CENTRAL MARINE FISHERIES
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R & D SERIES FOR MARINE FISHERY RESOURCES MANAGEMENT

# 11. THE SEERFISH RESOURCES

The seerfishes are inshore pelagic fishes, distributed mainly in areas within 60 m depth contour. The mean annual seerfish catch of 17,852 t for 1964–81 was accounted for almost equally by the east coast (49.66%) and the west coast (50.34%). While the bulk of the east coast catch came from Tamilnadu (47.91%) and Andhra Pradesh (40.34%), the States of Kerala (35.48%), Maharashtra (23.44%) and Gujarat (23.14%) contributed the bulk to the west coast. The progressively increasing trend from 1964 to 1981 owes to the increasing number of mechanised gillnetters operating for the larger catch including the seerfishes.

## Species composition

The all-India catch of 27,557 t in 1981 was comprised of 50.05% king seer *(Scomberomorus commerson)*, 48.94% spotted seer *(S. guttatus)* and 1.01% streaked seer *(S. lineolatus)*. While the king seer was slightly more dominant (56.28%) than the spotted seer (43.30%) along the east coast, it was somewhat less dominant (44.6%) than the spotted seer (53.9%) along the west coast; the streaked seer was less abundant along the east coast (0.42%) than along the west coast (1.5%). In contrast, the king seer was significantly dominant over the spotted seer along both the east (62.5%) and west (65.6%) coasts during 1964–81 when the national average was 64.05% king seer, 33.30% spotted seer and 2.65% streaked seer. The 1981 observations show that the king seer is predominant (90.22%) along the south-eastern region (Tamilnadu Coast) where the spotted seer forms just 9.48%. The spotted seer is predominant in the mid-eastern region - 69.27% in the Andhra Coast and 95.43% in the Orissa Coast. In the northeasten region (West Bengal) the king seer is again dominant (94.95%) although earlier observations

in 1967 showed the spotted seer to be the dominance species in the Sundarban area. The regions of spotted seer dominance are generally characterised by low surface salinity conditions created by the river discharges from the major river systems of Krishna, Godavari, Mahanadhi and Ganges.

In general, there is good agreement in species composition between the east and west coasts for similar latitudes. The king seer is predominant along the south-western region from Cape Comorin to Cochin (96 to 100%). However, for the Kerala Coast as a whole, the spotted seer is slightly dominant (52.37%) over the king seer (47.45%), apparently because of the low sea surface salinities arising from the monsoon runoff and the extensive backwaters along central and northern Kerala. Both the species occur in almost equal abundance in the Laccadive Sea. Along the mid-western region comprising the Karnataka, Goa and Maharashtra Coasts where there is no backwater system, the spotted seer is much less abundant (26 to 39%) than the king seer (55 to 70%). Along the northwestern region (Gujarat) the spotted seer is dominant (72.6%) over the king seer (27.4%) evidently because of the effect of the river Indus discharges into the contiguous Pakistan Coast.

**Indices of abundances**

The 1964–81 average seerfish catch per one drift gillnet boat day (bd) for the east coast (14.9 kg) was somewhat less than that for the west coast (20.5 kg); the all-India average was 17.3 kg. For the east coast, the catch per bd was the highest for Andhra Pradesh (26.5 kg), followed by Tamilnadu (11.9 kg), Orissa (10.2 kg) and West Bengal (6.5 kg). Among the various west coast sections, the catch per bd was the highest for Maharashtra and Gujarat (41.3 kg each), followed by Karnataka and Goa (31.9 kg each), Kerala (11.76 kg) and the Kanyakumari District (10.1 kg).

The 1964–81 average annual seerfish catch per one km long coastline for the east coast (3,345 kg) was higher than that for the west coast (2,970 kg) the all-India average was 2,970 kg. Among the east coast states, the average annual catch per km long coastline was much higher for Tamilnadu (4,247 kg) and Andhra Pradesh (3,687 kg) than for West Bengal–Orissa (1,428 kg). Along the west coast the catch per coastline showed a generally northward decline with 5,315 kg for Kerala including the Kanyakumari District coast, 4,770 kg for Karnataka, 2491 kg for Goa, 2926 kg for Maharashtra and 1,253 kg for Gujarat.

