

STOCK RECOVERY PROGRAM FOR THE SPANISH MACKEREL IN THE SETO INLAND SEA

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Catches of the Spanish mackerel in the Seto Inland Sea increased since the late 1970's and reached a maximum of 6,255 MT in 1986, then decreased sharply and were only 196 MT in 1998. The major fishing gear is the drift net which accounts for more than half of the catch. The efficiency of the gear was improved after 1968 when net haulers were introduced. Furthermore, the introduction in 1985 of tegusu (nylon mono-filament) a more durable net material allowed the drift nets with a smaller mesh size to be used and since the 1980's sagoshi (0 year and 1 year old fishes) have been quantitatively exploited in the autumn season. Moreover, purse-seiners were re-introduced to the fishery in Harima-Nada after a long period of cessation and have ranked second or third in catch since 1986. In the Spanish mackerel fishery, the number of fishing boats, size of nets, fishing season were regulated. However, these regulations were not effective to prevent the increase of fishing power of individual fishing boats, resulting in a decrease of the Spanish mackerel stock. The fishermen have conducted the fishery management of the Spanish mackerel on their own free will since 1998 in Harima-Nada, i.e., the fishermen ceased to operate in the autumn fishing season in Kagawa and Okayama prefectures, and shortened the autumn fishing season in Hyogo Prefecture. Taking this opportunity, all prefectural governments have cooperated for the stock recovery program for the Spanish mackerel since 2002 in the Seto Inland Sea under the guidance of the central government. In this program, the goal for recovery was set as the stock level around 1990, i.e., one third (5,800 MT) of the maximum in 1986. Therefore, the anchovy is a major food item for juvenile Spanish mackerel, and the stock biomass reduced in the early 1990's to one third level of the maximum in 1985. Time closure in the autumn fishing season or shortening the spring fishing season were conducted by gear and by area, and enlargement of the mesh size of drift nets was done. Artificially produced juveniles of Spanish mackerel have been released since 2000. The annual catches increased to 700 Mt in 2002, about 3.5 times of the minimum in 1998. This suggests that a recovering trend of the Spanish mackerel stock is happening from various indices, though the stock level is still low.