



Fisheries science update – October 2021

West Coast Demersal Scalefish Resource

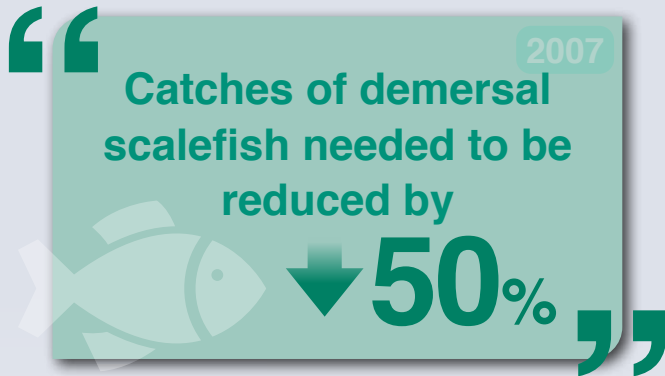


Key points: 2021 stock assessment outcomes

- The West Coast Demersal Scalefish Resource (WCDSR) is halfway into a 20-year recovery plan following a period of overfishing in the 1990s and 2000s.
- This latest assessment provides an important “health check” on the recovery status.
- The recovery plan is based on maintaining recreational (including charter) and commercial sector’s total fishing mortality below catch limits and protecting key spawning aggregations to recover the WCDSR by 2030.
- The Department of Primary Industries and Regional Development (DPIRD) tracks recovery progress by undertaking weight of evidence stock assessments of WCDSR indicator species dhufish and pink snapper every 3-5 years.
- The latest science shows that further management action is required to allow the WCDSR to recover by 2030.
- The current management arrangements have successfully halted the decline in spawning biomass of indicator species dhufish and pink snapper but there has been limited recovery of these species.
- Fishing pressure is still too high as there continues to be a lack of older dhufish and pink snapper in the population.
- This science update follows on from the previous WCDSR research update in December 2019. Detailed information on the latest stock assessment is available in *Fisheries Research Report No.316*.

Recovery background

In 2007, a stock assessment of WCDSR indicator species concluded that overfishing was occurring and stocks were at risk of collapse.



It also found that catches of demersal scalefish needed to be reduced by at least 50 per cent to allow stocks to recover within 20 years (Fisheries Research Report No.163). Following extensive community consultation, new management arrangements were introduced between 2007 and 2010 to reduce both sectors' catch by 50 per cent. Recreational and commercial fishers and their representative organisations (Recfishwest and the WA Fishing Industry Council) have played a key role in supporting these arrangements designed to help recover the WCDSR.

Current recovery plan

In 2020, DPIRD engaged a working group to develop a harvest strategy for the WCDSR. The working group membership included an independent chair, Recfishwest, the WA Fishing Industry Council, Marine Tourism WA (representing the charter industry), a commercial and recreational fisher and DPIRD staff. The draft Harvest Strategy was released for public consultation in January 2021. The Minister for Fisheries approved the final Harvest Strategy in June 2021 (Fisheries Management Paper No. 305).

The Harvest Strategy outlines agreed key milestones and control rules with predefined management strategies aimed at recovering the WCDSR by 2030 (Figure 1).

The two strategies in the harvest strategy to recover the WCDSR by 2030 include:

1. Maintain each sector's total fishing mortality (retained catch + post-release mortality) below recovery benchmarks; and
2. Provide targeted protection for key spawning aggregations.

