



Australian Government

Australian Fisheries Management Authority

Small Pelagic Fishery (SPF)

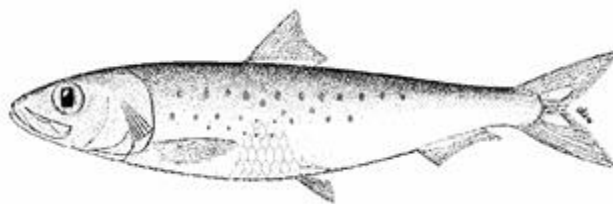
Species summaries 2022



Table of Contents

Species summaries 2022	1
<i>Australian sardine</i>	3
<i>Blue mackerel east</i>	6
<i>Blue mackerel west</i>	9
<i>Jack mackerel east</i>	12
<i>Jack mackerel west</i>	15
<i>Redbait east</i>	18
<i>Redbait west</i>	21
<i>References</i>	24

Australian sardine



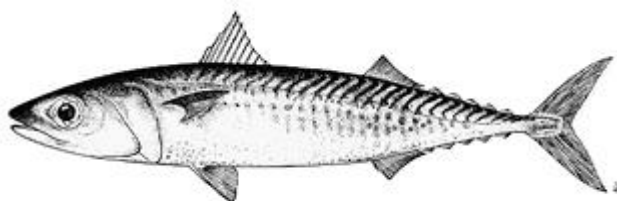
Sardinops sagax

Species Summary																																																																																
Common Names	Sardine, pilchard																																																																															
Stock assessment	A DEPM Survey was conducted in 2019, the results of which were first considered for the 2021-22 SPF fishing season. Tier 1 - 2 nd season.																																																																															
Exploitation Rate * 2022-23 Tier Level	*Tier 1 – 20% (5 seasons)	Tier 2 – 10% (5 seasons)	Tier 3 – 5% (no limit)																																																																													
Estimated biomass	42,700 tonnes (2019 DEPM Survey, northern east coast stock) 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 data (State and Commonwealth fisheries)	<table border="1"> <caption>Historical Catch Data (t)</caption> <thead> <tr> <th>Fishing Season (May-April)</th> <th>Catch (t)</th> </tr> </thead> <tbody> <tr><td>84/85</td><td>100</td></tr> <tr><td>85/86</td><td>150</td></tr> <tr><td>86/87</td><td>100</td></tr> <tr><td>87/88</td><td>100</td></tr> <tr><td>88/89</td><td>100</td></tr> <tr><td>89/90</td><td>150</td></tr> <tr><td>90/91</td><td>200</td></tr> <tr><td>91/92</td><td>250</td></tr> <tr><td>92/93</td><td>300</td></tr> <tr><td>93/94</td><td>350</td></tr> <tr><td>94/95</td><td>400</td></tr> <tr><td>95/96</td><td>450</td></tr> <tr><td>96/97</td><td>500</td></tr> <tr><td>97/98</td><td>400</td></tr> <tr><td>98/99</td><td>350</td></tr> <tr><td>99/00</td><td>300</td></tr> <tr><td>00/01</td><td>250</td></tr> <tr><td>01/02</td><td>200</td></tr> <tr><td>02/03</td><td>150</td></tr> <tr><td>03/04</td><td>100</td></tr> <tr><td>04/05</td><td>2000</td></tr> <tr><td>05/06</td><td>3200</td></tr> <tr><td>06/07</td><td>2800</td></tr> <tr><td>07/08</td><td>3800</td></tr> <tr><td>08/09</td><td>3000</td></tr> <tr><td>09/10</td><td>2500</td></tr> <tr><td>10/11</td><td>1500</td></tr> <tr><td>11/12</td><td>400</td></tr> <tr><td>12/13</td><td>300</td></tr> <tr><td>13/14</td><td>450</td></tr> <tr><td>14/15</td><td>550</td></tr> <tr><td>15/16</td><td>500</td></tr> <tr><td>16/17</td><td>550</td></tr> <tr><td>17/18</td><td>450</td></tr> <tr><td>18/19</td><td>550</td></tr> <tr><td>19/20</td><td>650</td></tr> <tr><td>20/21</td><td>650</td></tr> </tbody> </table>				Fishing Season (May-April)	Catch (t)	84/85	100	85/86	150	86/87	100	87/88	100	88/89	100	89/90	150	90/91	200	91/92	250	92/93	300	93/94	350	94/95	400	95/96	450	96/97	500	97/98	400	98/99	350	99/00	300	00/01	250	01/02	200	02/03	150	03/04	100	04/05	2000	05/06	3200	06/07	2800	07/08	3800	08/09	3000	09/10	2500	10/11	1500	11/12	400	12/13	300	13/14	450	14/15	550	15/16	500	16/17	550	17/18	450	18/19	550	19/20	650	20/21	650
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Catch and TAC (t)	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught																																																																												

