



Illustration © R. Swainston/anima.net.au

## Information sheet **Yellowfin whiting** (*Sillago schombergkii*)

### Distribution

Yellowfin whiting (also known as western sand whiting) are endemic to south-western Australia from Western Australia (Onslow) to South Australia (Gulf St Vincent). WA and SA host separate breeding stocks.

### Stock structure and movement

In WA, populations within the Gascoyne Coast Bioregion and West Coast Bioregion are believed to have limited connectivity and so are regarded as separate stocks.

In the West Coast Bioregion, some fish live in estuaries for much the year, but these fish migrate to sea to join their ocean-dwelling counterparts to spawn in late spring/early summer. Hence, fish across the West Coast Bioregion belong to the same breeding stock (e.g. fish caught in the Peel-Harvey Estuary are part of the same population as those in Geographe Bay or Jurien Bay).

While in ocean waters, adults are not known to undertake any significant along-shore migrations, but their eggs and larvae can potentially be dispersed by ocean currents over many kilometres before recruiting to a nursery site.

### Habitat

Adults and juveniles form schools over sandy habitats in shallow (<5 m) inshore waters and estuaries. The species is tolerant of a wide range of salinities, ranging from 20 to 50.

### Diet

Benthic invertebrates (polychaete worms, crustaceans, bivalve molluscs).

### Identification

Adults have no distinguishing body markings and are best identified by their yellow ventral and anal fins and a weakly forked tail. Juveniles have faint black blotches on the body and may be confused with juvenile western trumpeter whiting.

### Growth

Can reach a maximum of 427 mm total length (TL) and 12 years of age. Females and males attain sexual maturity at 2 years, at 200 and 190 mm TL, respectively. Females grow slightly larger than males.

### Reproduction

Spawning typically occurs at water temperatures of 22-24 °C. Spawning occurs August-December in northern areas (e.g. Shark Bay) and December-February in southern areas (e.g. Perth). Spawning occurs over a longer period in northern areas because temperatures remain suitable over a longer period.

Individual females release multiple batches of eggs over the spawning period. Fecundity is regarded as 'indeterminate' because the number of eggs produced per year depends on the length of the spawning period.

Eggs and larvae are planktonic. After approximately one month in the plankton, the larvae metamorphose into tiny juveniles (~13 mm in length) and settle into a benthic habitat (usually a shallow sandy area).

## Fishery

Yellowfin whiting are caught by recreational fishers using line fishing (bait or lure) and commercial fishers using haul nets in estuaries and along ocean beaches, mainly in summer. In WA, the main commercial fishing areas are Shark Bay and the Peel-Harvey Estuary.

## Current research

Fishery catches were sampled over 2 years (2015 and 2016) to assess the status of yellowfin whiting in the West Coast Bioregion. The final results won't be available until mid-2017, but preliminary results suggest this population is in good condition. This study has also revealed why there has been a big increase in catches by both recreational and commercial fishers since 2012.

By examining the age structure of the population, this study has found that the number of juveniles spawned in summer 2010/11 was about four times

greater than expected. In 2010-2011, the West Coast Bioregion experienced an unprecedented ocean heatwave event, with temperatures up to 5°C higher than average. While the heatwave was harmful, even lethal, to some species, the warm temperatures provided highly favourable conditions for spawning by yellowfin whiting.

The 2010/11-spawned cohort recruited into the fishery around 2013, resulting in a rapid increase in catches. At the same time, these fish reached sexual maturity and spawned for the first time. Their offspring then recruited into the fishery, again boosting catches.

As this cycle of spawning and recruitment continues, the abundance of yellowfin whiting in the West Coast Bioregion is predicted to remain relatively high for the next few years, thanks to the effect of the heatwave. It's great news for both recreational and commercial fishers who can continue to enjoy above-average catches.

