



Australian Government

Australian Fisheries Management Authority

Small Pelagic Fishery (SPF)

Species summaries 2023

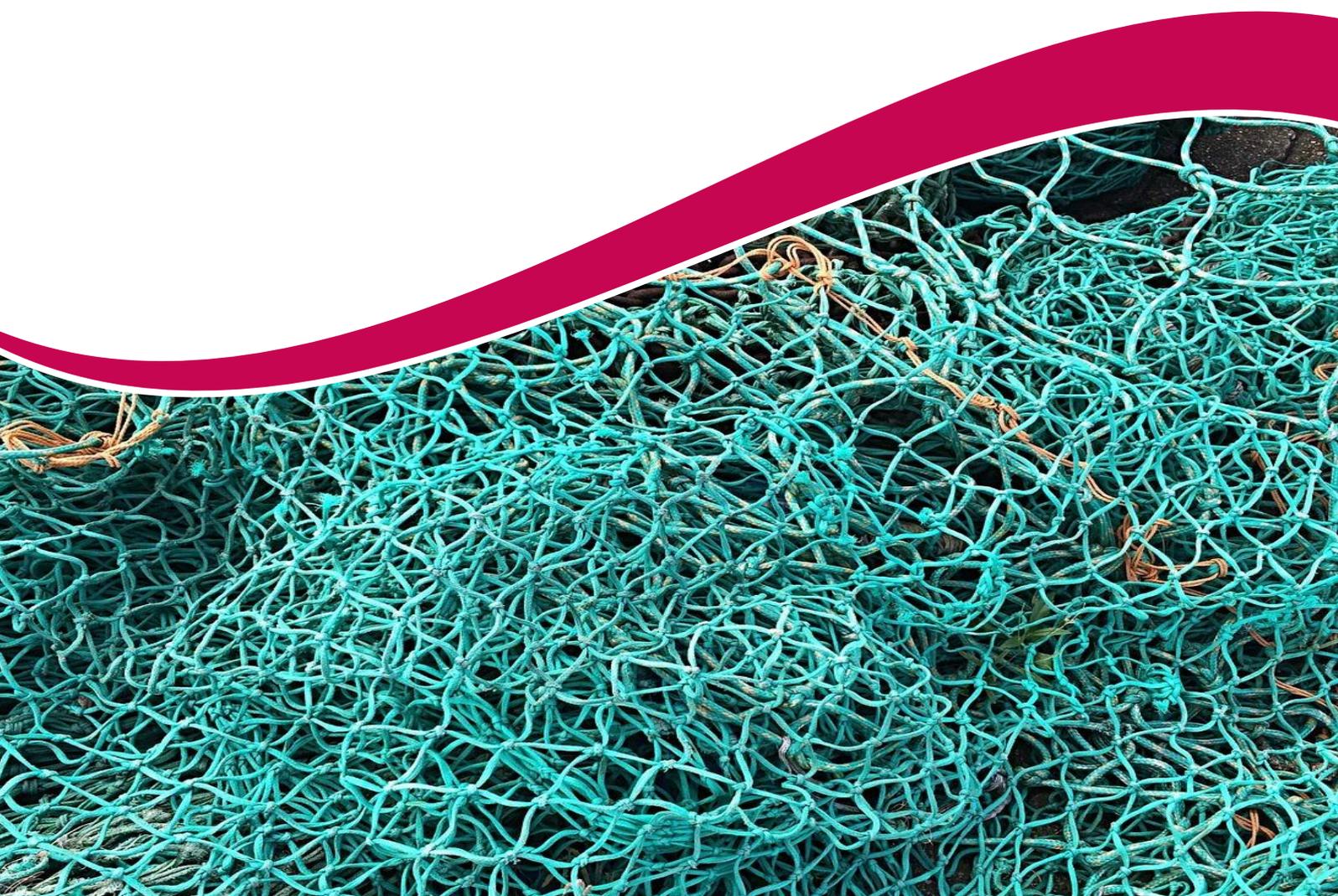
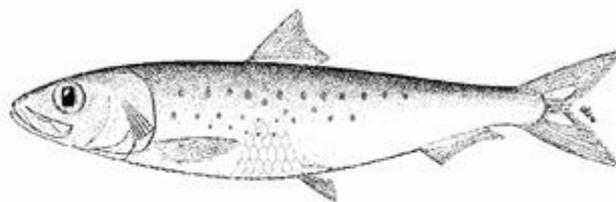


