

Greenlip Abalone (2020)

Haliotis laevis



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia Area 2 Fishery	Depleting	Catch, CPUE, length-frequency data, fishery-independent surveys
Western Australia	Western Australia Area 3 Fishery	Depleted	Catch, CPUE, length-frequency data, fishery-independent surveys
Victoria	Victoria Central Zone Fishery	Undefined	
Victoria	Victoria Western Zone Fishery	Undefined	
Tasmania	Tasmania Greenlip Abalone Fishery	Depleting	CPUE
South Australia	South Australia Central Zone Fishery	Depleting	CPUE, fishery-independent surveys
South Australia	South Australia Southern Zone Fishery	Undefined	
South Australia	South Australia	Depleting	CPUE, fishery-independent surveys

	Western Zone Fishery		
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STOCK STRUCTURE

Greenlip Abalone is distributed across southern mainland Australia and northern Tasmania. The biological stock structure of Greenlip Abalone has recently been examined [Mayfield et al. 2014, Miller et al. 2014]. Genetic evidence has confirmed that Greenlip Abalone comprise numerous independent biological stocks, but at a spatially broader scale than the biological stock structure evident for Blacklip Abalone [Miller et al. 2009, Mayfield et al. 2014, Miller et al. 2014]. There are many biological stocks across Western Australia, Tasmania, Victoria and South Australia. Given the large number of biological stocks, it is not practical to assess each separately.

Here, assessment of stock status is presented at the management unit level—South Australia Central Zone Fishery, South Australia Southern Zone Fishery and South Australia Western Zone Fishery (South Australia); Tasmania Greenlip Abalone Fishery (Tasmania); Victoria Central Zone Fishery, Victoria Western Zone Fishery (Victoria); Western Australia Area 2 Fishery, Western Australia Area 3 Fishery (Western Australia).

STOCK STATUS

South Australia Central Zone Fishery

Greenlip Abalone catches in the South Australia Central Zone Fishery (SACZF) have been stable and consistent with the total allowable commercial catch (TACC) (currently 46 tonnes (t) meat weight) since its introduction in 1990.

The fourth management plan for the South Australian Abalone Fishery (SAAF) was developed from 2015–16 to 2019–20 and is currently in draft form [PIRSA 2020 in prep]. The draft management plan includes the draft harvest strategy, which is intended to be the primary tool used to achieve the goal of sustainably harvesting the abalone resource and allocating stock status in accordance with the National Status Reporting Framework (NSRF). The draft harvest strategy provides a structured, species-specific and spatially explicit framework for decision making and includes assignment of stock status consistent with the NSRF. It has three main phases: (1) a monitoring phase in which information is collected for the two performance indicators, CPUE and legal density of abalone from fishery-independent surveys (FIS), along with other relevant fishery information; (2) the stock assessment phase where the performance of each spatial assessment unit (SAU; minimum spatial scale currently used to assess the fishery) is scored based on a CPUE score and, for some key SAUs, a legal density score. This scoring is based on a range from 0 to 10 where the target reference point is 5 and the limit reference point is 0. Aggregated scores for the SAUs provide an overall stock status based on trigger reference points for biomass (zone score used as a proxy) and fishing mortality (zone score trend used as a proxy); and (3) the final step where zone score is translated to a recommended zonal catch. During this step a workshop is held with industry to share relevant information, and zonal catch can be adjusted within a 10 per cent range based on the information through harvest decision rules. The adjusted zonal catch helps to inform a TACC for the following season.

The most recent assessment report for the SACZF was completed in 2020 and reported up to the conclusion of the 2019 season [Burnell et al. 2020]. The primary measures for biomass and fishing mortality are commercial CPUE and FIS of legal-size abalone density, including derived estimates of harvestable biomass.

Catch per unit effort was stable during the 1990s at a relatively low level (average of 21 kg meat weight per hour) before rising sharply to 30 kg per hour in 2000. Following the highest recorded level of 31 kg per hour in 2001, the

zonal CPUE has generally followed a declining trend for almost 20 years, reaching 21 kg per hour in 2019. While CPUE is currently at its lowest level in two decades, it remains similar to reference levels from 1990–2000. Over the history of the fishery, most of the catch (> 70 percent) has been harvested from two SAUs: Tiparra Reef and West Yorke Peninsula. Catch rates from both of these SAUs have decreased consistently over the last five to seven seasons, following contemporary peaks between 2012 and 2014. Notably, CPUE in the West Yorke Peninsula SAU declined by 16 per cent in 2019, from 22 to 18 kg per hour. Collectively, the remaining SAUs have had below-average CPUE estimates in recent seasons.

Biennial FIS estimates of legal density and derived biomass were available for the Tiparra Reef and West Yorke Peninsula SAUs. At Tiparra Reef, the density of legal-sized Greenlip Abalone has increased almost 80 per cent from a contemporary low recorded in 2011. Nonetheless, the density of sub-legal-size Greenlip Abalone remains at the second lowest level recorded since 1990, despite size distributions indicative of recent recruitment. In the West Yorke Peninsula SAU, the FIS legal density and estimated harvestable biomass were high until recently, but both legal density (40 per cent) and derived biomass (46 per cent) decreased substantially between the surveys undertaken in 2017 and 2019.

Application of the proposed harvest strategy in 2019 resulted in a zone score of 4.6 that, in combination with the zone trend score of 4.1 (reflecting a decreasing trend), define the stock status for Greenlip Abalone in the SACZF in 2019 as 'depleting'. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. The above evidence indicates that, over a recent period, the biomass declined and that the current level of fishing mortality is likely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the South Australia Central Zone Fishery management unit is classified as a **depleting stock**.