**Seasonal variations**

Seasonal variations along the east coast are not as marked as along the west coast as may be seen from the distribution of the

annual catch in the ratios of 29%, 18%, 23% and 30% for the first, second, third and fourth quarters respectively for the former and 24%, 7%, 9% and 60% for the successive annual quarters from the first to the fourth respectively for the latter. The relatively low seasonality evident for the east coast is attributable to the prevalence of one or other favourable factor in each of the annual quarters. Calm weather in the first and third quarters ensures good catches of both the spotted seer and the king seer. Large individuals of the king seer spawners which disappear from the fishing grounds into strictly inshore bays and comes for spawning during the second quarter, and thereby causing a slump in the catch, re-enter the fishing grounds towards the end of the third quarter as noticed in the Gulf of Mannar and the Coramandal Coast. Low surface salinities arising from the northeast monsoon rains and runoff in the fourth and first quarters and the southwest monsoon runoff in the second and third quarters are favourable to the spotted seer, particularly from the Lawson's Bay northwards to Bangladesh. In the Lawson's Bay, the king seer is abundant in the first and second quarters of relatively higher surface salinities.

Along the west coast, the seerfish catch increases phenomenally in the last quarter concurrent with the northerly flow of the coastal current, but declines progressively towards the third quarter with the reversal of the coastal current. The uniformly high abundance of seerfishes along the entire west coast in the last annual quarter and the progressive increase in the annual instantaneous mortality of the stocks from the minimum off Cape Comorin to the maximum for the Gujarat Coast indicate that at least the king seer stock originates in grounds around Cape Comorin and spread therefrom northwards. The area close to Point Pedro in Sri Lanka has been fund to be another centre of seerfish spread in the Pedro Bank and Palk Strait regions.

**Development prospects**

Between the east and west coasts, the east coast (particularly, the southeast coast) is more intensively exploited for its seerfish resources. The relatively high yield per km long coastline also suggests the fishing intensity to be generally high for the east coast. Judging from the catch per drift gillnet boat day values, the Andhra Pradesh on the east and the Goa to Gujarat Coast on the west seem to have much higher prospects for seerfish fisheries. In spite of the high catch per boat day values, the fact that the catch per km long coastline also is very high for both the Andhra and the Goa to Gujarat regions, confirms much higher prospects for development in these regions. The current production gap relative to the revised estimates of potential yield suggests the northeast coast comprising Orissa and West Bengal also to be an area of high enough prospects. Multiple trolling from sail or mechanised boats, using artificial jigs (as has been

demonstrated by the CIFT to be a very successful method off Cochin and Goa) for the king seer is one of the measures that could be introduced on a commercial scale in these regions for enhancing the production, particularly in the fourth quarter in the Goa to Gujarat Coast and the first and second quarters along the Andhra Coast as well as the Orissa and West Bengal Coasts.

The all-India maximum sustainable yield (MSY) of 15,958 t, estimated from the 1958–'67 catch and effort data, is attainable at an annual effort of about 2.2 million drift gillnet boat days. However, the fact that the 1964–'81 average annual catch (17,852 t) which has exceeded the MSY (by 1,894 tons) has been attained at a much less effort (1,034,193 bd) and that the current annual yield is about double the MSY certainly indicate the 1956–67 annual MSY estimate to be unrealistic. A more recent estimate which is 40,000t including 5000t for the NW coast (Maharashtra and Gujarat), 10,000 t each for the SW (Goa, Karnataka and Kerala) and NE coasts (Orissa and West Bengal) and 15,000 t for the SE coast (Tamilnadu and Andhra) seems rather realistic. However, the NW coast has already attained its estimated MSY in 1972–76 and far exceeded it in 1977–81 when the average annual catch was 7,000 t suggesting that the potential is around 7,000 t or even more, perhaps in the order of about 10,000 t. The current production gap relative to the recent MSY estimates, is about 5,000 t each for the southwest and the southeast coasts and 8,000 t for the northeast coast.

While the drift gillnets of smaller mesh types (64 to 80 mm) land the spotted seer and one year old king seer predominantly, the larger mesh types and older and much larger king seer (>2 year old; >750 mm total length, going up to 1,400 mm). The seerfishes, particularly the larger king seer, are one of the high grade table fishes in great demand all over the country, and fetch about Rs. 10 to 15 per kg in peak seasons and Rs. 15 to 30 per kg in lean seasons, depending on whether the retail market is the smaller towns (low price in the above range) or the metropolitan cities (high price in the above range). Some times, there is, however, no relation between the retail price and the location of the market, the village and small town markets fetching much higher prices (even exceeding that of chicken or mutton) than the city markets owing mainly to the flow of fish from various landing centres into the cities. Such attractive prices provide the necessary incentive for augmenting the production and reducing the production gaps before the turn of the present decade. Once the catches attain the level of the MSY (about 45,000 t) the fishing effort should be maintained at the optimum level (about 2 million drift gillnet boat days per year) in order to sustain the yield at the maximum possible level without depleting the stocks.

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The conclusions/recommendations made in this series are subject to revision with addition of further information on the resource.

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