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Australian sardine



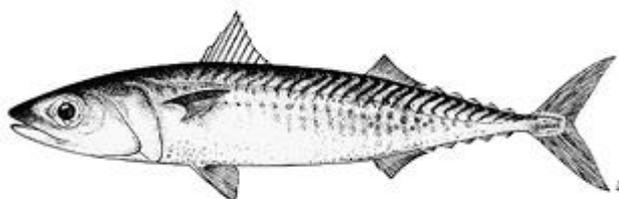
Sardinops sagax

Species Summary				
Common Names	Sardine, pilchard			
Stock assessment	A DEPM Survey was conducted in 2019-20 (Sep), the results of which were first considered for the 2021-22 SPF fishing season. Tier 1 – 3 rd season.			
Exploitation Rate * 2023-24 Tier Level	*Tier 1 – 20% (5 seasons)	Tier 2 – 10% (5 seasons)	Tier 3 – 5% (no limit)	
Estimated biomass	42,724 tonnes (2019-20 DEPM Survey) 49,575 tonnes (2015 DEPM Survey)			
Stock Structure	Several studies have found evidence of stock structuring of Australian sardine across temperate and sub-tropical Australia (Dixon, Worland & Chan 1993; Izzo, Gillanders & Ward 2012; Yardin et al. 1998); however, the boundaries were not defined conclusively. Izzo et al. (2017), using an integrated assessment that included genetic, morphological, otolith, growth, reproductive and fishery data, found evidence for at least four isolated stocks. The Status of Australian Fish Stocks Reports (https://www.fish.gov.au/) recognises four Australian stocks: South-western (Western Australia), Southern (South Australia), South-eastern (Victoria, Tasmania and southern NSW), and eastern Australia (southern Queensland to central NSW). Since the Sardine subarea (off eastern Australia) is the only area of the SPF where SPF vessels take Australian sardine, the sardine sub-area is assessed and managed as a single management unit.			
Historical Catch & TAC data (Commonwealth fisheries)				
Catch and TAC (t)	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught

* incomplete season	2022-23*	7,970	8,767	53 (<1%)
	2021-22	7,980	8,778	113 (<1%)
	2020-21	9,190	10,109	102 / (1%)
	2019-20	9,050	10,001	232 / (2%)
	2018-19	9,510	10,465	136 / (1%)
ABARES Status	Biomass: Not overfished		Fishing mortality: Not subject to overfishing	
Assessment Summary				
Key model technical assumptions/ parameters	The adult reproductive parameters used in the biomass calculation are based on the southern sardine stock, not the eastern stock. Ideally parameters are based on the stock being assessed however, sardine parameters are relatively consistent worldwide. As the Commonwealth catch is so low, addressing this knowledge gap is not a current research priority for the fishery. Furthermore, the exploitation rate of 20 per cent is conservative as shown by the MSE testing by Smith et al. (2015) and accounts for uncertainties in the assessment.			
Weekly CPUE Trends	The weekly CPUE is monitored for evidence of localised depletion. If a general decrease in CPUE occurs after consistent effort within a given grid cell, this may be evidence of localised depletion occurring. However, there are a number of factors, not just fishing effort, which can also influence CPUE. SPFRAG review this information annually. There were no discernible trends in the CPUE data.			
RAG Comments	The SPF sardine sub-area includes both the entire eastern stock and the northern part of the SE stock (i.e. southern NSW). This means that the management unit does not align directly with the biological stocks. Total NSW catches are used to set the TAC for Sardine sub-area. The annual assessment provided no basis to change previous advice for this stock which was that SPFRAG accepted the 2019-20 biomass estimate of 42,724 tonnes for Australian sardine and that it was appropriate to apply the Tier 1 exploitation rate for the 2023-24 season.			
Recommendations				
Recommended Biological Catch (RBC)	2023-24	3 rd Season at Tier 1 (2019-20 DEPM estimate) 42,724 x 20% = 8,454 tonnes		
Additional Work - AFMA				
State Catch (t)	484	Four-year weighted average, rounded to nearest tonne		
Discards (t)	0.04	Rate based on previous three years, by method and applied to the RBC to get tonnage. If one method is not expected to fish in upcoming year, the discard amount attributed to that method does not get deducted from the RBC.		

Other Commonwealth Fisheries Catch (t)	0.03	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	7,970 tonnes (rounded to the nearest 10 tonnes)			
SPFRAG Recommendations				
Commercial fishers' interests	No specific commercial fisher interests have been identified.			
Species specific management (target, companion and bycatch)	There are no identified implications for target, companion or bycatch species.			
SPF advice and any dissenting views	<p>2023-24 TAC recommendation 7,970 t - single-year TAC</p> <p>SPFRAG advice and any dissenting views Recommendations accepted by RAG members.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	7,970	
AFMA Advice				
AFMA Management recommends a TAC of 7,970 tonnes for the 2023-24 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2022-23 agreed TAC (t)	2023-24 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
7,980	7,970	10	2	-10

