



Sources of Striped Bass in the Mixed-Stock Recreational  
Fishery in Northern NJ  
Preliminary Findings

## Sources of Striped Bass (*Morone saxatilis*) in the Fall Mixed-Stock Recreational Fishery in Northern New Jersey

Location	Sample Size
Ocean County Beaches*	60
Barnegat Bay and Lagoons	17
Sandy Hook	8
Total	85

\*Ocean County Beaches includes fish from the following locations: Lavallette, Seaside Heights, Seaside Park, Island Beach State Park

## Fin Clip Analysis

DNA extraction and quantification:

- 85 individual fin clips X 3 PCR's = 255 reactions... but each reaction has multiple markers

Genotyping runs using fluorescence

- 85 individuals X 14 loci = 1,190 genotype calls

Evaluate population structure and identify likely source populations for New Jersey stripers

## Results

GeneClass	N	Hudson	CB / DEL	NC
Ocean County Beaches*	60	20%	65%	15%
Barnegat Bay and Lagoons	17	29%	53%	18%
Sandy Hook	8	22%	63%	11%

\*Ocean County Beaches includes fish from the following locations:  
Lavallette, Seaside Heights, Seaside Park, Island Beach State Park

Structure	N	Hudson	CB / DEL	NC
Ocean County Beaches*	60	21%	66%	13%
Barnegat Bay and Lagoons	17	27%	58%	16%
Sandy Hook	8	27%	57%	16%

\*Ocean County Beaches includes fish from the following locations:  
Lavallette, Seaside Heights, Seaside Park, Island Beach State Park

## Preliminary Findings

Our analysis has allowed us to group our sample into 3 geographic clusters.

Most of our fish are assigned to the Chesapeake Bay / Delaware River Supergroup and appear to share enough genetic variation that not all methods can separate them geographically

The Delaware River stock is considered to be small in comparison to the Chesapeake and Hudson stocks.

Our results are consistent with other information in the scientific literature on migratory movements of striped bass along the Atlantic coast:

- The coastal migratory stock is heterogeneous consisting of migratory individuals of diverse origins
- The coastal migratory stock is typically made up of a high percentage of individuals from Chesapeake Bay, followed by the Hudson River, and to a lesser extent, fish from the Roanoke River in NC.
- In fall, some portion of striped bass of Hudson River origin move south of NJ to overwinter in coastal rivers and offshore waters as far south as Cape Hatteras.
- A recent study of the population structure of the US Atlantic coastal striped bass (Gaither et al. 2013) also placed NJ fish primarily in CB / DE.