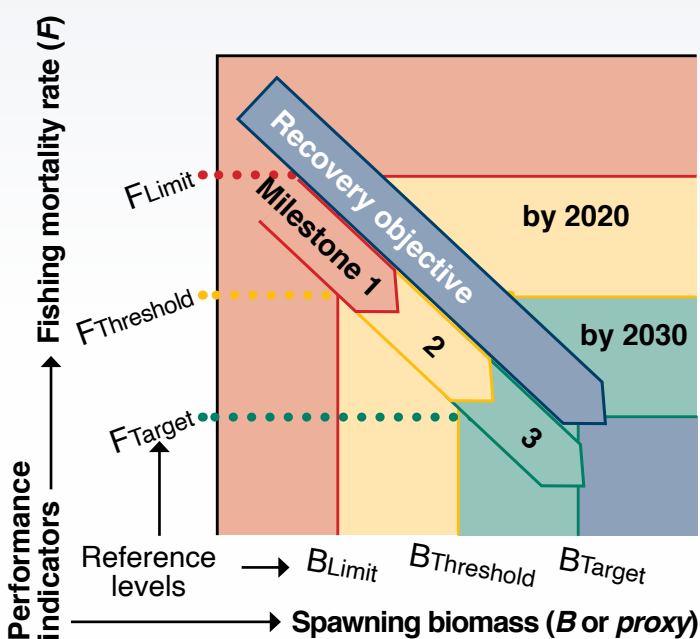
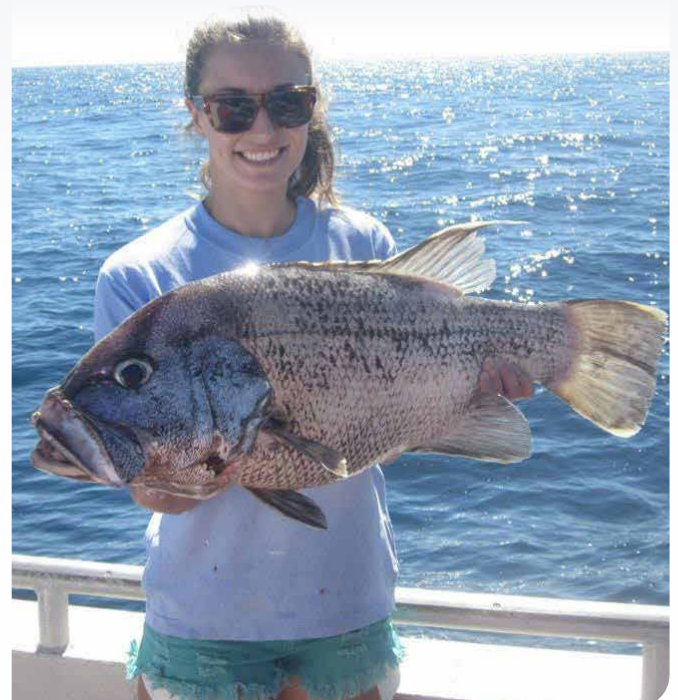


Figure 1. WCDSR recovery objective and recovery milestones using fishing mortality rate and spawning biomass of indicator species dhufish and pink snapper as performance indicators.



Taking stock of the recovery – latest science

DPIRD has undertaken three weight of evidence stock assessments of WCDSR indicator species since 2010.

Finfish weight of evidence stock assessments

Stock assessments of finfish species comprise a range of analyses to provide an understanding of the sustainability of stocks, which may include:

- measurement of commercial and recreational catches and catch trends;
- representative sampling of catches to derive biological information, e.g., age data, length data, spawning activity, length-at-maturity, etc;
- analysis of lengths and ages of fish in catches to evaluate trends in population characteristics and comparison of these with international standards; and

- construction of population models to evaluate trends in fishing pressure and biomass (relative abundance) of stocks and comparison of these with international standards.

In each assessment, all of these analyses are used to identify the current sustainability of stocks and the risk of future depletion (i.e., a weight of evidence approach whereby all the lines of available data (evidence) are evaluated). This is used to inform whether management action is required to ensure ongoing sustainability.

Latest WCDSR science outcomes

The figure below shows that the decline in spawning biomass in the 1990s and 2000s has been halted. While models indicate dhufish has recovered to above the limit reference point, the rate of recovery has slowed in recent years. There has been little improvement in pink snapper stock levels which have remained below the limit reference point since 2010.

