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## **Black bream in the Blackwood: 2005-06 recreational fishing creel survey**

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The status of the recreational fishery in the Blackwood Estuary, south-western Australia, was quantitatively assessed via a boat-based creel survey from September 2005 to August 2006. Sampling was stratified by both season and day-type and, in total, was conducted on 144 days over the 12-month period. Daily sampling consisted of a count of number of anglers throughout the estuary (for fishing effort), and surveys of catches by boat-based and shore-based recreational anglers.

In total, interviews were completed with 1 212 angling parties. The retained catch of 2 631 fishes comprising 17 species was dominated by yellow fin whiting (47%) and Australian herring (17%). Although black bream only constituted 6% of the catch it was the most frequently targeted species (27%). Only 41% of the boat-based angling parties and 37% of the shore-based angling parties surveyed had retained fish at the time of interview. Nevertheless, compliance with minimum legal length regulations was found to be an issue, particularly for Australian salmon and King George whiting.

Fishing effort was greatest during summer and over the Easter period, when there were influxes of tourists to the region. More anglers were recorded on weekends and public holidays than weekdays in every month of the year except for December and January. Fishing from boats was recorded throughout the estuary, while shore angling was mainly concentrated in accessible locations near Augusta.

The overall catch rate was 0.835 ( $\pm 0.044$ ) fish retained/ angler/ h. Mean catch rate for black bream was 0.032 fish retained / angler/ h but for those specifically targeting black bream it was higher at 0.092 fish retained/ angler/ h. Total annual fishing effort was estimated to be 71 565 angling hours and total harvest was calculated to be 61 311 fishes. Approximately 8 tonnes of fish was harvested from the Blackwood Estuary by recreational anglers over the survey period, of which 1.26 tonnes was black bream.

Comparison with a similar 12-month creel survey conducted in the Blackwood Estuary in 1974-75 (Caputi 1976) showed some major differences. Catches were much lower in 2005-06, with the total estimated harvest (number of fish) less than a quarter of the previous study. Black bream dropped from the third most abundant species in the catch in 1974-1975 to sixth in 2005-2006. Although total annual fishing effort in the two surveys was remarkably similar, there was more shore-based effort in 2005-2006. The overall catch rate for 1974-75 was almost five times greater than the overall catch rate recorded in 2005-06.

Although coastal fish stocks in Western Australia are known to exhibit inter-annual variations in abundance, and effects of fishing in estuarine areas are difficult to distinguish from human-induced changes to the environment, the marked decline in the recreational catch and catch rates in the Blackwood Estuary over the past three decades is cause for serious concern.