

DELINEATION OF KING MACKEREL (Scomberomorus cavalla) STOCKS ALONG  
THE U.S. EAST COAST AND IN THE GULF OF MEXICO

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King mackerel are widely distributed along the U.S. south Atlantic coast and in the Gulf of Mexico where they support both recreational and mixed-gear commercial fisheries. Because catches are landed within the boundaries of eight states, two regional fishery management jurisdictions and Mexico, management of the fisheries is a problem of both regional and international concern. Regional Fishery Management Councils (FMC) currently recognize two migratory groups for management purposes, one along the southeast U.S. coast and one in the Gulf of Mexico, with overlapping ranges in southeast Florida. To manage these fisheries most effectively it is important to know the identity of any component stocks, and how fishing mortality is distributed among them.

Biochemical (starch-gel electrophoresis) and mark-recapture techniques are being used to evaluate the stock structure of king mackerel. Preliminary results suggest that at least two breeding groups may exist; a western Gulf of Mexico group, and a second group in the eastern Gulf of Mexico and along the Atlantic coast.

Biochemical genetic data provide the strongest evidence. Analysis of allelic frequencies of peptidase using glycl-L-leucine as substrate in king mackerel from ten locations from the Gulf of Mexico and Atlantic coast indicates that fish sampled in Texas and Campeche, Mexico are significantly different from other sampling locations. These data do not confirm or refute the existence of a separate Atlantic migratory group. May's (1983) results for an additional seven sampling locations in the same geographic area are concordant.

Historical mark-recapture studies in the Gulf of Mexico have shown movement from south Florida in winter to the northwestern and western Gulf in summer, as well as the reverse. However, our mark-recapture data on large king mackerel tagged in winter off Louisiana suggest that these fish may comprise a different group from fish that have migrated between the western and northwestern Gulf and south Florida. Of 1,513 fish tagged and released off Grand Isle, LA, in the winters of 1983, 1984, and

1985, 31 have been recaptured, all in the western Gulf of Mexico (Louisiana, Texas, and Mexico). Thus, if two groups exist, as our results suggest, mixing of the two groups may be occurring in the western and northwestern Gulf of Mexico in summer.

Biochemical (starch-gel and isoelectric focusing electrophoresis), mark-recapture and morphological studies designed to define king mackerel stocks more precisely are continuing at the National Marine Fisheries Service Laboratory in Panama City, Florida.

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**PROCEEDINGS OF THE  
STOCK IDENTIFICATION  
WORKSHOP**

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