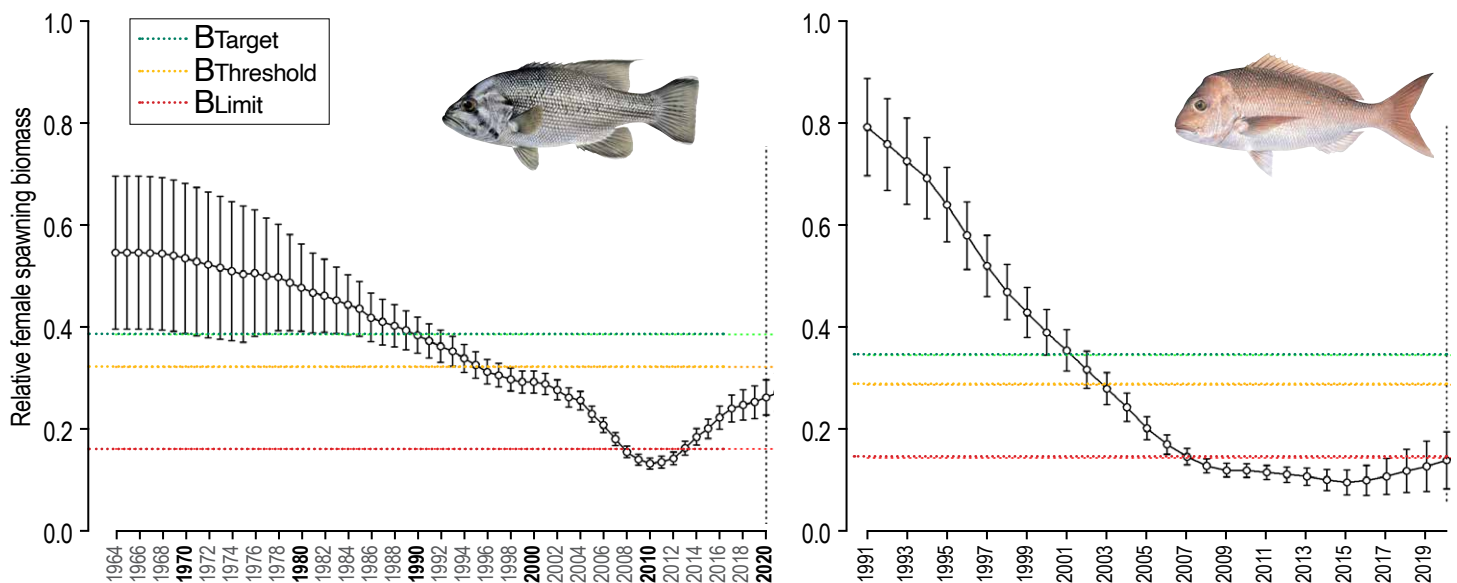


Figure 2. Model estimates for relative female spawning biomass ($\pm 60\%$ CI*) of dhufish (left) and pink snapper (right) at the stock level against Target, Threshold and Limit reference points.

*Confidence interval

The figure below shows dhufish and pink snapper mortality rates are still above their Limit reference points. Fishing mortality rates need to decline below the Threshold reference points to allow stocks to recover.