* incomplete season	2021-22*	7,980	8,778	
	2020-21	9,190	10,109	102 / (1%)
	2019-20	9,050	10,001	232 / (2%)
	2018-19	9,510	10,465	136 / (1%)
	2017-18	9,550	9,738	104.239 / (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 biomass estimate of 42,700 tonnes for Australian sardine and that it was appropriate to apply the Tier 1 exploitation rate for the 2022-23 season.			
RAG Recommendations				
Recommended Biological Catch (RBC)	2022-23	2 nd Season at Tier 1 (2019 DEPM estimate) 42,700 x 20% = 8,540 tonnes		
Additional Work - AFMA				
State Catch (t)	554	Four-year weighted average for NSW catch only, rounded to nearest tonne		
Discards (t)	17	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	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	7,970 tonnes (rounded to the nearest 10 tonnes)			
MAC 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.			
MAC advice and any dissenting views	<p>2022-23 TAC recommendation 7,790 t - single-year TAC</p> <p>SEMAC advice and any dissenting views There were no dissenting views and SEMAC supported the advice provided by SPFRAG. SEMAC noted this stock is at the 2nd season at the Tier 1 exploitation rate. SEMAC noted significant NSW state catch for this species.</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 2022-23 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2021-22 agreed TAC (t)	2022-23 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
7,980	7,970	10	2	-10

Blue mackerel east



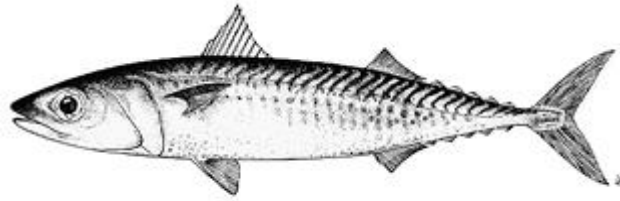
Scomber australasicus

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, the result of which were first considered for the 2021-22 SPF fishing season. Tier 1 – 2 nd season.																																																																															
Exploitation Rate * 2022-23 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 DEPM Survey) 83,000 tonnes (2015 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																																																																															
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Catch and TAC (t) * incomplete season	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught																																																																												
	2021-22*	11,440	12,584																																																																													

	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%)
	2017-18	12,090	12,249	2,891 / (24%)
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 South Australia in 2002-06. These samples are used due to 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	<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>In the 2020/21 SPF fishing season, the catch was the highest for the entire history of fishery. CPUE appears to be correlated with catch, indicating it is an index of availability rather than abundance. The no reason to be concerned about the status of this stock or the increases in catch.</p> <p>The fishery is taking small (juvenile) fish, which are not part of the spawning biomass estimate.</p> <p>SPFRAG noted the need for better estimates of adult parameters.</p> <p>The annual assessment provided no basis to change previous advice for this stock which was that SPFRAG accepted the 2019 biomass estimate of 80,000 tonnes for blue mackerel east and that it was appropriate to apply the Tier 1 exploitation rate for the 2022-23 season.</p>			
RAG Recommendations				
Recommended Biological Catch (RBC)	2022-23	2 nd Season at Tier 1 (2019 DEPM) 80,000 x 15% = 12,000 tonnes		
Additional Work - AFMA				
State Catch (t)	474	Four-year weighted average, rounded to nearest tonne		
Discards (t)	58	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)	17	Three year average.		
Research Catch Allowance (t)	0			
Provisional TAC	11,450 tonnes (rounded to the nearest 10 tonnes)			
MAC 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.			
MAC advice and any dissenting views	<p>2022-23 TAC recommendation 11,450 t - single-year TAC</p> <p>SEMAC advice and any dissenting views There were no dissenting views and SEMAC supported the advice provided by SPFRAG. SEMAC noted this stock is at the 2nd season at the Tier 1 exploitation rate and that the collection of adult samples is required to improve accuracy and uncertainty in the DEPM model.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	11,450	
AFMA Advice				
AFMA Management recommends a TAC of 11,450 tonnes for the 2022-23 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2021-22 agreed TAC (t)	2022-23 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
11,440	11,450	10	2	+10

