. The Amendment, approved in 2011, updates all three species' fishery management plans with the requirements of the Atlantic Coastal Fisheries Cooperative Management Act (1993) and adoption of the ISFMP Charter (1995). For spot, the Amendment includes a management trigger, comprised of fishery-dependent and -independent data sets, to inform the Board on the current status of the stock until a full benchmark assessment can be completed.

The 2013 trigger exercise found the triggers did not trip but the overall trends indices and landings were concerning. Based on the results of the trigger assessment, the South Atlantic State/Federal Fisheries Management Board tasked the Spot Plan Review Team with developing a traffic light approach with management options to consider under a variety of conditions. This approach has since been incorporated in a Draft Addendum that was available for public comment this June and July, and will be considered for final approval by the South Atlantic Board this August (see side-bar on page 5 for more information of the TLA).

For more information, please contact Kirby Rootes-Murdy, FMP Coordinator, at 703.842.0740 or krootes-murdy@asmfc.org.

Science Highlight: Blue Catfish

BLUE CATFISH, continued from page 8

INVASIVE CATFISH IN THE CHESAPEAKE BAY WATERSHED

FLATHEAD CATFISH

- Can grow as long as 4 feet
- Dark brown to tan

Projecting lower jaw, Slightly hooked tail

BLUE CATFISH

- Scales blue on the back
- Sharp spines on its underside

Eyes set in lower half of the head, Straight anal fin, 30-35 rays, Deeply forked tail

WE NEED YOUR HELP!

- DNR asks anglers to keep any blue and flathead catfish they catch.
- Catch and release of these fish is discouraged, as they are invasive top predators and pose a serious long-term threat to our native species.

IN MARYLAND, IT IS ILLEGAL TO TRANSPORT LIVE BLUE AND FLATHEAD CATFISH INTO ANOTHER BODY OF WATER. VIOLATORS CAN BE FINED UP TO \$1,000.

For more information on Maryland's blue and flathead catfish policy, please visit www.dnr.state.md.us/invasive/

To report illegal transport or unauthorized introductions of invasive species please contact the Natural Resources Police at 800-635-8124.

MARYLAND DEPARTMENT OF NATURAL RESOURCES, Chesapeake Bay Program

the Commission, including shad, river herring, striped bass, and American eel.

Native fish don't have to be directly preyed upon to be affected by the blue catfish. The ever-increasing number of blue catfish escalates competition for resources that are shared between species. Blue catfish eat prey types and utilize habitat that are also used by many native species. As a result, blue catfish have been very successful at outcompeting and crowding out these endemic species. Recently, researchers conducting electrofishing sampling on the James and Rappahannock Rivers reported that blue catfish represent about 75% of the total fish biomass (total amount by weight) in these rivers.

The intense predation pressure that blue catfish inflict upon affected fish and invertebrate communities, coupled with the relative density of this species, is the crux of their devastation; blue catfish disrupt trophic dynamics (the food chain) and crowd out native species. In turn, the economic value of affected fisheries depreciates as native fish species are eaten or outcompeted. For those species that populate the Chesapeake Bay, and for the people whose livelihoods depend upon them, the blue catfish represents an impending threat on the horizon.

Management Actions

The Maryland Department of Natural Resources has developed an outreach program to help fishermen recognize and remove blue catfish, encourage harvest, and understand the negative consequences of their transport between water bodies. The program also spreads awareness on the severity of blue catfish impacts on the Chesapeake Bay through the use of cautionary and educational signs posted at various locations commonly used by anglers.

