



## Forage Management in the Mid-Atlantic

Forage species are small, low trophic level fish and invertebrates that play a central role in the marine food chain. These species facilitate the transfer of energy to higher trophic levels by consuming very small prey and then being eaten by larger fish, marine mammals, and seabirds.

In 2016, the Mid-Atlantic Council adopted a policy of supporting the “maintenance of an adequate forage base in the mid-Atlantic to ensure ecosystem productivity, structure and function, and to support sustainable fishing communities.” The following sections describe the Mid-Atlantic Council’s involvement in a range of forage fish management efforts.

### Managed Forage Species

#### *Mackerel, Squid, Butterfish*

Since 1983, the Mid-Atlantic Council has managed four forage species – Atlantic mackerel, *Illex* squid, longfin squid, and butterfish – under a single Fishery Management Plan (FMP). The Council sets annual catch limits, accountability measures, and other management measures that are intended to prevent overfishing while allowing these fisheries to achieve optimum yield.

In March 2019, the Mid-Atlantic Council approved an amendment to add chub mackerel to the Atlantic Mackerel, Squid, and Butterfish FMP. Chub mackerel may be important to the diets of tunas, marlins, and other predators in the Mid-Atlantic and have also been harvested by commercial fishermen. If approved by NOAA Fisheries, the Chub Mackerel Amendment will establish catch limits, accountability measures, and other conservation and management measures required under the Magnuson Stevens Fishery Conservation and Management Act for stocks “in the fishery.”

#### *River Herring and Shad*

The Atlantic States Marine Fisheries Commission (ASMFC) has primary management responsibility for river herring (alewife and blueback) and shad (American and hickory). There are no directed fisheries in federal waters for these species. However, because they are caught in fisheries targeting other species, the Mid-Atlantic Council limits the incidental catch of river herring and shad in the Atlantic mackerel fishery through a catch cap that can close the directed mackerel fishery if it is reached. The Mid-Atlantic Council reviews river herring catch and abundance information annually when setting the cap and also collaborates with NOAA Fisheries and the ASMFC on a Technical Expert Working Group to help address broader river herring conservation issues. The Council is currently developing a geographic interface (“story map”) designed to allow managers and the public to conveniently access up-to-date survey and run count information for all monitored river herring and shad runs on the east coast.

### Unmanaged Forage Species

In August 2016, the Mid-Atlantic Council approved the Omnibus Unmanaged Forage Amendment. This amendment designated 16 forage species groups as ecosystem components in all the Council’s fishery management plans. The intent of this action was to prohibit the development of new and expansion of existing directed commercial fisheries on certain unmanaged forage species in Mid-Atlantic federal

waters until the Council has had an adequate opportunity to assess the scientific information relating to any new or expanded directed fisheries and consider potential impacts to existing fisheries, fishing communities, and the marine ecosystem.

#### Mid-Atlantic Forage Species and Species Groups Designated as Ecosystem Component Species

- Anchovies
- Argentines/Smelt Herring
- Greeneyes
- Halfbeaks
- Lanternfishes
- Round Herring
- Scaled Sardine
- Atlantic Thread Herring
- Spanish Sardine
- Pearlsides/Deepsea Hatchetfish
- Sand Lances
- Silversides
- Cusk-eels
- Atlantic Saury
- Unmanaged pelagic mollusks except sharptail shortfin squid
- Species under 1 inch as adults (Copepods, Krill, Amphipods)

None of these ecosystem component species have been assessed, and there are no biomass or abundance estimates. Many forage species are short-lived and undergo substantial cyclic fluctuations in stock size. Abundance of many of these species is sensitive to environmental factors. These factors pose challenges for traditional stock assessment and management approaches.

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#### Additional Resources

- River Herring and Shad Management: <http://www.mafmc.org/rhs>
- Omnibus Unmanaged Forage Amendment: <http://www.mafmc.org/actions/unmanaged-forage>
- Chub Mackerel Amendment: <http://www.mafmc.org/actions/chub-mackerel-amendment>
- Unmanaged Forage Species Identification Guide: <http://www.mafmc.org/s/NOAA-Mid-Atlantic-Forage-Species-ID-Guide.pdf>
- Mid-Atlantic Council Ecosystem Approaches to Fisheries Management Guidance Document: <http://www.mafmc.org/eafm>