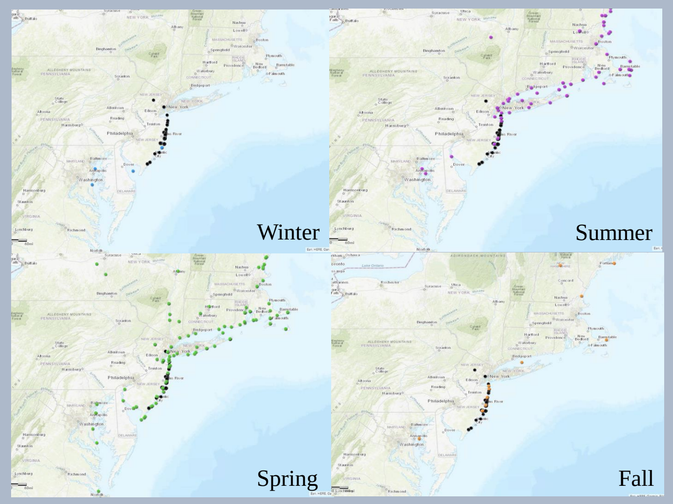
Mapping the migratory range of striped bass (*Morone saxatilis*) based on catch-and-release data from New Jersey

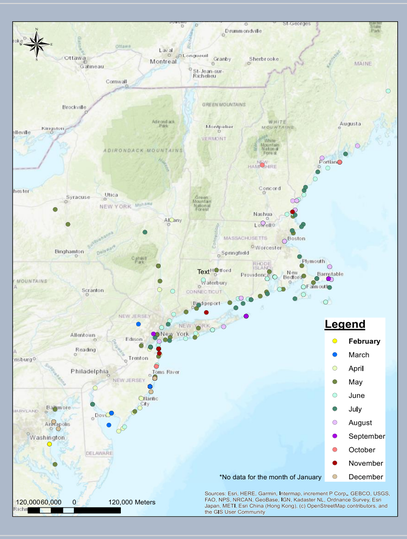
Sarah Gillogly, John Tiedemann, and Geoffrey Fouad
Monmouth University's Marine and Environmental Biology and Policy Program and Geographic Information Systems Program

MONMOUTH UNIVERSITY
SCHOLARSHIP WEEK

Seasonal Returns, Tagged Fall

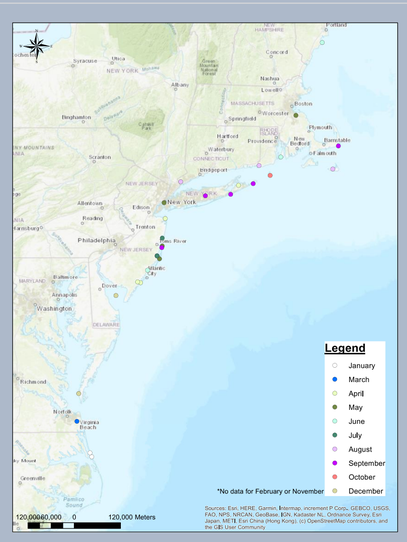


Monthly Returns, Tagged Fall



Seasonal Returns, Tagged Spring

Monthly Returns, Tagged Spring



Purpose:

To visualize spatial migration patterns of striped bass (*Morone saxatilis*) caught (tagged) in New Jersey using catch-and-release data from the Berkeley Striper Club volunteer tagging program

Methods:

- Data collected through publicly sourced catch-and-release tagging conducted by the Berkeley Striper Club
- Catch-and-release locations (relative place names) were organized in Excel and "geocoded" using the ArcGIS World Geocoding Service database of place names
- Geocoded points were organized monthly, seasonally (by equinoxes and solstices), and by latitude to visualize migration patterns over the span of a year

Results:

- Striped bass migration as visualized through this study is consistent with past conclusions drawn regarding species migration
- Fish move south in the winter and north in the summer in response to water temperature and feeding
- Winter migration centers on the Chesapeake Bay
- Summer migration centers on the Long Island Sound
- Migration in the spring months is primarily toward freshwater regions for spawning

Discussion:

The factors motivating migratory behaviors in striped bass are not definitively known. To date, several major studies have been conducted using catch-and-release data citing determinable factors of migration to be site fidelity (tendency to return to a site), spawning, resource availability, and habitat suitability. Further studies using catch-and-release tagging and acoustic telemetry tagging can lead to a greater understanding of striped bass migration and movement patterns

Future Implications:

- Furthering the scientific knowledge pertaining to striped bass migration, movements, and aggregations is important in taking proper fisheries management and conservation action
- Additional research needs to be done with tagging studies and new technologies such as acoustic telemetry tagging to more accurately depict this species migratory movements as they are an integral part of the Atlantic coast ecosystem and recreational fisheries