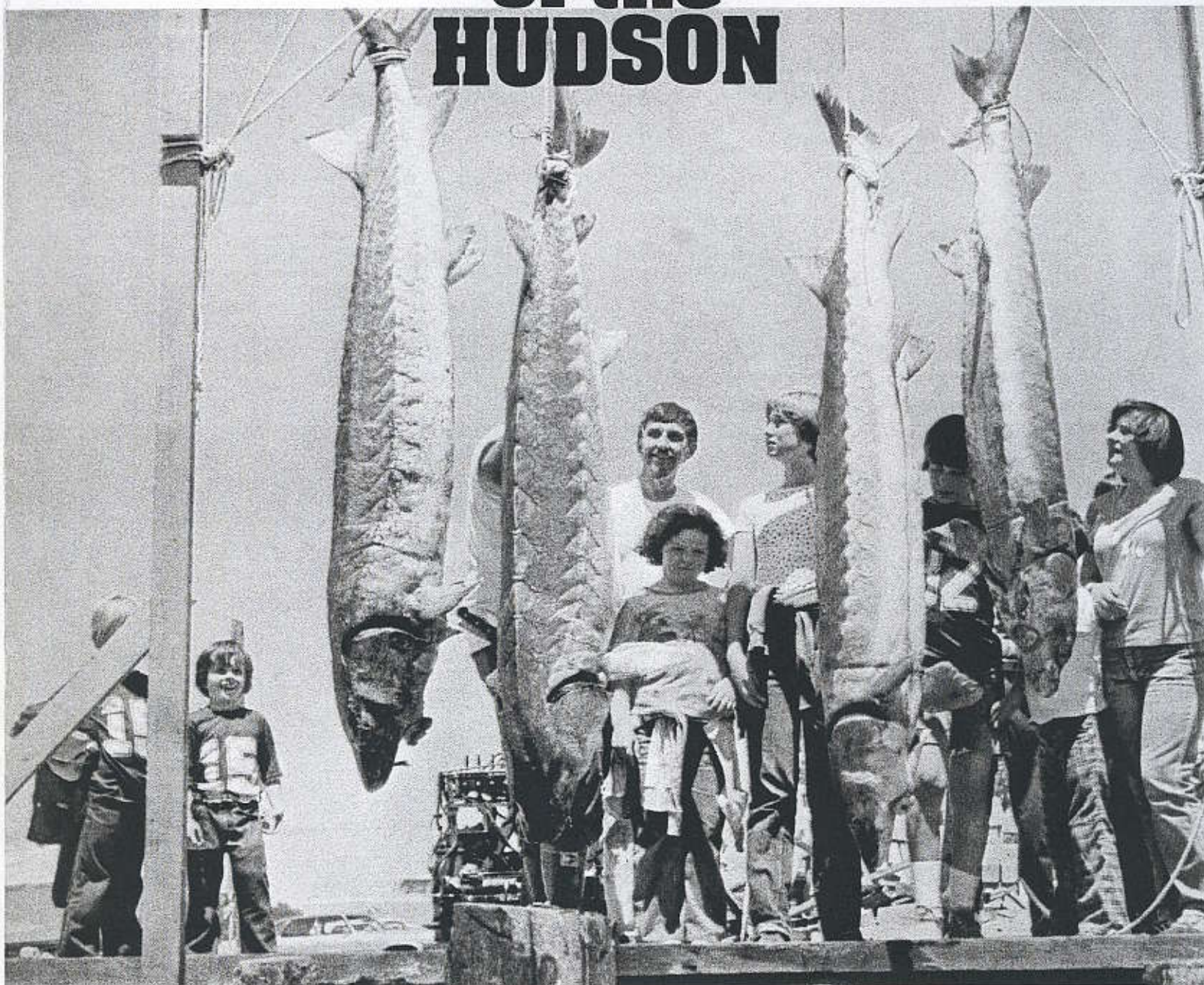


DINOSAURS of the HUDSON

by Marc E. Crandall



Commercial catch of Atlantic sturgeon

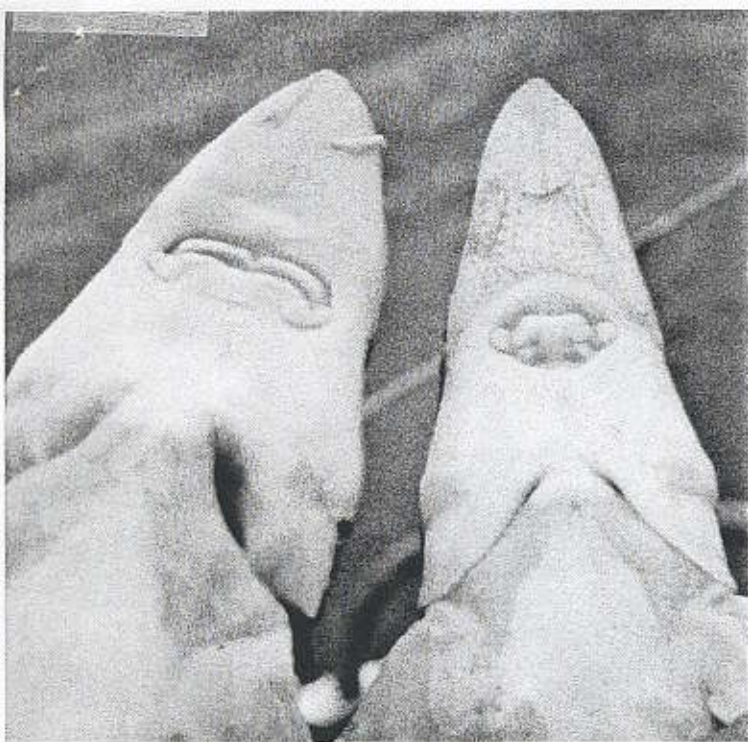
Wm. Doveil

AS I sat in our whaler watching fisherman Charlie White haul a 200-pound sturgeon out of his gill net, I was amazed by the beauty of the fish. The strange looking mouthparts, the bony bucklers along the sides and back, and the shark-like tail all added to an appearance reminiscent of the ancient dinosaurs.

The sturgeon was once a common item in the nets of fishermen along the Hudson River. Near the turn of the century barge loads of sturgeon were often seen