Blue mackerel east



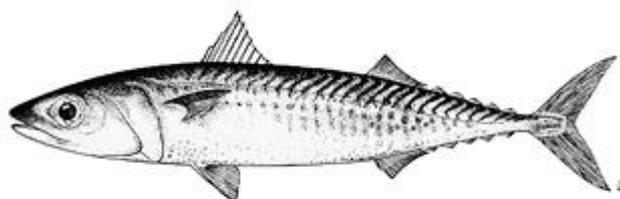
Scomber australasicus

Species Summary																																																															
Common Names	Pacific mackerel, common mackerel, English mackerel, school mackerel, spotted chub mackerel, spotted mackerel, chub mackerel, Japanese mackerel, southern mackerel, slimy mackerel, slimies																																																														
Stock assessment	A DEPM Survey was conducted in 2019-20 (Sep), the result of which were first considered for the 2021-22 SPF fishing season. Tier 1 – 3rd season.																																																														
Exploitation Rate * 2023-24 Tier Level	*Tier 1 - 15% (5 seasons)	Tier 2 – 7.5% (5 seasons)	Tier 3 – 3.75% (no limit)																																																												
Estimated biomass	80,000 tonnes (2019-20 DEPM Survey) 83,300 tonnes (2014 DEPM survey)																																																														
Stock Structure	The stock structure of blue mackerel is uncertain. Genetic analysis of samples from southern Queensland, Western Australia and New Zealand indicates population subdivisions. Genetic differences were detected between Western Australia and Queensland, and between Western Australia and New Zealand, but not between Queensland and New Zealand (Schmarr et al. 2012). No finer-scale analyses of blue mackerel have been undertaken to further define stock structure. Blue mackerel within the SPF is assessed and managed as separate stocks in the eastern and western subareas.																																																														
Historical Catch data (Commonwealth fisheries)	<table border="1"> <caption>Historical Catch and TAC Data (Estimated from Chart)</caption> <thead> <tr> <th>Year</th> <th>Catch (t)</th> <th>TAC (t)</th> </tr> </thead> <tbody> <tr><td>2003-04</td><td>~500</td><td>-</td></tr> <tr><td>2004-05</td><td>~200</td><td>-</td></tr> <tr><td>2005-06</td><td>~300</td><td>-</td></tr> <tr><td>2006-07</td><td>~400</td><td>-</td></tr> <tr><td>2007-08</td><td>~500</td><td>-</td></tr> <tr><td>2008-09</td><td>~600</td><td>-</td></tr> <tr><td>2009-10</td><td>~700</td><td>~3,000</td></tr> <tr><td>2010-11</td><td>~800</td><td>~3,000</td></tr> <tr><td>2011-12</td><td>~900</td><td>~2,500</td></tr> <tr><td>2012-13</td><td>~1,000</td><td>~2,500</td></tr> <tr><td>2013-14</td><td>~1,100</td><td>~2,500</td></tr> <tr><td>2014-15</td><td>~1,200</td><td>~2,500</td></tr> <tr><td>2015-16</td><td>~2,000</td><td>~2,500</td></tr> <tr><td>2016-17</td><td>~3,000</td><td>~2,500</td></tr> <tr><td>2017-18</td><td>~4,000</td><td>~12,000</td></tr> <tr><td>2018-19</td><td>~5,500</td><td>~12,000</td></tr> <tr><td>2019-20</td><td>~6,200</td><td>~12,000</td></tr> <tr><td>2020-21</td><td>~10,000</td><td>~12,000</td></tr> <tr><td>2021-22</td><td>~10,000</td><td>~12,000</td></tr> </tbody> </table>			Year	Catch (t)	TAC (t)	2003-04	~500	-	2004-05	~200	-	2005-06	~300	-	2006-07	~400	-	2007-08	~500	-	2008-09	~600	-	2009-10	~700	~3,000	2010-11	~800	~3,000	2011-12	~900	~2,500	2012-13	~1,000	~2,500	2013-14	~1,100	~2,500	2014-15	~1,200	~2,500	2015-16	~2,000	~2,500	2016-17	~3,000	~2,500	2017-18	~4,000	~12,000	2018-19	~5,500	~12,000	2019-20	~6,200	~12,000	2020-21	~10,000	~12,000	2021-22	~10,000	~12,000
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2016-17	~3,000	~2,500																																																													
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	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught																																																											

Catch and TAC (t) * incomplete season	2022-23*	11,450	12,595	5,272 (42%)
	2021-22	11,440	12,584	10,188/ (80%)
	2020-21	11,970	13,167	5,994 / (46%)
	2019-20	11,970	13,179	5,715 / (43%)
	2018-19	12,090	13,299	4,001 / (30%)
ABARES Status	Biomass: Not overfished		Fishing Mortality: Not subject to overfishing	
Annual Fishery Assessment Summary				
Key model technical assumptions/ parameters	Adult parameters used in the biomass calculation for the blue mackerel (east) stock are from blue mackerel samples collected from eastern stock during the 2019-20 DEPM survey. There has been some difficulties in catching large, adult spawning blue mackerel on the east coast. Resolving this knowledge gap before the next DEPM is undertaken is a high priority.			
Weekly CPUE Trends	The weekly CPUE is monitored for evidence of localised depletion. If a general decrease in CPUE occurs after consistent effort within a given grid cell, this may be evidence of localised depletion occurring. However, there are a number of factors, not just fishing effort, which can also influence CPUE. SPFRAG review this information annually. There were no discernible trends in the CPUE data.			
RAG Comments	SPFRAG noted the need for better estimates of adult parameters with research starting in 2022-23 as Stage 1 - Estimating the spawning fraction of Blue mackerel: Developing sampling methods and identify sampling locations. Stage 2 for the research Estimating the spawning fraction of Blue mackerel off eastern Australia: Spatio-temporal variability in spawning patterns and implications for future DEPM surveys, was submitted as a research priority for 2023-24. The annual assessment provided no basis to change previous advice for this stock which was that SPFRAG accepted the 2019-20 (Sep) biomass estimate of 80,000 tonnes for blue mackerel east and that it was appropriate to apply the Tier 1 exploitation rate for the 2023-24 season.			
Recommendations				
Recommended Biological Catch (RBC)	2023-24	3 rd Season at Tier 1 (2019-20 DEPM) 80,000 x 15% = 12,000 tonnes		
Additional Work - AFMA				
State Catch (t)	337	Four-year weighted average, rounded to nearest tonne		
Discards (t)	52	Rate based on previous three years, by method and applied to the RBC to get tonnage. If one method is not expected to fish in upcoming year, the discard amount attributed to that method does not get deducted from the RBC.		

