

COVID-19 Effects on Marine Resource Surveys

By Linda Barry, Senior Fisheries Biologist

In any given year, New Jersey Division of Fish and Wildlife's Marine Fisheries Administration biologists and scientists are hard at work crunching numbers to assess the stock of the valuable fishery species managed under the auspices of the Atlantic States Marine Fisheries Commission or one of the fishery management councils created by the passage of the Magnuson-Stevens Fishery Conservation and Management Act in 1976. Every year since then, Marine Fisheries Administration staff ventured onto the state's estuarine and ocean waters to conduct the many research surveys that are vital components in these assessments. Except for 2020.

In mid-March of 2020, due to the spiraling spread of COVID-19 within our state and beyond, the State of New Jersey mandated a lock-down that included sending most of the state work force home to work remotely. Field operations ground to a halt as health experts attempted to find ways to curtail the disease spread.

Pre-PPE Protocols

Without adequate and feasible guidelines in the use of personal protective equipment (such as masks and gloves), the inability to maintain the minimum of 6-foot social distancing between field personnel and the lack of established protocols for testing, quarantining and sanitization, most of the Marine Fisheries Administration's field work — which occurs in confined spaces onboard small boats or with personnel in close proximity while handling gear such as seine or trawl nets — could not be conducted in a way to secure the health and safety of those working these surveys. Finally, in

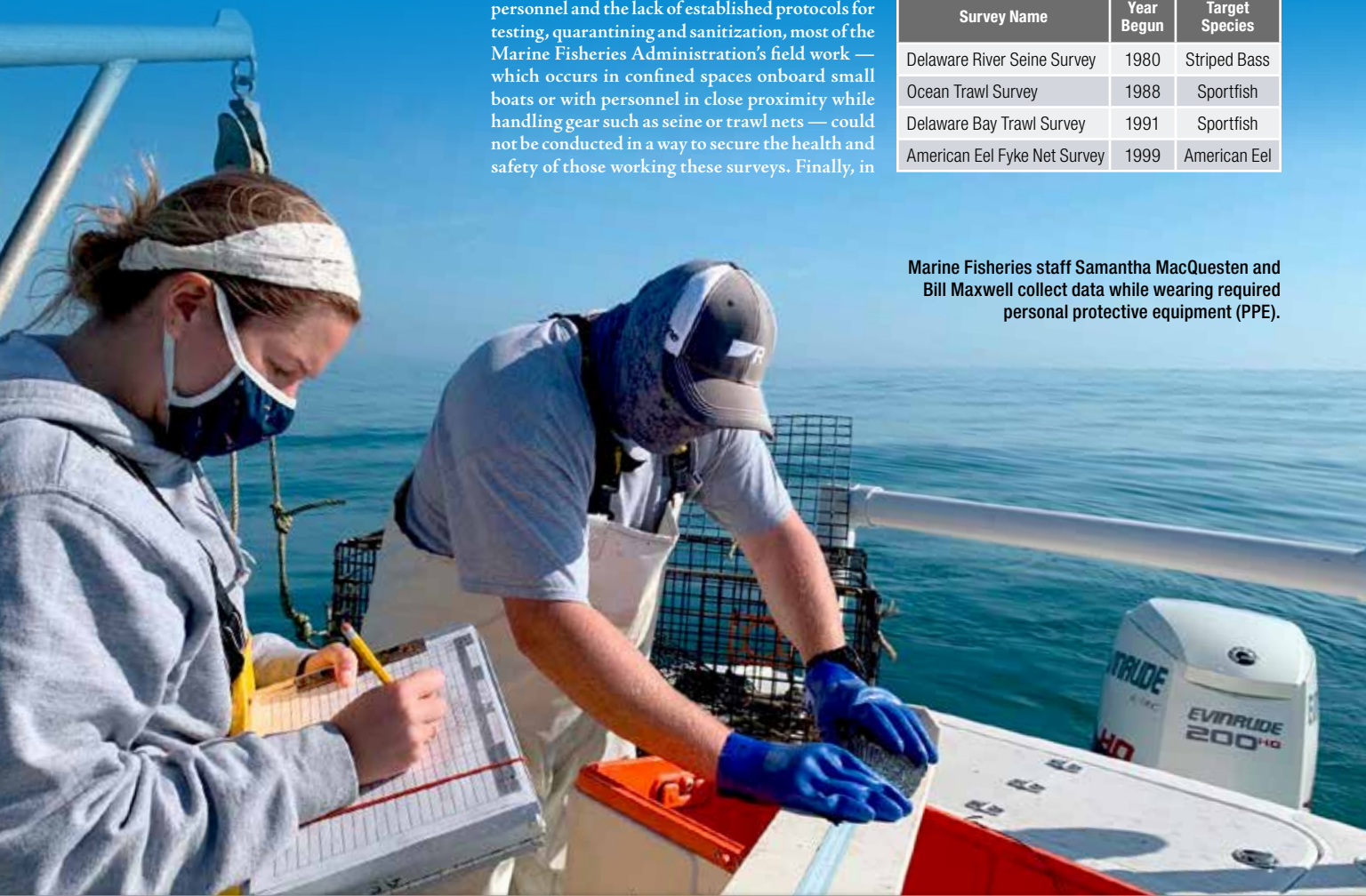
July of 2020, protocols to minimize the risk of disease spread were approved, thus allowing a few of New Jersey's Division of Fish and Wildlife field surveys to resume.

