

# DEPARTMENT of the INTERIOR

FISH AND WILDLIFE SERVICE

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## FISH ATLAS TO AID SELECTION OF ATLANTIC COAST POWER PLANT SITES

The most comprehensive atlas ever compiled of fishes of the Middle Atlantic coast has been published by the Interior Department's U.S. Fish and Wildlife Service in an effort to help utility companies and government agencies determine the environmental impacts of power plants and other man-made alterations in the coastal zone.

The six-volume reference set is of particular importance in light of the recent energy development activities that center along the mid-Atlantic coast. In the past, construction of power plants along coastal estuaries and major river systems has had major impacts on area fisheries.

"Development of Fishes of the Mid-Atlantic Bight--An Atlas of Egg, Larval and Juvenile States," compiles biological information on 321 fish species and includes descriptions of their geographic range and distribution, movements at all life stages, and spawning migrations and life habits during adult stages.

The mid-Atlantic bight is an area extending from the northern boundary of New Jersey to the southern boundary of Virginia, from tidal freshwater out to the Outer Continental Shelf (100-fathom contour). The term "bight" refers to a bend in a coastline bounded by two large areas of land, in this case the area roughly bordered by Long Island to the north and Cape Hatteras to the south.

Most species of temperate-water fish can be found in this area of the Atlantic coast at some time during the year. Cold-water and tropical fish can also be found in the mid-Atlantic bight during their seasonal movements and migrations.

Because of the impacts of power plants on egg, larval, and juvenile stages of fish, the atlas is expected to be of major help to utility companies and Federal and State agencies in the assessment of the ecological consequences before such projects are built in coastal areas. The taxonomic information contained in the atlas can also be applied to environmental assessment for impacts from a variety of other man-made alterations in the coastal zone. Until the development of this atlas, however, this type of information has been scattered throughout a large number of sources.

Power plants require large volumes of water from rivers, lakes, reservoirs, and estuaries for cooling systems. Fish eggs, larvae, and juveniles can be drawn into these systems or caught by intake screens and killed during withdrawal of cooling water.

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The discharge of heated water also causes thermal and chemical pollution. It can alter stream flow patterns and disrupt the thermal and dissolved oxygen stratification in these water bodies.

In the future other activities such as intensified alteration of wetlands and estuaries, oil development in the Baltimore Canyon, and possible construction of off-shore nuclear power plants may magnify the impacts on mid-Atlantic fish.

The atlas is divided into six volumes based on the evolutionary development of 92 families containing 321 species. The volumes are divided as follows: Volume I--Sturgeons through freshwater catfishes; Volume II--Freshwater eels through pipefishes and seahorses; Volume III--Pirate perches through cobias; Volume IV--Jacks and pompanos through spadefishes; Volume V--Butterflyfishes through cusk-eels; and Volume VI--Butterfishes through batfishes.

Field biologists, researchers, taxonomists, and instructors in biological science will find the atlas a valuable source of basic information about fishes in this region. The atlas also includes keys useful in identification of fish species.

The atlas was prepared by the Chesapeake Biological Laboratory of the Center for Environmental and Estuarine Studies, University of Maryland, under contract with the U.S. Fish and Wildlife Service's National Power Plant Team.

The team is a part of the Service's Biological Services Program. It provides the program's scientific and technical expertise regarding the impacts of power plants and energy development on fish and wildlife resources and arranges for contract studies with States, universities, and consulting firms.

"Development of Fishes of the Mid-Atlantic Bight--An Atlas of Egg, Larval and Juvenile States" is available as a set for \$62.25 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (specify stock numbers of all volumes), or individually at the following prices: Volume I, \$10.25 (stock number 024-010-00444-4); Volume II, \$11.25 (stock number 024-010-00445-2); Volume III, \$10.50 (stock number 024-010-00446-1); Volume IV, \$9.50 (stock number 024-010-00447-9); Volume V, \$10.00 (stock number 024-010-00448-7); Volume VI, \$10.75 (stock number 024-010-00449-5).

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