on their way from the main fishing centers near Hyde Park, N.Y., to the markets of Albany. Sturgeon comprised such a significant portion of the city's diet that it was dubbed "Albany beef."

And Albany was sometimes referred to as Sturgeontown. As much as 150,000 barrels of caviar were exported each year to Europe. Since that time, primarily due to overfishing, the population of sturgeon has dwindled in the Hudson.

Two species of sturgeon inhabit the waters of the Hudson and little is known of their biology. They are ancient fish

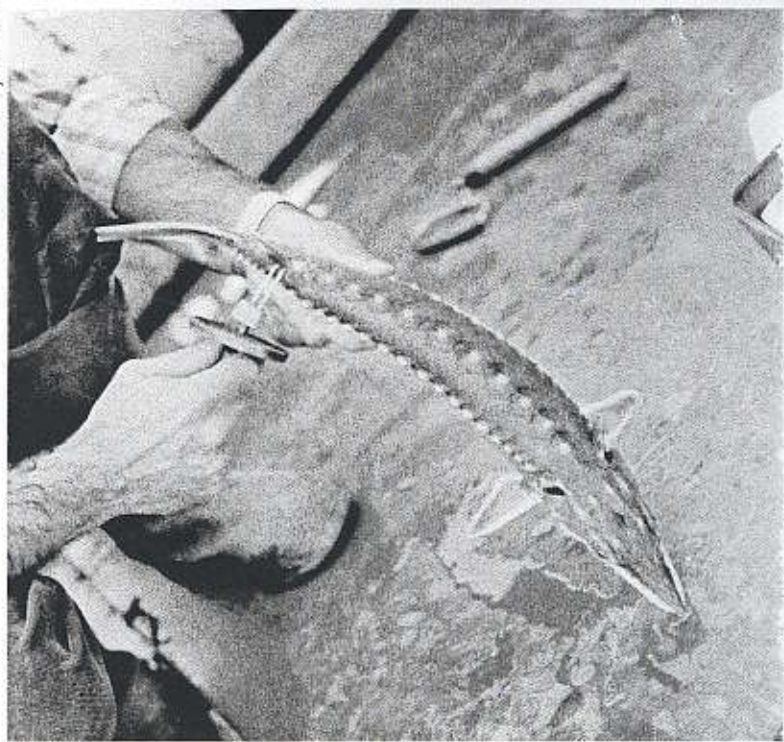


Mouth parts (left) shortnose sturgeon, (right) Atlantic sturgeon.