Missed Opportunities

The early summer release of COVID-19 safety protocols came too late to allow adequate sampling completion for many of the Marine Fisheries Administration surveys. These include, but are not limited to, such long-running surveys as listed in the table below:

| Survey Name | Year Begun | Target Species |
|------------------------------|------------|----------------|
| Delaware River Seine Survey | 1980 | Striped Bass |
| Ocean Trawl Survey | 1988 | Sportfish |
| Delaware Bay Trawl Survey | 1991 | Sportfish |
| American Eel Fyke Net Survey | 1999 | American Eel |

Marine Fisheries staff Samantha MacQuesten and Bill Maxwell collect data while wearing required personal protective equipment (PPE).



Biological samples for data such as length, weight, age and sex normally obtained from these surveys remain uncollected. Through the last two to three decades, these surveys have contributed valuable abundance, biomass, size and life history data to stock assessments for various species such as striped bass, summer flounder, black sea bass, scup, bluefish, winter flounder, American shad, river herring (alewife and blueback herring), weakfish, American eel, spiny dogfish, tautog and horseshoe crab.



Fisheries biologist Brian Neilan works safely in the lab.

Assessment Models Accommodate Data Gaps

Fortunately, stock assessment scientists have methods to handle short-term data gaps when inputting data into assessment models. For example, a coast-wide striped bass stock assessment from several years ago approached the absence of young-of-year data from some states by allowing the model to overlook the missing year. This approach is possible for statistical catch-at-age models such as the one used for striped bass. For species using a trend analysis model, assessment scientists examine a range of possible results using estimated or skipped values in sensitivity runs to evaluate the most reasonable method to handle data gaps.

Some of New Jersey Division of Fish and Wildlife's Marine Fisheries Administration sampling surveys resumed by mid-summer of 2020. Adaptive adherence to COVID-19 protocols succeeded with the use of protective equipment and social distancing for surveys conducted on land and for those utilizing larger vessels with small crews.

Telephone and Access Point Intercept Surveys

These surveys include two data sources for NOAA's Marine Recreational Information Program (MRIP) for New Jersey: the For-Hire Telephone Survey which was conducted as originally scheduled but on a remote, work-from-home basis and the Access Point Angler Intercept Survey (APAIS) which resumed in July, albeit on a somewhat curtailed basis. At-sea interviews could not be conducted due to tight social distancing conditions. Angler intercepts decreased due to a low rate of encountering anglers wearing masks and social distancing.

These two surveys gather critical information such as the effort expended by recreational fishermen, their target species, what was caught, kept and released and the lengths of harvested fish. Marine Recreational Information Program data are crucial for accurately assessing numerous fish stocks since many fisheries in New Jersey are dominated by the recreational sector.

Data Collections Continue

The Striped Bass Bonus Program, created in 1990, continued enrolling participants over the summer via an email-only system to collect angler catch data. A ventless trap survey, initiated in 2016 with sampling sites on and around three of New Jersey's artificial reefs, resumed sampling in July after having to cancel its planned spring season. A project tracking the movements of Atlantic sturgeon and other species, like coastal sharks, in Delaware Bay, resumed downloading data in August from receivers deployed prior to the pandemic restrictions.

These surveys provide the biological and environmental data needed to accurately monitor and assess the health of important fisheries stocks as well as the forage species on which those stocks depend.

For 2021 surveys, staff within New Jersey Division of Fish and Wildlife's Marine Fisheries Administration are proceeding with conducting monitoring and research work as COVID-19 safety protocols allow, providing the valuable data needed to rebuild and maintain sustainable marine resources in New Jersey for generations to come. 