Other Commonwealth Fishery Catch (t)	0.40	Three year average.		
Research Catch Allowance (t)	0			
Provisional TAC	11,600 tonnes (rounded to the nearest 10 tonnes)			
SPFRAG Recommendations				
Commercial fishers' interests	No specific commercial fisher interests have been identified.			
Species specific management (target, companion and bycatch)	There are no identified implications for target, companion or bycatch species.			
SPFRAG advice and any dissenting views	<p>2023-24 TAC recommendation 11,600 t - single-year TAC</p> <p>SPFRAG advice and any dissenting views Recommendations accepted by RAG members.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	11,600	
AFMA Advice				
AFMA Management recommends a TAC of 11,600 tonnes for the 2023-24 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2022-23 agreed TAC (t)	2023-24 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
11,450	11,600	10	2	+150

Blue mackerel west



Scomber australasicus

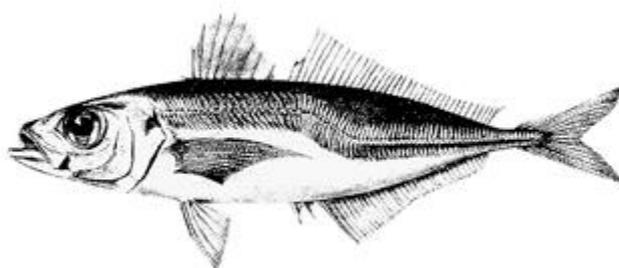
Species Summary																											
Common Names	Pacific mackerel, common mackerel, English mackerel, school mackerel, spotted chub mackerel, spotted mackerel, chub mackerel, Japanese mackerel, southern mackerel, slimy mackerel, slimies																										
Stock assessment	A DEPM Survey was conducted in 2005-06 (Feb Mar), the result of which were first considered for the 2006-07 SPF fishing season. Tier 3 – 7 th season.																										
Exploitation Rate * 2023 - 24 Tier Level	Tier 1 – 15% (5 seasons)	Tier 2 – 7.5% (5 seasons)	*Tier 3 - 3.75% (no time limit)																								
Estimated biomass	86,500 tonnes (2006 DEPM) 56,228 tonnes (2005 DEPM)																										
Stock Structure	The stock structure of blue mackerel is uncertain. Genetic analysis of samples from southern Queensland, Western Australia and New Zealand indicates population subdivisions. Genetic differences were detected between Western Australia and Queensland, and between Western Australia and New Zealand, but not between Queensland and New Zealand (Schmarr et al. 2012). No finer-scale analyses of blue mackerel have been undertaken to further define stock structure. Blue mackerel within the SPF is assessed and managed as separate stocks in the eastern and western subareas																										
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Year	Catch (t)	TAC (t)																									
2003-04	~200	~8,000																									
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2009-10	~2,200	~5,500																									
2012-13	~500	~6,500																									
2015-16	~1,000	~6,200																									
2018-19	~0	~3,200																									
2021-22	~0	~3,200																									
Catch and TAC (t)	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught																							

* incomplete season	2022-23*	3,240	3,563	n/a
	2021-22	3,210	3,534	n/a
	2020-21	3,210	3,534	n/a
	2019-20	3,240	3,563	12 / (n/a)
	2018-19	3,230	3,850	n/a
ABARES Status	Biomass: Not overfished		Fishing Mortality: Not subject to overfishing	
Annual Fisheries Assessment Summary				
Key model technical assumptions/ parameters	<p>The most recent DEPM surveys for the Blue mackerel was in 2005.</p> <p>The 2005 Survey gave a biomass estimate of 56,228 tonnes.</p> <p>A survey was completed in 2006 off Western Australia (out of Esperance) where almost all samples had eggs and larvae. SPFRAG agreed the biomass to be greater than that of the 2005 survey and agreed to an estimate of 86,500 tonnes.</p>			
Weekly CPUE Trends	<p>The weekly CPUE is monitored for evidence of localised depletion. If a general decrease in CPUE occurs after consistent effort within a given grid cell, this may be evidence of localised depletion occurring. However, there are a number of factors, not just fishing effort, which can also influence CPUE. SPFRAG review this information annually.</p> <p>There was no data to review trends in the CPUE.</p>			
RAG Comments	<p>There was no new data for this stock presented to SPFRAG at the December 2022 meeting given there had been limited fishing in the 2021-22 SPF season in the western sub-area.</p> <p>The annual assessment provided no basis to change previous advice for this stock which was that SPFRAG accepted the 2005/06 biomass estimate of 86,500 tonnes for blue mackerel west and that it was appropriate to apply the Tier 3 exploitation rate for the 2023-24 season.</p>			
Recommendations				
Recommended Biological Catch (RBC)	2023-24	<p>7th Season at Tier 3</p> <p>$86,500 \times 3.75\% = 3,244$ tonnes</p>		
Additional Work - AFMA				
State Catch (t)	0	Four-year weighted average, rounded to nearest tonne		
Discards (t)	0	Rate based on previous three years, by method and applied to the RBC to get tonnage. If one method is not expected to fish in upcoming year, the discard amount attributed to that method does not get deducted from the RBC.		