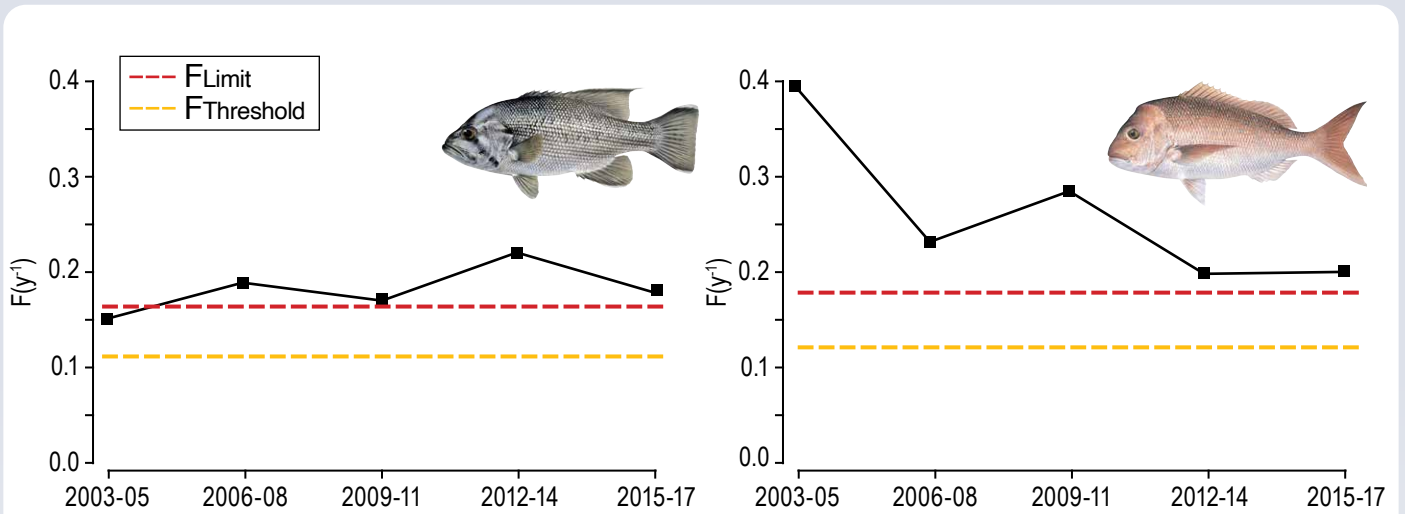


Figure 3. Estimates of fishing mortality per year for dhufish (left) and pink snapper (right) based on data from commercial and/or recreational catches in the West Coast Bioregion against Limit and Threshold reference points in the harvest strategy.

The age make-up of dhufish is dominated by young fish (less than 15 years old). The lack of older fish indicates the population has relatively few older breeding fish that are critical for replenishing the population.

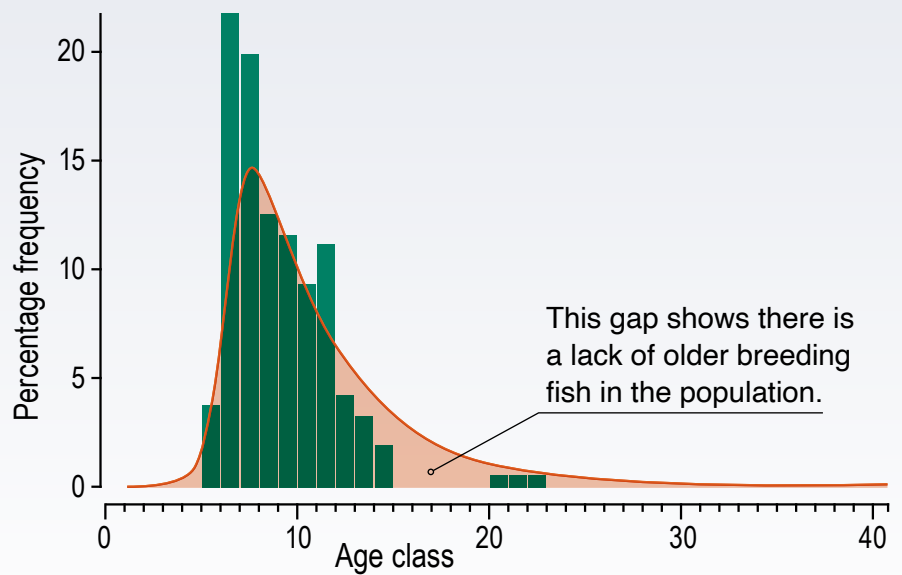


Figure 4. Comparison of the age make-up of WA dhufish in the Mid-West/Kalbarri areas in 2016/17 (green bars) compared to a recovered population (threshold levels; orange shading).



This figure shows dhufish total fishing mortality (retained catch + post-release mortality) generated from all fishing sectors has been at or below recovery benchmarks since 2010. Snapper total fishing mortality (retained catch + post-release mortality) generated by all fishing sectors has been below recovery benchmarks since additional management action was taken in 2014/15.

Despite combined catches being below the recovery benchmarks, stocks have not adequately recovered, indicating the initial reduction in catches were not enough.

