

## GREAT SALT POND STUDY – Part 2 of 6: Varieties of Fish in the Pond

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### GREAT SALT POND, “NURSERY OF THE SEA”

Often referred to as “nurseries of the seas,” estuaries like the Great Salt Pond are known to play a vital role in the lives of many fishes. For the last ten years, The Nature Conservancy (TNC) and the Rhode Island Department of Environmental Management, Division of Marine Fisheries (RI DEM, DMF) have been evaluating fish populations in the Pond to gain a fuller understanding of how the ecosystem functions as critical nursery habitat. Through a holistic approach to monitoring, we conduct annual fisheries surveys by using seine nets and fish pots to document relative abundance and diversity of fishes from May to October. Not only have we learned that this offshore estuary does support a wide array of ecologically important species, but it also contributes to the production of future recruits into commercial and recreational fisheries.



Block Island

### VARIETIES OF THE FISHES IN THE POND

The composition of fish species assemblage in the Great Salt Pond changes throughout the year as different species and life stages move in and out of the estuary. To help us understand the varieties of fishes we encounter, we group them into general categories: resident, migrant (transient), and tropical species. We also categorize them as freshwater, estuarine, marine, anadromous (move to freshwater to spawn), or catadromous (move to salt water to spawn).

Resident fishes spawn and live out their whole lives within the estuary. Silversides, mummichogs, and striped killifish are the most common resident species found in the Great Salt Pond and are often caught in high abundances at sites near salt marshes and tidal creeks. These bait fishes are the most abundant species caught during the seine survey each year and together, they account for more than 90% of our total catch for the sampling season. We also catch abundances of other bait fish species such as American sand lance and Atlantic menhaden. These schooling fishes are found all over the Pond and are a major source of food for larger sportfish such as bluefish and striped bass.

Migrant, or transient, species spend only part of their lives in the estuary. During the warmer parts of the season, they can actually outnumber the resident species, and are typically individuals in their early life stages (larvae and juveniles). Winter flounder and tautog—two of the five target species we quantify for the cooperative agreement—are estuarine spawners. They live just offshore and migrate into estuaries to reproduce (during the winter months for winter flounder and spring months for tautog). We often catch young-of-the-year winter flounder throughout the sampling season, which indicates repeated annual spawning migrations happening in the Pond throughout the year. The remaining three target species we quantify for analysis—scup, summer flounder, and black sea bass—are marine fishes who spawn offshore while their larvae and juveniles migrate into estuaries. These species are commonly caught in both gear types throughout the sampling season—juveniles in the seine net and adults in the fish traps—further illustrating this migration pattern.

Tropical fishes refer to those species that get swept up into the Gulf Stream, which is a powerful, warm water current from the Caribbean that carries them north. These fishes are often deposited close to New England shores and estuaries, acting almost as a sanctuary for them during the warmer parts of the season. In late July and August is when we typically start to catch juvenile individuals of crevalle jack, honeycomb cowfish, butterflyfishes, and even doctorfish. We have also caught a few juvenile bonefish and an orange filefish during the seine survey in past years. These species are considered to be way out of their range and rare finds

in our waters. On another occasion, we caught a sargassumfish in early November when the water temperature was still hovering above 60°F. This frogfish species is found throughout the tropical and subtropical seas of the world and gets its name from the sargassum sea grass beds it camouflages itself in. It's amazing to think about how far these tropical individuals may have traveled to make it all the way up here in the Great Salt Pond!

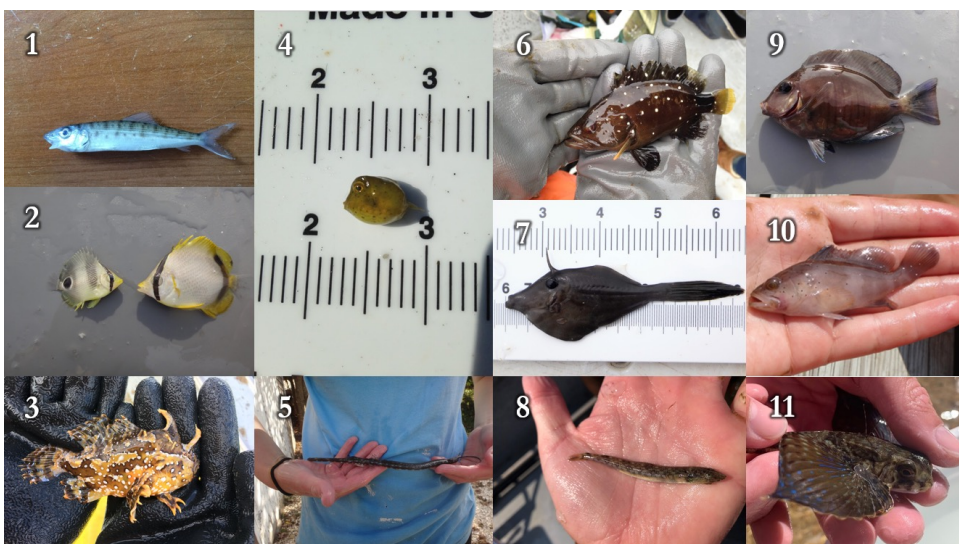
### HEALTHY, ESTUARIES, HEALTHY FISHERIES