Other Commonwealth Fishery Catch (t)	0	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	3,240 tonnes (rounded to the nearest 10 tonnes)			
SPFRAG Recommendations				
Commercial fishers' interests	No specific commercial fisher interests have been identified.			
Species specific management (target, companion and bycatch)	There are no identified implications for target, companion or bycatch species.			
SPFRAG advice and any dissenting views	<p>2023-24 TAC recommendation 3,240 t - single-year TAC</p> <p>SPFRAG advice and any dissenting views Recommendations accepted by RAG members.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	3,240	
AFMA Advice				
AFMA Management recommends a TAC of 3,240 tonnes for the 2023-24 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2022-23 agreed TAC (t)	2023-24 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
3,240	3,240	10	2	0

Jack mackerel east

Trachurus declivis



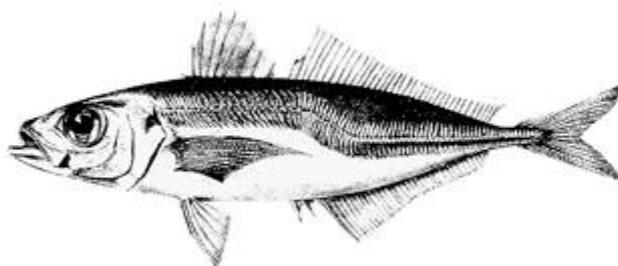
Species Summary			
Common Names	Cowanyoung, greenback horse mackerel, scaly mackerel, scad, common jack mackerel.		
Stock assessment	A DEPM Survey was conducted in 2018-19 (Jan), the result of which were first considered for the 2020-21 SPF fishing season. Tier 1 – 4th season.		
Exploitation Rate* 2023-24 Tier Level	*Tier 1 - 12% (5 Seasons)	Tier 2 – 6% (10 seasons)	Tier 3 – 3% (no limit)
Estimated biomass	156,292 tonnes (2019 biomass estimate) 157,800 tonnes (2014 biomass estimate)		
Stock Structure	The stock structure of jack mackerel is unclear. Richardson (1982) found evidence of population subdivision between Western Australia, including the Great Australia Bight, and eastern Australia. Richardson (1982) also found evidence of a Wahlund effect (where multiple populations are detected in a single sample) in east coast samples, suggesting some additional structuring. Similarly, Smolenski, Ovenden & White (1994) found evidence of structuring between New South Wales and south-eastern Tasmania, although the differences appeared not to be temporally consistent. A DEPM survey of western jack mackerel appeared to show some stock separation around the Bonney Coast west of Bass Strait (AFMA 2017d). Recent evidence from DEPM surveys showing that jack mackerel spawns throughout Bass Strait suggest that further investigation of stock structure is warranted. Currently, jack mackerel in the SPF is assessed and managed as separate stocks in the eastern and western subarea.		
Historical Catch data (Commonwealth fisheries)			

	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught
Catch and TAC (t) * incomplete season	2022-23*	18,620	20,482	2,778 / (14%)
	2021-22	18,630	20,493	7,452 / (36%)
	2020-21	18,580	20,453	5076 / (28%)
	2019-20	18,730	20,619	7,464 / (36%)
	2018-19	18,890	20,778	4,930 / (24%)
ABARES Status	Biomass: Not overfished		Fishing Mortality: Not subject to overfishing	
Annual Fisheries Assessment Summary				
Key model technical assumptions/ parameters	The DEPM and associated adult sampling provided robust estimates of key parameters for this stock.			
Weekly CPUE Trends	<p>The weekly CPUE is monitored for evidence of localised depletion. If a general decrease in CPUE occurs after consistent effort within a given grid cell, this may be evidence of localised depletion occurring. However, there are a number of factors, not just fishing effort, which can also influence CPUE. SPFRAG review this information annually.</p> <p>There were no discernible trends in the CPUE data.</p>			
RAG Comments	<p>The RAG saw no reason to be concerned over the status of this stock.</p> <p>The annual assessment provided no basis to change previous advice for this stock which was that SPFRAG accepted the 2018-19 (Jan) biomass estimate of 156,292 tonnes for jack mackerel east and that it was appropriate to apply the Tier 1 exploitation rate for the 2023-24 season.</p>			
Recommendations				
Recommended Biological Catch (RBC)	2023-24	4 th season at Tier 1 $156,292 \times 12\% = 18,755$ tonnes		
Additional Work - AFMA				
State Catch (t)	35	Four-year weighted average, rounded to nearest tonne		
Discards (t)		Rate based on previous three years, by method and applied to the RBC to get tonnage. If one method is not expected to fish in upcoming year, the discard amount attributed to that method does not get deducted from the RBC.		