Blue mackerel west



Scomber australasicus

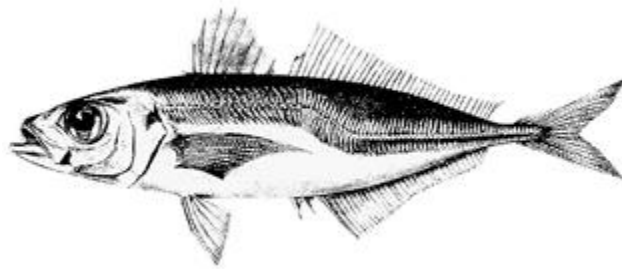
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Stock assessment	A DEPM Survey was conducted in 2005/06, the result of which were first considered for the 2006-07 SPF fishing season. Tier 3 – 6 th season.																																																								
Exploitation Rate * 2022-23 Tier Level	Tier 1 – 15% (5 seasons)	Tier 2 – 7.5% (5 seasons)	*Tier 3 - 3.75% (no time limit)																																																						
Estimated biomass	86,500 tonnes (2005/2006 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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13/14	0																																																								
14/15	0																																																								
15/16	950																																																								
16/17	750																																																								
17/18	0																																																								
18/19	0																																																								
19/20	0																																																								
20/21	0																																																								

	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught
Catch and TAC (t) * incomplete season	2021-22*	3,210	3,534	
	2020-21	3,210	3,534	0 / (0%)
	2019-20	3,240	3,563	12 / (0%)
	2018-19	3,230	3,850	0 / (0%)
	2017-18	3,230	3,850	0 / (0%)
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 2005/06.</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 2021 meeting given there had been limited fishing in the 2020-21 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 2022-23 season.</p>			
RAG Recommendations				
Recommended Biological Catch (RBC)	2022-23	<p>6th Season at Tier 3</p> <p>$86,500 \times 3.75\% = 3,243$ tonnes</p>		
Additional Work - AFMA				
State Catch (t)	5	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)			
MAC 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.			
MAC advice and any dissenting views	<p>2022-23 TAC recommendation 3,240 t - single-year TAC</p> <p>SEMAC advice and any dissenting views There were no dissenting views and SEMAC supported the advice provided by SPFRAG. SEMAC noted this stock is at the 6th season at the Tier 3 exploitation rate and on-going limited effort to fish for this species in the western SPF.</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 2022-23 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2021-22 agreed TAC (t)	2022-23 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
3,210	3,240	10	2	30