Since 2014, over 100 different fishes have been identified in the Great Salt Pond. We've also measured and counted over 300,000 individuals from about 40 different fish families. Fisheries studies like the ones we conduct in the Pond highlight the importance of continued evaluation of finfish assemblages, particularly in response to changing climate. Ultimately, these surveys serve as a valuable tool for restoration and management of estuaries and will remain to be a critical part of their conservation and the species they support.

To learn more about TNC on Block Island, please visit [natureblockisland.org](http://natureblockisland.org) or call 401.466.2129.



Species of interest for TNC fisheries assessments (by numbers): Scup (1); Tautog (2); Winter flounder (3); Summer flounder (4); Black sea bass (5).



Fun fish finds from the Pond (by numbers): Bonefish (1); Four-eye butterflyfish, spotfin butterflyfish (2); Sargassumfish (3); Honeycomb cowfish (4); Bluespotted cornetfish (5); Snowy grouper (6); Orange filefish (7); inshore lizardfish (8); Doctorfish (9); Red hind grouper (10); Flying gurnard (11).



Fun fish finds from the Pond (by numbers): Lookdown (1); Lined seahorse (2); Horse-eye jack (3); Northern pipefish (4); Yellow jack (5); Bluefish (6); Atlantic tomcod (7); Windowpane flounder (8).



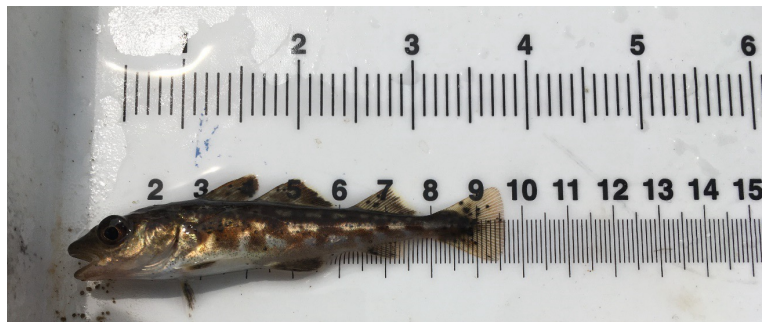
Winter flounder is a species that stays close to home for much of its life cycle. Born in estuaries and inlets, they spend their juvenile life stage in shallow waters, move offshore as adults, and then return to the same or close-by estuaries year after year to spawn.



An adult tautog caught in one of the fish traps off of the slopes at Beane Point by the open channel of the Pond. Tautog are slow growing and can live to 35-40 years old.



Sargassumfish, member of the frogfish family, have the ability to crawl around the sargassum sea grass bed with its specialized fins that can cling on. When it is threatened, the species can hop out of the water onto seaweed mats for extended periods of time.



Young-of-the-year Atlantic cod like complex habitats. They prefer gravel and cobble bottoms and grow best in eelgrass, but they also use sandy areas next to these habitats when predators are not around. We typically catch juvenile cod during early parts of the sampling season.

**OUR MISSION:** To protect and enhance the environmental quality of the Great Salt Pond, including its shorelines and wetlands, and to promote appropriate and productive uses of the Pond's resources by residents, visitors and local businesses.

**FUNDING:** Individual contributions, membership dues, special events, program grants. IRS 501(c)3 non-profit. Contributions are tax-deductible to the extent allowed by law.

Please consider becoming a member of The Committee for the Great Salt Pond. For information and details, visit our website at [cgspblockisland.org](http://cgspblockisland.org).