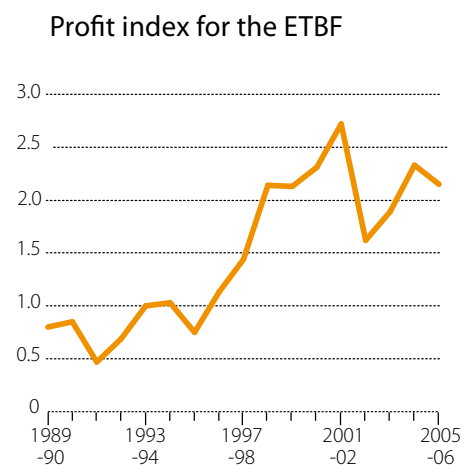
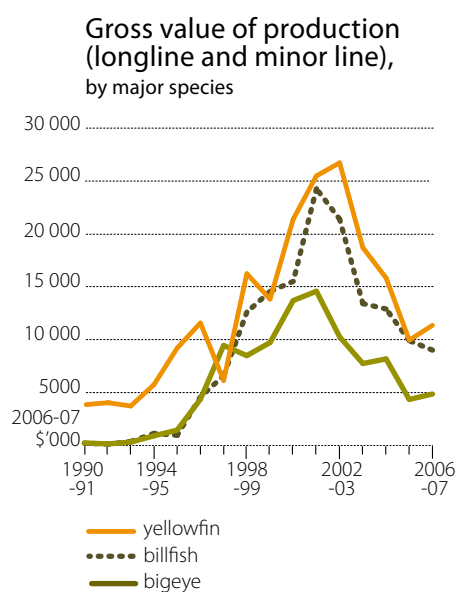


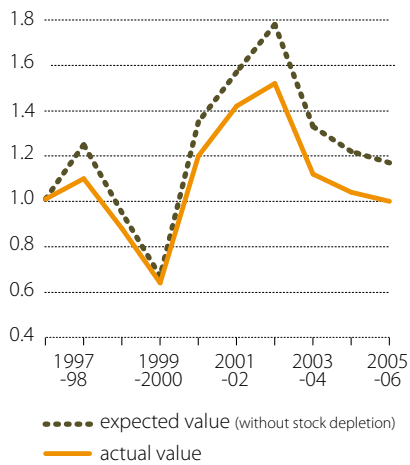
# Analysis of productivity and the impacts of swordfish stock depletion in the eastern tuna and billfish fishery

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- The eastern tuna and billfish fishery (ETBF) has expanded substantially since the early 1990s. For example, over the period 1989-90 to 2002-03, landings in the fishery increased more than tenfold, with comparable increases in the gross value of production and the capital stock employed in the fishery. However, since 2002-03 the catch of the major species (especially swordfish) has been decreasing, causing a significant fall in the gross value of production.
- Using a data set from ABARE surveys, AFMA logbook data and CSIRO, this report provides a productivity analysis for the fishery over the period 1989-90 to 2005-06. The analysis of vessel productivity in the fishery is undertaken using individual firm level data and employing a profit decomposition analysis. This approach enables the linkages to be explored between profit and productivity, the prices of outputs and inputs, vessel capital and fish stocks.
- The results of the profit decomposition indicate profits in the fishery improved as a result of increases in productivity and higher relative output prices. However, reductions in stock abundance have had a negative effect on profits. In addition, substantial increases in the capital employed in the fishery over time have resulted in the fishery becoming over-capitalised and exhibiting many of the characteristics of an open access (unregulated) fishery.



### Impacts of swordfish depletion on average net income index per vessel



- In recent years, profits have recovered somewhat as productivity has improved and the contribution of boat capital and output prices to profit has increased. In this regard, the recent increase in productivity can partly be explained by a number of high cost vessels leaving the fishery. The number of boats operating in the fishery decreased from 150 in 2002-03 to 92 in 2005-06. It is likely that the least productive vessels exited, leaving on average higher efficiency vessels operating in the fishery.
- Swordfish catches and catch per unit of effort have declined substantially in recent years. These declines are a concern to both fishers and managers and have raised doubts as to whether current catches are sustainable. In this report, it is estimated swordfish stock depletion has reduced average catch per boat by around 15 per cent a year and profit by about 14 per cent a year. Swordfish stock depletion is estimated to have reduced net income across the fishery by \$5.1 million a year, on average.