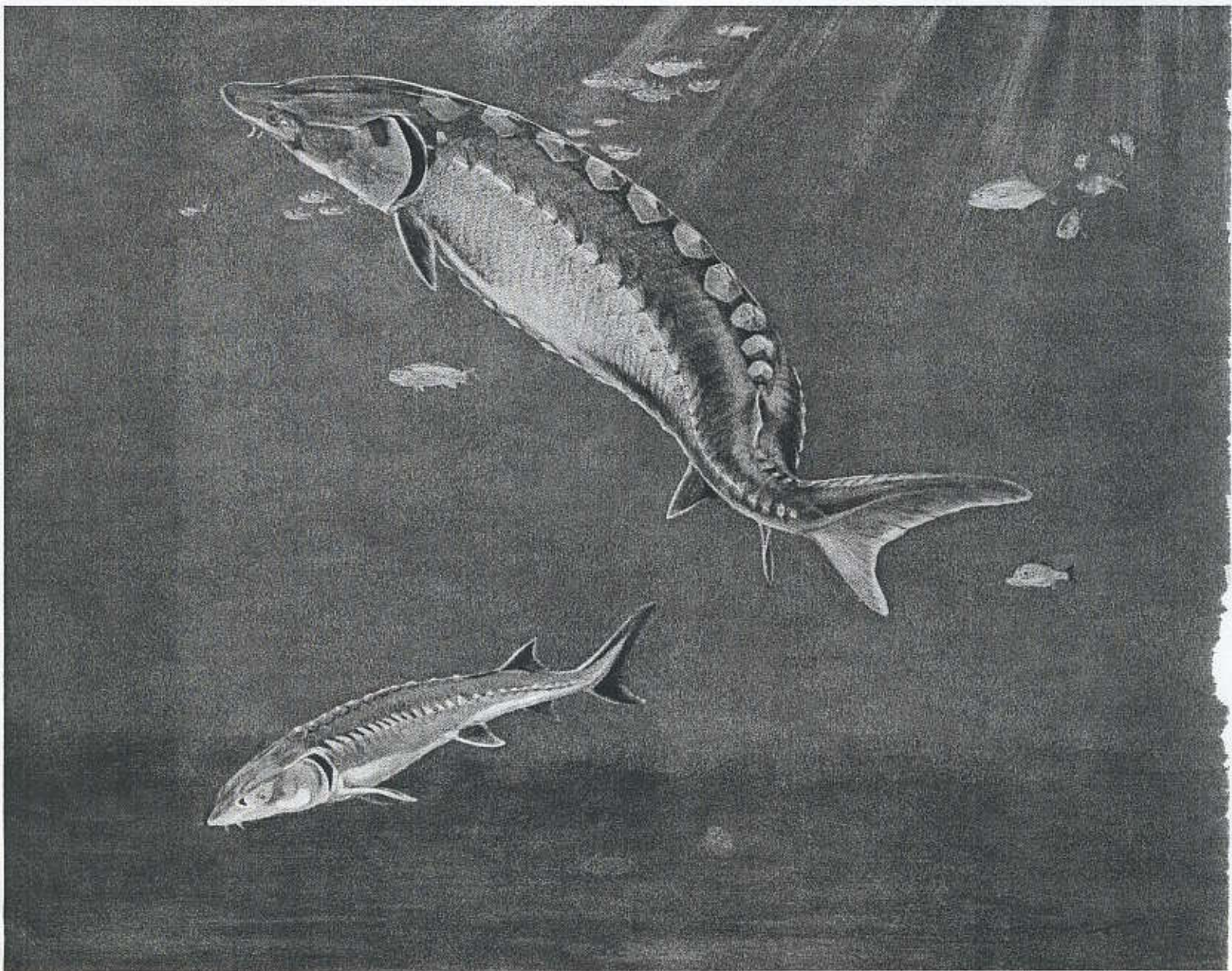
Adult Atlantic sturgeon (top). Shortnose sturgeon (below).