Other Commonwealth Fishery Catch (t)	4	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	18,720 tonnes (rounded to the nearest 10 tonnes)			
SPFRAG Recommendations				
Commercial fishers' interests	No specific commercial fisher interests have been identified.			
Species specific management (target, companion and bycatch)	There are no identified implications for target, companion or bycatch species.			
SPFRAG advice and any dissenting views	<p>2023-24 TAC recommendation</p> <p>18,720 t - single-year TAC</p> <p>SPFRAG advice and any dissenting views</p> <p>Recommendations accepted by RAG members.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	18,720	
AFMA Advice				
AFMA Management recommends a TAC of 18,720 tonnes for the 2023-24 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2022-23 agreed TAC (t)	2023-24 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
18,620	18,720	10	2	+100

Jack mackerel west

Trachurus declivis



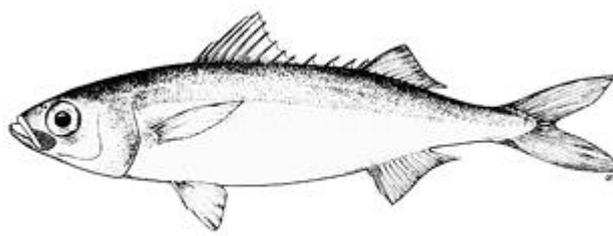
Species Summary				
Common Names	Cowyoung, greenback horse mackerel, scaly mackerel, scad, common jack mackerel.			
Stock assessment	A DEPM Survey was conducted in 2016-17(Dec-Feb), the result of which were first considered for the 2018-19 SPF fishing season. Tier 2 – 1 st Season.			
Exploitation Rate * 2023-24 Tier Level	Tier 1 - 12% (5 seasons)	*Tier 2 – 6% (10 seasons)	Tier 3 – 3% (no limit)	
Estimated biomass	35,000 tonnes (2017 DEPM Survey)			
Stock Structure	The stock structure of jack mackerel is unclear. Richardson (1982) found evidence of population subdivision between Western Australia, including the Great Australia Bight, and eastern Australia. However, DEPM surveys suggest that jack mackerel spawns throughout Bass Strait and that separation of eastern and western stocks may occur around the Bonney Coast (AFMA 2017c). Richardson (1982) also found evidence of a Wahlund effect (where multiple populations are detected in a single sample) in east coast samples, suggesting some additional structuring. Smolenski, Ovenden & White (1994) also found evidence of structuring between New South Wales and south-eastern Tasmania, although the differences were not temporally consistent. These studies suggest that further investigation of stock structure in jack mackerel is warranted. Currently, jack mackerel in the SPF is assessed and managed as separate stocks in the eastern and western subareas.			
Historical Catch data (Commonwealth fisheries)				
Catch and TAC (t)	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught

* incomplete season	2022-23*	4,190	4,609	0 / 0%
	2021-22	4,180	4,598	0 / 0%
	2020-21	4,170	4,590	0 / (0%)
	2019-20	4,200	4,619	14 / (0%)
	2018-19	4,190	4,282	0 / (0%)
ABARES Status	Biomass: Not overfished		Fishing Mortality: Not subject to overfishing	
Annual Fisheries Assessment Summary				
Key model technical assumptions/ parameters	Since only a limited number of adult samples were collected during the 2017 jack mackerel west DEPM survey, adult parameters obtained from the 2014 eastern jack mackerel survey were used to input into the biomass calculation for the western stock.			
Weekly CPUE Trends	<p>The weekly CPUE is monitored for evidence of localised depletion. If a general decrease in CPUE occurs after consistent effort within a given grid cell, this may be evidence of localised depletion occurring. However, there are a number of factors, not just fishing effort, which can also influence CPUE. SPFRAG review this information annually.</p> <p>There was no data to review trends in the CPUE.</p>			
RAG Comments	<p>There was no new data for this stock presented to SPFRAG at the December 2022 meeting given there had been limited fishing in the 2021 SPF season in the western sub-area.</p> <p>The annual assessment provided no basis to change previous advice for this stock which was that the DEPM survey for jack mackerel conducted in 2016-17 (Dec-Feb), provided a best estimate of biomass of 34,978 tonnes (which is the 31,069 plus the Bass Strait estimate) which was considered to be conservative given that the stock extends west of Kangaroo Island and a large amount of spawning activity was detected in Bass Strait which was not extensively sampled (and therefore the biomass estimate is an underestimate).</p> <p>Due to limited information on the stock structure of jack mackerel west, if catch in the grids south of Kangaroo Island (G54 and G55) reach 20 per cent of the TAC this area will be closed to fishing for the rest of the fishing year. Catch will continue to be restricted to 20 per cent of the TAC in these grids as a precautionary measure until more is known about the stock structure of jack mackerel west in this area. The RAG remains in support of this approach.</p>			
Recommendations				
Recommended Biological Catch (RBC)	2023-24	1 st Season at Tier 2 34,978 x 6% = 2,099 tonnes		
Additional Work - AFMA				
State Catch (t)	0	Four-year weighted average, rounded to nearest tonne		

Discards (t)	0	Rate based on previous three years, by method and applied to the RBC to get tonnage. If one method is not expected to fish in upcoming year, the discard amount attributed to that method does not get deducted from the RBC.		
Other Commonwealth Fishery Catch (t)	0	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	2,100 tonnes (rounded to the nearest 10 tonnes)			
SPFRAG Recommendations				
Commercial fishers' interests	No specific commercial fisher interests have been identified.			
Species specific management (target, companion and bycatch)	There are no identified implications for target, companion or bycatch species.			
SPFRAG advice and any dissenting views	<p>2023-24 TAC recommendation 2,100 t - single-year TAC</p> <p>SPFRAG advice and any dissenting views Recommendations accepted by RAG members.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	2,100	
AFMA Advice				
<p>AFMA Management recommends a TAC of 2,100 tonnes for the 2023-24 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.</p> <p>Consistent with SPFRAG's previous advice, the catch of jack mackerel west taken directly south of Kangaroo Island will continue to be restricted to 20 per cent of the TAC as a precautionary measure in response to some uncertainty regarding stock structure. AFMA Management will work with industry to achieve this and if necessary, implement a closure direction for that area. The most recent DEPM survey was carried out in 2016-17.</p>				
2022-23 agreed TAC (t)	2023-24 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
4,190	2,100	10	2	-2,090