Jack mackerel east

Trachurus declivis



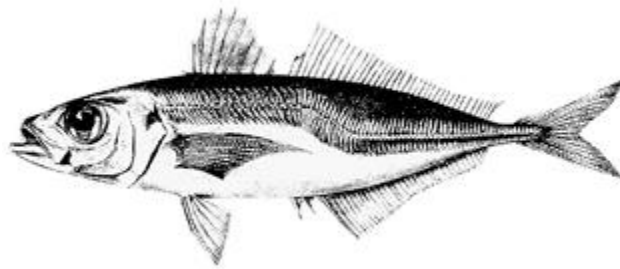
Species Summary																																																																															
Common Names	Cowanyoung, greenback horse mackerel, scaly mackerel, scad, common jack mackerel.																																																																														
Stock assessment	A DEPM Survey was conducted in 2019, the result of which were first considered for the 2020-21 SPF fishing season. Tier 1 - 3rd season.																																																																														
Exploitation Rate* 2022-23 Tier Level	*Tier 1 - 12% (5 Seasons)	Tier 2 – 6% (10 seasons)	Tier 3 – 3% (no limit)																																																																												
Estimated biomass	156,300 tonnes (2018 biomass estimate) 157,800 tonnes (2014 biomass estimate)																																																																														
Stock Structure	<p>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.</p>																																																																														
Historical Catch data (State and Commonwealth fisheries)	<table border="1"> <caption>Historical Catch Data (Estimated from Chart)</caption> <thead> <tr> <th>Fishing Season (May-April)</th> <th>Total Catch (t)</th> </tr> </thead> <tbody> <tr><td>84/85</td><td>6000</td></tr> <tr><td>85/86</td><td>22000</td></tr> <tr><td>86/87</td><td>39000</td></tr> <tr><td>87/88</td><td>35000</td></tr> <tr><td>88/89</td><td>8000</td></tr> <tr><td>89/90</td><td>12000</td></tr> <tr><td>90/91</td><td>15000</td></tr> <tr><td>91/92</td><td>16000</td></tr> <tr><td>92/93</td><td>9000</td></tr> <tr><td>93/94</td><td>8000</td></tr> <tr><td>94/95</td><td>5000</td></tr> <tr><td>95/96</td><td>1000</td></tr> <tr><td>96/97</td><td>1000</td></tr> <tr><td>97/98</td><td>10000</td></tr> <tr><td>98/99</td><td>4000</td></tr> <tr><td>99/00</td><td>2000</td></tr> <tr><td>00/01</td><td>1000</td></tr> <tr><td>01/02</td><td>1000</td></tr> <tr><td>02/03</td><td>1000</td></tr> <tr><td>03/04</td><td>3000</td></tr> <tr><td>04/05</td><td>2000</td></tr> <tr><td>05/06</td><td>1000</td></tr> <tr><td>06/07</td><td>1000</td></tr> <tr><td>07/08</td><td>1000</td></tr> <tr><td>08/09</td><td>1000</td></tr> <tr><td>09/10</td><td>1000</td></tr> <tr><td>10/11</td><td>1000</td></tr> <tr><td>11/12</td><td>1000</td></tr> <tr><td>12/13</td><td>1000</td></tr> <tr><td>13/14</td><td>1000</td></tr> <tr><td>14/15</td><td>1000</td></tr> <tr><td>15/16</td><td>6000</td></tr> <tr><td>16/17</td><td>4000</td></tr> <tr><td>17/18</td><td>3000</td></tr> <tr><td>18/19</td><td>5000</td></tr> <tr><td>19/20</td><td>8000</td></tr> <tr><td>20/21</td><td>6000</td></tr> </tbody> </table>			Fishing Season (May-April)	Total Catch (t)	84/85	6000	85/86	22000	86/87	39000	87/88	35000	88/89	8000	89/90	12000	90/91	15000	91/92	16000	92/93	9000	93/94	8000	94/95	5000	95/96	1000	96/97	1000	97/98	10000	98/99	4000	99/00	2000	00/01	1000	01/02	1000	02/03	1000	03/04	3000	04/05	2000	05/06	1000	06/07	1000	07/08	1000	08/09	1000	09/10	1000	10/11	1000	11/12	1000	12/13	1000	13/14	1000	14/15	1000	15/16	6000	16/17	4000	17/18	3000	18/19	5000	19/20	8000	20/21	6000
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	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught
Catch and TAC (t) * incomplete season	2021-22*	18,630	20,493	
	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%)
	2017-18	18,880	20,747	2,699 / (13%)
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 catch in 2019/20 was the highest over the last 20 years</p> <p>CPUE appears to be correlated with catch, indicating it is an index of availability rather than abundance.</p> <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 biomass estimate of 156,292 tonnes for jack mackerel east and that it was appropriate to apply the Tier 1 exploitation rate for the 2022-23 season.</p>			
RAG Recommendations				
Recommended Biological Catch (RBC)	2022-23	3 rd season at Tier 1 156,300 x 12% = 18,756 tonnes		
Additional Work - AFMA				
State Catch (t)	4	Four-year weighted average, rounded to nearest tonne		

Discards (t)	92	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)	41	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	18,620 tonnes (rounded to the nearest 10 tonnes)			
MAC 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.			
MAC advice and any dissenting views	<p>2022-23 TAC recommendation 18,620 t - single-year TAC</p> <p>SEMAC advice and any dissenting views There were no dissenting views and SEMAC supported the advice provided by SPFRAG. SEMAC noted this stock is at the 3rd season at the Tier 1 exploitation rate.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	18,620	
AFMA Advice				
AFMA Management recommends a TAC of 18,620 tonnes for the 2022-23 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2021-22 agreed TAC (t)	2022-23 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
18,630	18,620	10	2	-10

