Monitoring, It's What We Do

"Do you think we'll have a good fall for spotted seatrout?" "What's the shrimp baiting season going to be like?" Employees with the Marine Resources Division of the SCDNR get these questions every year at this time. Fortunately, we usually know the answers.

We know because information gathered through our Inshore Fisheries and Crustacean-monitoring programs gives us a good idea of the health and abundance of species within a particular fishery over any given period of time. As a result, we can accurately predict the impacts on the resource from many factors, including recreational harvest and environmental conditions.

We consider the monitoring of marine fisheries one of our most important functions. A thorough understanding of our marine resources allows the SCDNR to effectively manage and promote the responsible use of those resources.

The inshore fisheries research section samples weekly throughout the year in the state's six major estuarine systems using consistent and precise methods. Utilizing a large net similar to a gill net, researchers capture key species such as spotted sea trout, red drum, and southern flounder, recording the number and species of each fish caught, as well as measuring and tagging each fish before releasing it.

By comparing catch with effort over the years, researchers can estimate species abundance. An increase in effort that results in a decrease in catch indicates a species has declined. For example, after the particularly cold winter of 2010, net catches of spotted seatrout dropped significantly, suggesting that many trout had succumbed to the colder than normal water. Following the several consecutive mild winters since 2010, we have seen a gradual increase in spotted seatrout. Without continuous monitoring, we would never be able to recognize how severe winters impact seatrout.

White shrimp, like spotted seatrout, are a subtropical species susceptible to cold water. Specifically, we know that prolonged water temperature below 46 degrees is lethal to overwintering white shrimp. Monitoring of white shrimp populations allows us to recognize die offs resulting from severe winters and adjust the commercial season opening accordingly.

Recreational shrimp baiting does not start until September, months after the commercial season begins in late spring, so it is difficult to predict how well the baiting season will be based on commercial catches. However, we do know from our monitoring efforts that a mild winter combined with moderate rainfall during the spring and summer seems to create ideal conditions for white shrimp in our estuaries just as the shrimp baiting season gets underway.

We will probably never be able to totally explain fluctuations in spotted seatrout or white shrimp stocks, or any marine fishery for that matter. However, the consistent monitoring of these and other marine fisheries makes it easier to proactively manage the resource in such a way that benefits all user groups.

Anglers who have spent many hours on the water year after year often become “tuned in” and may naturally recognize changes to the abundance of a stock, or behavioral differences in the species they are targeting, but they don't always know why.

Our long-term, continuous monitoring programs allows us to predict these yearly changes in abundance and to provide the "why."