Additionally, efforts are being made in Maryland and Virginia to develop a commercial fishery for blue catfish, which offers three benefits: the depletion of catfish numbers, relief from fishing pressure on native species, and an economic opportunity for fishermen. For more information on Maryland's and Virginia's efforts, please contact:

NOAA Chesapeake Bay Office

410 Severn Avenue / Suite 112, Annapolis, Maryland 21403; (800) YOUR-BAY; http://www.chesapeakebay.net/groups/group/invasive_catfish_task_force; <http://www.chesapeakebay.noaa.gov/fish-facts/invasive-catfish>



Amy Hirrlinger, who authored this issue's Science Highlight, is the Commission's summer intern. Recently graduated with a B.S. in Biology with Ecology focus and a Minor in Wildlife and Fisheries Science from Pennsylvania State University, Amy will be working on a number of fisheries management and science activities. Amy

comes to us with a strong interest in environmental management and population dynamics. She views this internship as an invaluable opportunity to help her decide where her career passions lie. Intelligent, inquisitive, and up to whatever task we put before her, Amy is a welcome addition to the Commission staff.

Want to Make a Difference? Catch 'em & Eat 'em

As with any invasive species, it is very important to not transport blue catfish between water bodies.

Fishermen are encouraged to catch and keep blue catfish; there are no seasonal restrictions and no creel or minimum size limit. Virginia law states anglers may not keep more than one blue catfish over 32 inches per person per day.

Wild blue catfish is making its way onto restaurant menus and can now be found in select grocery stores. Try this recipe or prepare blue catfish at home to help the catfish market grow!

Save our Rivers Catfish Tacos

Salsa:

2 tomatoes, diced
1 small red onion, finely chopped
1 ear of corn, cooked and cut from cob
Frank's Red Hot Sauce
salt to taste

Guacamole:

1 clove fresh or jarred garlic, grated
1 avocado, peeled and pitted
1 lime, halved

one can (16 oz) refried beans
¼ cup chicken stock
1 tsp cumin

8 medium tortillas
4 medium catfish fillets
Roasted Garlic and Herb seasoning
1 large handful fresh spinach leaves, torn
1 cup shredded cheddar
1 cup sour cream

For salsa, toss tomato, one half of the onion, and corn in a small bowl. Season with salt and hot sauce to taste. In another bowl, mash the avocado with the remainder of the onion, juice from one half of the lime, and garlic, to make guacamole.

Combine the beans, chicken stock, and cumin in a sauce pan on low heat, stirring occasionally until warm. Season with hot sauce to taste.

Place catfish on lightly oiled tinfoil. Liberally sprinkle with garlic and herb seasoning on both sides. Grill over medium heat for 8 to 10 minutes, until catfish is white and flaky. Chunk catfish into a bowl.

Lightly toast tortillas on the grill.

Allow diners to prepare their tacos with chunks of catfish, spinach leaves, bean mixture, guacamole, salsa, and sour cream. Top with cheese and a squeeze of lime and enjoy!

Legislation Enacted to Combat Algal Blooms and Hypoxia

On June 30, 2014, President Obama signed the *Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2014* into law. The bipartisan measure passed the House and Senate with near unanimous support and is the only stand-alone ocean conservation legislation enacted this Congress. Six Atlantic coast state Senators are listed as cosponsors of the legislation: Angus King (I-ME), Ed Markey (D-MA), Sheldon Whitehouse (D-RI), Richard Blumenthal (D-CT), Kirsten Gillibrand (D-NY), and Benjamin Cardin (D-MD).

Authored by Senator Rob Portman (R-OH), the law reauthorizes the *Harmful Algal Bloom and Hypoxia Research and Control Act of 1998* and establishes a national HAB and Hypoxia Program at NOAA. The NOAA program will be responsible for promoting a national strategy to help communities understand, predict, control,

and mitigate freshwater and marine HAB and hypoxia events; enhance, coordinate, and assess the activities of existing HABs and hypoxia programs; provide for development of a comprehensive research plan and action strategy; and requiring an assessment and plan for Great Lakes HABs and hypoxia. The last authorization for the programs under the *Harmful Algal Bloom Research and Control Act* expired in 2010. The newly enacted law authorizes a maximum funding level of \$20.5 million per year from 2014 to 2018. In recent years, funding has dropped well below that level but allies in Congress have pledged to push for increased funding in future years.

