

The State of the Marine Environment

The Directorate Resource Management of the Ministry of Fisheries and Marine Resources publishes quarterly stock reports to provide up to date information on the state of the marine environment and the status of the major stocks. It is a synopsis of information, rather than a comprehensive account. This article will only deal with the information species which were not covered extensively elsewhere in this edition of *Namibia Brief*.

Pilchard

Since the start of the 1997 pelagic season around 2 000 tons of pilchard were landed as bycatch to the pelagic horse mackerel fishery.

During the second half of February 1997 the proportion of pilchard mixed with juvenile horse mackerel increased. In order to prevent high bycatches of pilchard the industry decided to return all fishing vessels to port until the horse mackerel and pilchard had separated.

A hydroacoustic survey in Namibian waters in November 1996 indicated pilchard in the north between Dune Point (20°S) and the Kunene River. The total biomass of adult fish was estimated to be about 10 000 tons, while about 100 000 tons of juvenile fish were found. These juveniles had a modal peak at 15,5 cm and would have been spawned during the summer of 1995/96. The survey was not extended into southern Angola, but reports from fishing vessels indicated that few pilchards occurred in this region at that time.

Another acoustic survey in March 1997, to determine how many of the juvenile cohort of the previous had recruited to the fishable biomass, found few adult fish near Swakopmund. Most of the younger fish occurred farther north, between Palgrave Point (20°30'S) and the Kunene River. While the total number of fish was estimated to have decreased by about 25%, these fish had grown in length by about 4,5 cm. The total biomass was estimated to have increased to around 200 000 tons. The estimated biomass of adult fish remained less than 10 000 tons.

Environmental conditions seemed to have been excellent for pilchard spawning and the survival and growth of the eggs and larvae in the summer of 1995/96. Despite the small spawning stock biomass, a relatively strong cohort was produced. Growth and survival rates have been high and this cohort was reaching maturity at the time of printing *Namibia Brief*.

Cape horse mackerel

The 1996 total allowable catch of 90 000 tons for the pelagic fishing industry was landed by the end of June 1996. Catches of 40 000 tons were landed within the first four weeks of the 1997 fishing season which started in the first week of January 1997. The total TAC of 80 000 tons was landed by the third week of February 1997 after which a further 10 000 tons was granted to the fishery. The good season experienced by the pelagic fishing industry confirmed that the above average recruitment recorded by the research vessel *Dr Fridtjof Nansen* in June had become available to the fishing fleet.

Midwater landings in 1996 totalled 229 000 tons compared to 257 000 tons in 1995. The dominant size class in 1996 was 18 to 24 cm with a mean length of 22,3 cm. The systematic decrease in size of midwater horse mackerel landed over the past few years could be because larger fish had migrated out of the area, or had been removed by fishing. Recent midwater catches reveal that, on average, larger horse mackerel are being landed compared to last year. This increase in size can be ascribed partly to growth, but it is also assumed to be due to the return of horse mackerel to the fishing grounds in the central and northern part of the Namibian EEZ. The current good condition (increase in oil content and mean weight) and the availability of large horse mackerel indicates that the state of the adult horse mackerel stock has not declined to the extent previously assumed.

The acoustic data of the demersal hake survey by the *Dr Fridtjof Nansen* during January/February 1997 were used to estimate the biomass and distribution of the horse mackerel. The results indicate an increase in the offshore horse mackerel biomass.

Tuna

The 1996/1997 tuna-fishing season started in December only, due to the low number of fish in November. The fishing season has continued to be poor, with only 220 tons of fish landed in January and February 1997, compared to 375 and 465 tons for the same time in 1996 and 1995 respectively.

Since the fishing season traditionally only lasts until April, it is highly unlikely that the total catch will reach the levels of previous years.

In March albacore off Lüderitz ranged from 56 to 106 cm in size, with a mean length of 71 cm and an average weight of 7 kg. This is considerably less than the mean size of 85 cm and weight of 12 kg during the previous fishing season.

The decline in albacore catches and size is probably an indication of overfishing. As albacore migrate across the southern oceans, and are harvested by many nations, the decline in availability to Namibian vessels is unlikely to be due solely to local fishing practices or environmental conditions.