Jack mackerel west

Trachurus declivis



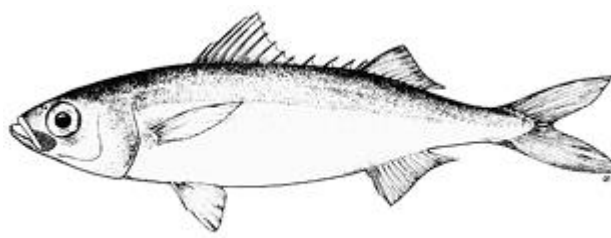
Species Summary																																																																																				
Common Names	Cowyoung, greenback horse mackerel, scaly mackerel, scad, common jack mackerel.																																																																																			
Stock assessment	A DEPM Survey was conducted in 2017, the result of which were first considered for the 2018-19 SPF fishing season. Tier 1 - 5 th Season.																																																																																			
Exploitation Rate * 2022-23 Tier Level	*Tier 1 - 12% (5 seasons)	Tier 2 – 6% (10 seasons)	Tier 3 – 3% (no limit)																																																																																	
Estimated biomass	35,000 tonnes																																																																																			
Stock Structure	<p>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.</p>																																																																																			
Historical Catch data (State and Commonwealth fisheries)	<table border="1"> <caption>Historical Catch Data (t)</caption> <thead> <tr> <th>Fishing Season (May-April)</th> <th>Catch (t)</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td>95/96</td><td>0</td><td></td></tr> <tr><td>96/97</td><td>200</td><td></td></tr> <tr><td>97/98</td><td>130</td><td></td></tr> <tr><td>98/99</td><td>10</td><td></td></tr> <tr><td>99/00</td><td>10</td><td></td></tr> <tr><td>00/01</td><td>10</td><td></td></tr> <tr><td>01/02</td><td>40</td><td></td></tr> <tr><td>02/03</td><td>170</td><td></td></tr> <tr><td>03/04</td><td>60</td><td></td></tr> <tr><td>04/05</td><td>220</td><td></td></tr> <tr><td>05/06</td><td>240</td><td></td></tr> <tr><td>06/07</td><td>360</td><td></td></tr> <tr><td>07/08</td><td>230</td><td></td></tr> <tr><td>08/09</td><td>150</td><td>Confidential</td></tr> <tr><td>09/10</td><td>230</td><td>Confidential</td></tr> <tr><td>10/11</td><td>0</td><td>Confidential</td></tr> <tr><td>11/12</td><td>0</td><td>Confidential</td></tr> <tr><td>12/13</td><td>0</td><td>Confidential</td></tr> <tr><td>13/14</td><td>0</td><td>Confidential</td></tr> <tr><td>14/15</td><td>0</td><td></td></tr> <tr><td>15/16</td><td>630</td><td>Confidential</td></tr> <tr><td>16/17</td><td>680</td><td>Confidential</td></tr> <tr><td>17/18</td><td>0</td><td>Confidential</td></tr> <tr><td>18/19</td><td>0</td><td>Confidential</td></tr> <tr><td>19/20</td><td>30</td><td></td></tr> <tr><td>20/21</td><td>0</td><td></td></tr> </tbody> </table>			Fishing Season (May-April)	Catch (t)	Notes	95/96	0		96/97	200		97/98	130		98/99	10		99/00	10		00/01	10		01/02	40		02/03	170		03/04	60		04/05	220		05/06	240		06/07	360		07/08	230		08/09	150	Confidential	09/10	230	Confidential	10/11	0	Confidential	11/12	0	Confidential	12/13	0	Confidential	13/14	0	Confidential	14/15	0		15/16	630	Confidential	16/17	680	Confidential	17/18	0	Confidential	18/19	0	Confidential	19/20	30		20/21	0	
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	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught
Catch and TAC (t) * incomplete season	2021-22*	4,180	4,598	
	2020-21	4,170	4,590	0 / (0%)
	2019-20	4,200	4,619	14 / (0%)
	2018-19	4,190	4,282	0 / (0%)
	2017-18	920	1,280	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 2021 meeting given there had been limited fishing in the 2020 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 2017 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.</p>			
RAG Recommendations				
Recommended Biological Catch (RBC)	2022-23	5 th Season at Tier 1 35,000 x 12% = 4,200 tonnes		
Additional Work - AFMA				