Redbait east

Emmelichthys nitidus



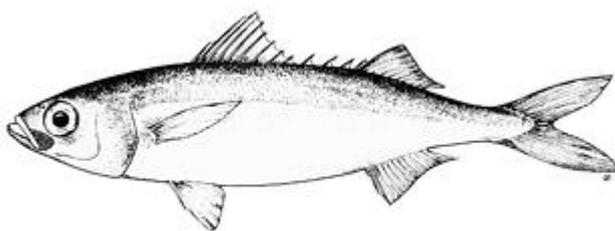
Species Summary																																																																			
Common Names	Pearl fish, picarel, red baitfish, red herring, southern rover, cape bonnetmouth																																																																		
Stock assessment	A DEPM Survey was conducted in 2020-21 (Oct), the result of which were first considered for the 2022-23 SPF fishing season. Tier 1 – 2 nd season.																																																																		
Exploitation Rate * 2023-24 Tier Level	*Tier 1 – 10% (5 Seasons)	Tier 2 – 5% (10 Seasons)	Tier 3 – 2.5% (no limit)																																																																
Estimated biomass	54,000 tonnes (2020-21 (Oct) DEPM survey) 68,886 tonnes (2005 DEPM survey)																																																																		
Stock Structure	The stock structure of redbait in Australia has not been studied. Recent DEPM surveys that suggest redbait spawns continuously around southern Tasmania indicate that the stock structure of this species needs to be investigated. Redbait within the SPF is assessed and managed as separate stocks in the eastern and western subareas																																																																		
Historical Catch data (Commonwealth fisheries)	<table border="1"> <caption>Historical Catch and TAC Data (tonnes)</caption> <thead> <tr> <th>Year</th> <th>Catch (t)</th> <th>TAC (t)</th> </tr> </thead> <tbody> <tr><td>2003-04</td><td>7500</td><td>15000</td></tr> <tr><td>2004-05</td><td>4000</td><td>10000</td></tr> <tr><td>2005-06</td><td>4000</td><td>10000</td></tr> <tr><td>2006-07</td><td>3500</td><td>10000</td></tr> <tr><td>2007-08</td><td>2000</td><td>10000</td></tr> <tr><td>2008-09</td><td>1000</td><td>10000</td></tr> <tr><td>2009-10</td><td>500</td><td>10000</td></tr> <tr><td>2010-11</td><td>200</td><td>10000</td></tr> <tr><td>2011-12</td><td>100</td><td>10000</td></tr> <tr><td>2012-13</td><td>100</td><td>10000</td></tr> <tr><td>2013-14</td><td>100</td><td>10000</td></tr> <tr><td>2014-15</td><td>100</td><td>10000</td></tr> <tr><td>2015-16</td><td>100</td><td>3000</td></tr> <tr><td>2016-17</td><td>100</td><td>3000</td></tr> <tr><td>2017-18</td><td>100</td><td>3000</td></tr> <tr><td>2018-19</td><td>100</td><td>3000</td></tr> <tr><td>2019-20</td><td>2000</td><td>3000</td></tr> <tr><td>2020-21</td><td>1992</td><td>3000</td></tr> <tr><td>2021-22</td><td>1968</td><td>3000</td></tr> <tr><td>2022-23*</td><td>772</td><td>5907</td></tr> </tbody> </table>				Year	Catch (t)	TAC (t)	2003-04	7500	15000	2004-05	4000	10000	2005-06	4000	10000	2006-07	3500	10000	2007-08	2000	10000	2008-09	1000	10000	2009-10	500	10000	2010-11	200	10000	2011-12	100	10000	2012-13	100	10000	2013-14	100	10000	2014-15	100	10000	2015-16	100	3000	2016-17	100	3000	2017-18	100	3000	2018-19	100	3000	2019-20	2000	3000	2020-21	1992	3000	2021-22	1968	3000	2022-23*	772	5907
Year	Catch (t)	TAC (t)																																																																	
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Catch and TAC (t) * incomplete season	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught																																																															
	2022-23*	5,370	5,907	772 / (13%)																																																															
	2021-22	3,440	3,784	1968 / (52%)																																																															
	2020-21	3,420	3,735	1992 / (53%)																																																															