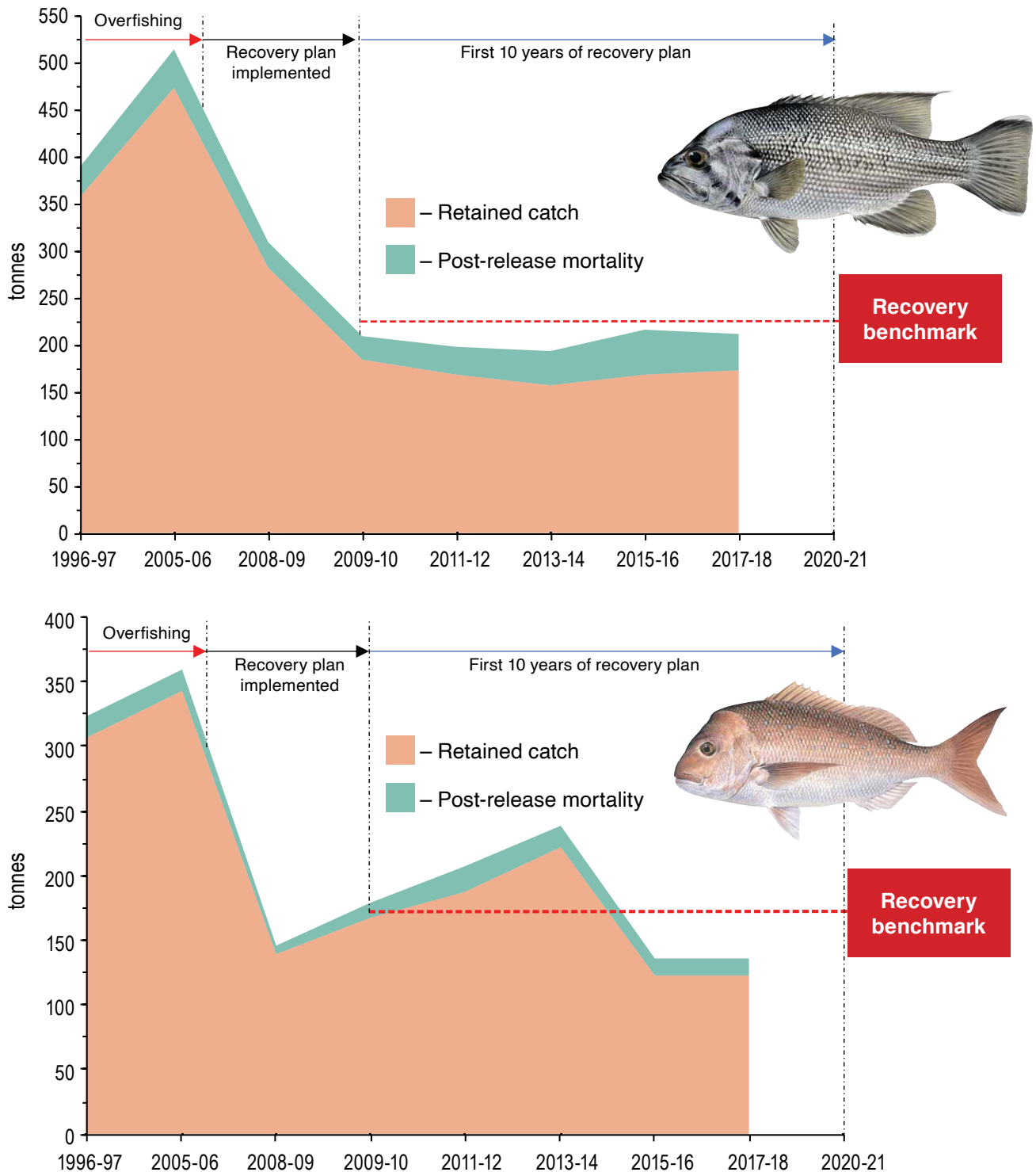


Figure 5. Combined estimates of dhufish and pink snapper retained catch and post-release mortality taken by recreational, charter and commercial fishers in the West Coast Bioregion against the combined recovery benchmark from the harvest strategy. Note: data includes only those years where recreational, charter and commercial catch estimates were all available.

So what next?

Further action is needed to recover the WCDSR by 2030.

A two-phase review process will be undertaken to determine the extent of action required and develop an appropriate management response.

In phase one, a stakeholder-based reference group comprising DPIRD, Recfishwest and WAFIC will review the latest science against the Harvest Strategy. The reference group will provide recommendations to the Minister for Fisheries on the application of Harvest Strategy control rules to recover the WCDSR by 2030.

In phase two, DPIRD will work with Recfishwest, Marine Tourism WA and the WA Fishing Industry Council to develop management options for recreational, charter and commercial fisheries to achieve the approved actions to recover the

WCDSR by 2030. These management options will be provided to the Minister for Fisheries for consideration and approval to release for public consultation in early 2022.

For more information, visit fish.wa.gov.au for comprehensive FAQs.

DPIRD acknowledges commercial, charter and recreational fishers for contributing catch and fishing information. Thank you also to commercial and recreational fishers, fishing clubs, commercial processors and businesses who contributed to the collection of biological data through the 'Send Us Your Skeletons' program. Find out more at fish.wa.gov.au/frames



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