State Catch (t)	5	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)	7	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	4,190 tonnes (rounded to the nearest 10 tonnes)			
MAC 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.			
MAC advice and any dissenting views	<p>2022-23 TAC recommendation 4,190 t - single-year TAC</p> <p>SEMAC advice and any dissenting views There were no dissenting views and SEMAC supported the advice provided by SPFRAG. SEMAC noted this stock is at the 5th season at the Tier 1 exploitation rate.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	4,190	
AFMA Advice				
<p>AFMA Management recommends a TAC of 4,190 tonnes for the 2022-23 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.</p>				
2021-22 agreed TAC (t)	2022-23 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
4,180	4,190	10	2	+10

Redbait east

Emmelichthys nitidus



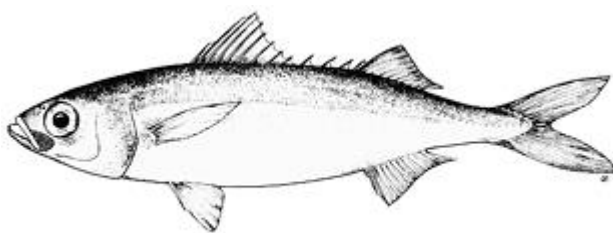
Species Summary				
Common Names	Pearl fish, picarel, red baitfish, red herring, southern rover, cape bonnetmouth			
Stock assessment	A DEPM Survey was conducted in 2020. This is the first SPF Fishing Season the results of the DEPM survey will be considered. Tier 1 –1st season.			
Exploitation Rate * 2022-23 Tier Level	*Tier 1 – 10% (5 Seasons)	Tier 2 – 5% (10 Seasons)	Tier 3 – 2.5% (no limit)	
Estimated biomass	54,000 tonnes (2021 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 (State and Commonwealth fisheries)				
Catch and TAC (t) * incomplete season	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught
	2021-22*	3,440	3,784	
	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%)

	2017-18	3,410	3,741	15 / (0%)
ABARES Status	Biomass: Not overfished		Fishing Mortality: Not subject to overfishing	
Annual Fisheries Assessment Summary				
Key model technical assumptions/ parameters	The most recent DEPM survey results for the redbait east stock is from 2020 (RBC 54,000 tonnes) 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).			
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. No discernible trend in weekly CPUE data.			
RAG Comments	SPFRAG agreed to a new biomass estimate of 54,000 tonnes from the 2020 DEPM survey. 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.			
RAG Recommendations				
Recommended Biological Catch (RBC)	2022-23	1 st Season at Tier 1 54,000 x 10% = 5,400 tonnes		
Additional Work - AFMA				
State Catch (t)	0	Four-year weighted average, rounded to nearest tonne		
Discards (t)	26	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)	6	Three year average		
Research Catch Allowance (t)	0			
Provisional TAC	5,370 tonnes (rounded to the nearest 10 tonnes)			
MAC 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.			
MAC advice and any dissenting views	<p>2022-23 TAC recommendation 5,370 t - single-year TAC</p> <p>SEMAC advice and any dissenting views There were no dissenting views and SEMAC supported the advice provided by SPFRAG. SEMAC noted this stock is at the 1st season at the Tier 1 exploitation rate following a recent DEPM and updated biomass estimate for this stock. SEMAC noted that catches are good and effort is occurring over a wider fishing area.</p>			
Undercatch (%)	Overcatch (%)	Determined amount (t)	TAC (t)	
10	10	2	5,370	
AFMA Advice				
AFMA Management recommends a TAC of 5,370 tonnes for the 2022-23 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2021-22 agreed TAC (t)	2022-23 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
3,440	5,370	10	2	+1,930