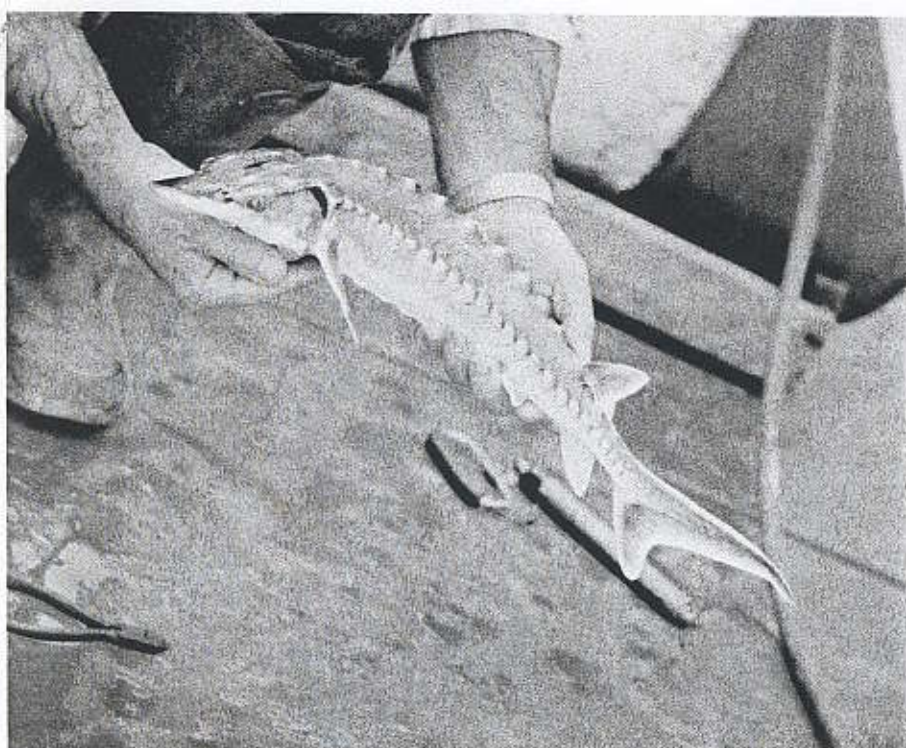
Wayne Trimm

Wayne Trimm



Tagging of small Atlantic sturgeon.





Wayne Thibault

Tagged Atlantic sturgeon

remaining relatively unchanged for the last 300 million years. The Atlantic sturgeon, *Acipenser oxyrinchus*, is the larger of the two species. It is anadromous—that is it spawns in the fresh and brackish waters of the estuaries and spends its adult life in the high salinity ocean water. During the late spring and early summer mature males and females migrate upriver to spawn and then return to the ocean. The young sturgeon remain in the estuarine waters for about 4 to 5 years before migrating to sea to join the adults. They remain there for several more years until they reach maturity. It is difficult to say just how large these fish become since few fishermen use equipment heavy enough to capture the larger fish. The largest individual caught last year was a female about eight feet in length and weighing 218 pounds. However, fishermen report holes in their nets indicating that some larger individuals had escaped. A Russian species, the Beluga sturgeon, has been reported up to 2900 lbs.

The shortnose sturgeon, *Acipenser brevirostrum*, is much smaller, reaching a maximum of about four feet and weighing approximately 15 pounds. It is not known if the shortnose is anadromous like the Atlantic sturgeon or whether it remains within the river system throughout its life. The shortnose was the more prized of the two species dur-

ing their abundant days but is now classified as an endangered species by the U.S. Fish and Wildlife Service.

Biologist William Dovel, with the help of several commercial fishermen along the Hudson, is attempting to gain a greater knowledge of the habits and life histories of these two species. Supported by funds from DEC and Boyce Thompson Institute, they are now engaged in a three-year tagging program that will yield important data on the migrations, population sizes and growth rates of these species. Results of the latest research by DEC and Nalco consultants have revealed that shortnose sturgeon apparently spawn near New Baltimore, about 14 miles south of Albany. They seem to be most abundant in the Kingston-Esopus Meadows, an area in the Hudson which also marks the northernmost limit where immature Atlantic sturgeon seem to be most numerous. Commercial fishermen have proven to be a great boon to the success of the project. By utilizing the nets of several fishermen, in addition to trawling, many more fish can be included in the study.

A second part of the study is a sonic tagging program in which individual fish are fitted with sound emitting tags during their spawning runs. This part of the program is accomplished using the 38-foot research vessel, J.G. Needham, on loan from Cornell University. On board

is a hydrophone set and accommodations to keep the listening team relatively comfortable for chases that can last as long as 25 days, the life of the sonic transmitter.

Another problem being tackled by Mr. Dovel is the art of aging sturgeon. With many fish species, striped bass for instance, aging can be accomplished by counting the tree-like growth rings on the scales of the fish. Although these scale rings are often difficult to interpret, they are child's play compared to aging sturgeon. Since the sturgeon has no scales, the first ray of the pectoral fin must be used for age identification. The ray must be removed from the fish, embedded in plastic and cut with a miniature table saw into slices approximately 0.3mm thick. They are then mounted on a slide and examined under a microscope. Like the scales of other fish and the trunk of a tree these bones display growth rings, one for each year of life. When one views these slides, however, all similarity with the rings of trees is gone. There are generally many compressed rings that are difficult to distinguish and often several false rings induced by spawning and changes in habitat during migration.

At the conclusion of the study Mr. Dovel will be able to estimate the size of the sturgeon population in the Hudson River and delineate areas of importance to these fish, such as spawning and nursery areas. With these facts it is hoped that sound management guidelines based on biological information can be proposed. ☉



Marc E. Crandall is an estuarine biologist working as a member of the Hudson River estuarine study group at Boyce Thompson Institute since 1972. He received his master's degree from Long Island University and is presently working toward a doctorate in marine science at Louisiana State University.