	2019-20	3,150	3,492	2,445 / (70%)
	2018-19	3,420	3,761	319 / (15%)
ABARES Status	Biomass: Not overfished		Fishing Mortality: Not subject to overfishing	
Annual Fisheries Assessment Summary				
Key model technical assumptions/ parameters	<p>The most recent DEPM survey results for the redbait east stock is from 2020 (RBC 54,000 tonnes)</p> <p>The previous DEPM survey results are from 2005 and 2006. The DEPM surveys gave biomass estimates of 86,990 tonnes (2005) and 50,782 tonnes (2006). The biomass estimate for this stock was the average biomass estimate from the 2005 and 2006 DEPM surveys (68,886 tonnes).</p>			
Weekly CPUE Trends	<p>The weekly CPUE is monitored for evidence of localised depletion. If a general decrease in CPUE occurs after consistent effort within a given grid cell, this may be evidence of localised depletion occurring. However, there are a number of factors, not just fishing effort, which can also influence CPUE. SPFRAG review this information annually.</p> <p>No discernible trend in weekly CPUE data.</p>			
RAG Comments	<p>SPFRAG agreed to a new biomass estimate of 54,000 tonnes from the 2020-21 (Oct) DEPM survey.</p> <p>Fishing practises have not changed in recent years but there has been a large increase in the catch of redbait. This may be due to an influx of redbait into the fishing area.</p>			
Recommendations				
Recommended Biological Catch (RBC)	2023-24	<p>2nd Season at Tier 1</p> <p>54,000 x 10% = 5,400 tonnes</p>		
Additional Work - AFMA				
State Catch (t)	1	Four-year weighted average, rounded to nearest tonne		
Discards (t)	10	Rate based on previous three years, by method and applied to the RBC to get tonnage. If one method is not expected to fish in upcoming year, the discard amount attributed to that method does not get deducted from the RBC.		
Other Commonwealth Fishery Catch (t)	4	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	5,380 tonnes (rounded to the nearest 10 tonnes)			
SPFRAG Recommendations				

Commercial fishers' interests	No specific commercial fisher interests have been identified.			
Species specific management (target, companion and bycatch)	There are no identified implications for target, companion or bycatch species.			
SPF advice and any dissenting views	2023-24 TAC recommendation 5,380 t - single-year TAC SPFRAG advice and any dissenting views			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	5,380	
AFMA Advice				
AFMA Management recommends a TAC of 5,380 tonnes for the 2023-24 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2022-23 agreed TAC (t)	2023-24 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
5,370	5,380	10	2	+10

Redbait west

Emmelichthys nitidus



Species Summary				
Common Names	Pearl fish, picarel, red baitfish, red herring, southern rover, Cape bonnetmouth			
Stock assessment	A DEPM Survey was conducted in 2017-18 (Oct), the result of which were first considered for the 2019-20 SPF fishing season. Tier 1 – 5 th season.			
Exploitation Rate * 2023-24 Tier Level	*Tier 1 - 10 % (5 Seasons)	Tier 2 – 5 % (10 seasons)	Tier 3 – 2.5 % (No limit)	
Estimated biomass	66,787 tonnes (2017 DEPM Survey)			
Stock Structure	The stock structure of redbait in Australia has not been studied. Recent DEPM surveys that suggest redbait spawns continuously around southern Tasmania indicate that the stock structure of this species needs to be investigated. Redbait within the SPF is assessed and managed as separate stocks in the eastern and western subareas.			
Historical Catch data (Commonwealth fisheries)				
Catch and TAC (t) * incomplete season	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught
	2022-23*	6,680	7,348	n/a
	2021-22	6,680	7,348	n/a
	2020-21	6,640	7,308	n/a

	2019-20	6,680	6,762	9 / (0%)
	2018-19	820	1,108	n/a
ABARES Status	Biomass: Not overfished		Fishing Mortality: Not subject to overfishing	
Assessment Summary				
Key model technical assumptions/ parameters	The most plausible model biomass estimate ranged between 51,765 tonnes and 102,867 tonnes. With no solid reason to reject either estimate and for consistency with the approach taken with other stocks, the median biomass estimate of 66,787 tonnes was used as the basis for the Scientific Panel's (now replaced by SPFRAG) recommended biological catch level.			
Weekly CPUE Trends	The weekly CPUE is monitored for evidence of localised depletion. If a general decrease in CPUE occurs after consistent effort within a given grid cell, this may be evidence of localised depletion occurring. However, there are a number of factors, not just fishing effort, which can also influence CPUE. SPFRAG review this information annually. There was no data to review trends in the CPUE.			
RAG Comments	There was very little new data for this stock presented to SPFRAG at the December 2022 meeting given there had been limited fishing in the 2021 SPF season in the western sub-area. The annual assessment provided no basis to change previous advice for this stock which was to recommend the spawning biomass estimate of 66,787 tonnes be used for the RBC based on the weight of evidence provided by the previous survey.			
Recommendations				
Recommended Biological Catch (RBC)	2023-24	5 th season at Tier 1 66,787 x 10% = 6,678 tonnes		
Additional Work - AFMA				
State Catch (t)	0	Four-year weighted average, rounded to nearest tonne		
Discards (t)	0	Rate based on previous three years, by method and applied to the RBC to get tonnage. If one method is not expected to fish in upcoming year, the discard amount attributed to that method does not get deducted from the RBC.		
Other Commonwealth Fishery Catch (t)	0	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	6,680 tonnes (rounded to the nearest 10 tonnes)			
SPFRAG Recommendations				

Commercial fishers' interests	No specific commercial fisher interests have been identified.			
Species specific management (target, companion and bycatch)	There are no identified implications for target, companion or bycatch species.			
SPFRAG advice and any dissenting views	2023-24 TAC recommendation 6,680 t - single-year TAC SPFRAG advice and any dissenting views			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	6,680	
Undercatch (%)	Overcatch (%)	Determined Amount (t)	TAC (t)	
10	10	2	6,680	
AFMA Advice				
AFMA Management recommends a TAC of 6,680 tonnes for the 2023-24 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2022-23 agreed TAC (t)	2023-24 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
6,680	6,680	10	2	0

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