Colloquially known as red or brown tides, HABs occur when microscopic algae grow rapidly and form a mass that often discolors the water. They form in both marine and fresh water and

often produce toxins that affect marine organisms including fish, shellfish, and marine mammals. HABs further affect ecosystems by blocking sunlight and overwhelming bottom habitats. Finally, when large blooms die and decompose, oxygen is stripped from the water resulting in “dead zones.” In aquatic systems, hypoxia refers to a situation where the concentration of dissolved oxygen is greatly reduced.

The economic effects of HABs and hypoxic events are surprising. Commercial fisheries annually lose an estimated \$38 million as a result of these events and recreation and tourism impacts are roughly \$4 million per year. In addition, the public health cost of human illness is estimated at \$37 million annually and the cost of coastal monitoring and management is about \$3 million per year.

continued, see LEGISLATION on page 12



SUMMER MEETING AGENDA, continued from page 7

12:30 – 2:30 PM

South Atlantic State/Federal Fisheries Management Board

- Public Comment
- Spot and Atlantic Croaker Trigger Exercises Update (*C. McDonough*)
- Consider Draft Addendum I to the Spot Omnibus Amendment and Draft Addendum II to the Atlantic Croaker Amendment I for Final Approval (*K. Rootes-Murdy*) **Final Action**
 - Review of the Draft Addenda (*K. Rootes-Murdy*)
 - Public Comment Summary (*K. Rootes-Murdy*)
 - Consider Final Approval of the Addenda I & II
- Consider FMP Reviews and State Compliance (*K. Rootes-Murdy*) **Action**
 - Atlantic Croaker
 - Red Drum
- Review and Consider Approval of 2015 Red Drum Stock Assessment Terms of Reference (*J. Kipp*) **Action**

2:45 – 4:45 PM

NOAA Recreational Policy Workshop

NOAA Fisheries is developing an agency-wide saltwater recreational fishing policy which outlines a set of principles to guide its actions and decisions over the long-term. The policy will share basic tenets with the Magnuson-Stevens Fishery Conservation and Management Act (MSA). While the MSA outlines the legal requirements, this new policy will make clear the values NOAA will keep in mind when implementing the law. Further, the policy will serve as the underpinning to the agency’s recreational fishing action agenda, which is updated every 4 years.

Sam Rauch, Deputy Assistant Administrator for Regulatory Programs, will lead the workshop. The workshop will be the Commission’s opportunity to provide input to NOAA on what should be included in the new policy initiative.

**Atlantic States Marine
Fisheries Commission**

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LEGISLATION, continued from page 11

In the Chesapeake Bay and its tributaries, outbreaks of *Pfiesteria*-like organisms resulted in a collapse of the seafood industry in 1997. The loss to commercial watermen, charter-boat operators, seafood dealers, and seafood restaurants was approximately \$43 million. There were also significant public health concerns as many people became ill due to exposure to *Pfiesteria*.

In New England, red tide outbreaks in 2005, 2006, and 2008, resulted in the closure of shellfish beds in Maine, New Hampshire, and Massachusetts and fish kills in Rhode Island. The 2005 red tide event alone cost the region approximately \$23 million in lost shellfish sales. A significantly more severe outbreak in 2009 forced the closure of 97% of Maine's 89,000 acres of inshore shellfish habitat and 100% of the ocean quahog beds. The economic impacts of the 2009 bloom are estimated in the tens of millions of dollars in Maine alone. HABs and hypoxic events also affect ecosystems nationwide, including the Pacific Northwest, Hawaii, Alaska, Gulf of Mexico, and the Great Lakes.



Photo Credit: Flickr User AJC1

NOAA's partners in the HAB and Hypoxia Program include the Environmental Protection Agency; the Department of Agriculture; the Department of the Interior; the Department of the Navy; the Department of Health and Human Services; the National Science Foundation; the National Aeronautics and Space Administration; the Food and Drug Administration; the Office of Science and Technology Policy; the Council on Environmental Quality; and the Centers for Disease Control and Prevention. The law further requires NOAA to coordinate with regional, state, tribal, and local government agencies and programs.

Facts and statistics in this article were obtained from *Senate Report 113-121 - Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2013* and *House Report 113-471 Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2014*.