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, the result of which were first considered for the 2019-20 SPF fishing season. Tier 1 – 4th season.																																																																																			
Exploitation Rate * 2022-23 Tier Level	*Tier 1 - 10 % (5 Seasons)	Tier 2 – 5 % (10 seasons)	Tier 3 – 2.5 % (No limit)																																																																																	
Estimated biomass	66,800 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 (State and Commonwealth fisheries)	<p>* Confidential (<6 boats/yr) - Only Commonwealth data shown</p> <table border="1"> <caption>Historical Catch Data (t)</caption> <thead> <tr> <th>Fishing Season (May-April)</th> <th>Catch (t)</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td>95/96</td><td>0</td><td></td></tr> <tr><td>96/97</td><td>1000</td><td>Confidential</td></tr> <tr><td>97/98</td><td>0</td><td></td></tr> <tr><td>98/99</td><td>1000</td><td>Confidential</td></tr> <tr><td>99/00</td><td>0</td><td></td></tr> <tr><td>00/01</td><td>0</td><td></td></tr> <tr><td>01/02</td><td>1100</td><td></td></tr> <tr><td>02/03</td><td>1300</td><td>Confidential</td></tr> <tr><td>03/04</td><td>250</td><td>Confidential</td></tr> <tr><td>04/05</td><td>2500</td><td>Confidential</td></tr> <tr><td>05/06</td><td>3100</td><td>Confidential</td></tr> <tr><td>06/07</td><td>3200</td><td>Confidential</td></tr> <tr><td>07/08</td><td>1400</td><td>Confidential</td></tr> <tr><td>08/09</td><td>600</td><td>Confidential</td></tr> <tr><td>09/10</td><td>300</td><td>Confidential</td></tr> <tr><td>10/11</td><td>0</td><td></td></tr> <tr><td>11/12</td><td>0</td><td></td></tr> <tr><td>12/13</td><td>0</td><td></td></tr> <tr><td>13/14</td><td>0</td><td></td></tr> <tr><td>14/15</td><td>1000</td><td>Confidential</td></tr> <tr><td>15/16</td><td>1100</td><td></td></tr> <tr><td>16/17</td><td>1100</td><td>Confidential</td></tr> <tr><td>17/18</td><td>1000</td><td>Confidential</td></tr> <tr><td>18/19</td><td>0</td><td></td></tr> <tr><td>19/20</td><td>1000</td><td>Confidential</td></tr> <tr><td>20/21</td><td>0</td><td></td></tr> </tbody> </table>			Fishing Season (May-April)	Catch (t)	Notes	95/96	0		96/97	1000	Confidential	97/98	0		98/99	1000	Confidential	99/00	0		00/01	0		01/02	1100		02/03	1300	Confidential	03/04	250	Confidential	04/05	2500	Confidential	05/06	3100	Confidential	06/07	3200	Confidential	07/08	1400	Confidential	08/09	600	Confidential	09/10	300	Confidential	10/11	0		11/12	0		12/13	0		13/14	0		14/15	1000	Confidential	15/16	1100		16/17	1100	Confidential	17/18	1000	Confidential	18/19	0		19/20	1000	Confidential	20/21	0	
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Catch and TAC (t) * incomplete season	Year	Agreed TAC (t)	TAC after unders/overs (t)	Catch(t) / % TAC Caught																																																																																
	2021-22*	6,680	7,348																																																																																	

	2020-21	6,640	7,308	0 / (0%)
	2019-20	6,680	6,762	9 / (0%)
	2018-19	820	1,108	0 / (0%)
	2017-18	820	1,108	0 / (0%)
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 2021 meeting given there had been limited fishing in the 2020 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 survey.			
RAG Recommendations				
Recommended Biological Catch (RBC)	2022-23	4 th season at Tier 1 66,800 x 10% = 6,680 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)	1	Three year average		
Research Catch Allowance (t)	0			

Provisional TAC		6,680 tonnes (rounded to the nearest 10 tonnes)		
MAC 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.		
MAC advice and any dissenting views		<p>2022-23 TAC recommendation 6,680 t - single-year TAC</p> <p>SEMAC advice and any dissenting views There were no dissenting views and SEMAC supported the advice provided by SPFRAG. SEMAC noted this stock is at the 4th season at the Tier 1 exploitation rate.</p>		
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 2022-23 fishing year with undercatch and overcatch provisions set at 10 per cent, and a determined amount of 2 t.				
2021-22 agreed TAC (t)	2022-23 recommended TAC (t)	Overcatch & Undercatch (%)	Determined amount (t)	Change in TAC (t)
6,680	6,680	10	2	0

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