**South
Australia
Southern
Zone
Fishery**

The most recent assessment report for the South Australia Southern Zone Fishery (SASZF) was completed in 2020 and reported up to the conclusion of the 2018–19 season [Burnell et al. 2020]. The season in this fishery extends from 1 October to 30 September of the following year, and this species is typically harvested as a bycatch even though there is a separate Greenlip Abalone total allowable commercial catch (TACC). The maximum catch of Greenlip Abalone in the SASZF was 19 t (whole weight) in 1968–69, but recent Greenlip Abalone catches have generally been small, being <5 t per season from 2013–14, with the current TACC set at 1.8 t. This reflects the low density and patchy distribution of Greenlip Abalone in the SASZF. There are no data available to estimate biomass or exploitation rates. In addition, there is no knowledge on recruitment or harvestable biomass, and there are no defined target or limit reference levels. This prevents assessment of current stock size or fishing pressure. Consequently, there is insufficient information available to confidently classify the status of this stock.

On the basis of the evidence provided above, the South Australia Southern Zone Fishery management unit is classified as an **undefined stock**.

**South
Australia
Western
Zone
Fishery**

The total commercial catch for Greenlip Abalone has declined by 37 per cent from the stable catch over the decade ending 2009 (which averaged 81 t) to the 2020 total allowable commercial catch (TACC) (51 t) meat weight. This decline in catch was the combined effect of TACC reductions and the removal of one licence during the elimination of displaced catch/effort as part of the implementation of state marine parks. The total catch was further decreased by voluntary reductions in catch by the commercial sector in 2015, 2016 and 2019

[Stobart et al. 2019, 2020].

The fourth management plan for the South Australian Abalone Fishery (SAAF) was developed from 2015–16 to 2019–20 and is currently in draft form [PIRSA 2020 in prep]. The draft management plan includes the draft harvest strategy intended to be the primary tool used to achieve the goal of sustainably harvesting the abalone resource and allocating stock status in accordance with the National Status Reporting Framework (NSRF). The draft harvest strategy provides a structured, species-specific and spatially explicit framework for decision making and includes assignment of stock status consistent with the NSRF. It has three main phases: (1) a monitoring phase in which information is collected for the two performance indicators, catch per unit effort (CPUE) and legal density of abalone from fishery-independent surveys (FIS), along with other relevant fishery information; (2) the stock assessment phase where the performance of each SAU is scored based on a CPUE score and, for some key SAUs, a legal density score. This scoring is based on a range from 0 to 10 where the target reference point is 5 and the limit reference point is 0. Aggregated scores for the SAUs provide an overall stock status based on trigger reference points for biomass (zone score used as a proxy) and fishing mortality (zone score trend used as a proxy); and (3) the final step where zone score is translated to a recommended zonal catch. During this step a workshop is held with industry to share relevant information, and zonal catch can be adjusted within a 10 per cent range based on the information through harvest decision rules. The adjusted zonal catch helps to inform a TACC for the following season.

The most recent assessment report for the South Australia Western Zone Fishery (SAWZF) was completed in 2020 and reported to the end of June 2020 [Stobart et al. 2020]. The primary measures for biomass and fishing mortality are CPUE and FIS of legal-sized density by financial year [PIRSA 2020]. The CPUE for Greenlip Abalone in the SAWZF remained relatively stable between the 1979 and 1989 and then increased rapidly, reaching a peak of 30 kg per hour in 2004. From 2004, CPUE decreased substantially to 20 kg per hour in 2013, the seventh lowest value since records began in 1979. The CPUE then increased to 22 kg per hour in 2015, attributed to a combination of changing spatial and temporal fishing patterns and an increase in stock abundance [Stobart and Mayfield 2016]. However, this increase was not sustained, with the CPUE decreasing again between 2015 and 2018 to the fifth lowest value on record [Stobart et al. 2020], subsequently increasing to the tenth lowest value on record for the SAWZF in 2019.

The recent decline in CPUE observed for the SAWZF was widespread across fishing grounds and resulted in CPUE values that were amongst the lowest on record at the three most important SAUs—Anxious Bay, The Gap and Avoid Bay—from which 23 per cent of the Greenlip Abalone catch was obtained in 2019. Of the remaining SAUs, most had relatively low CPUE values in 2019. The recent declines in CPUE occurred despite a 4 per cent reduction in catch from 2015 to 2019 and the change from fishing primarily in summer, when fish of a given shell length weigh least, to autumn when they weigh more [Stobart et al. 2013]. Fishery-independent surveys at Anxious Bay, The Gap and Avoid Bay also indicated that the density of legal-sized Greenlip Abalone at these three locations was relatively low in 2020, as was sub-legal-sized density. Application of the proposed harvest strategy resulted in a zone score of 3.3 that, in combination with the zone trend score of 3.8 (reflecting a decreasing trend), define the stock status for Greenlip Abalone in the WZ in the 2019–20 FY as ‘depleting’. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. The above evidence indicates that, for the period from 2004–2020, the biomass declined and that the current level of fishing mortality is likely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the **South Australia Western Zone Fishery management unit** is classified as a **depleting** stock.

**Tasmania
Greenlip
Abalone
Fishery**

The Tasmanian abalone fishery has been quota managed with an annual total allowable commercial catch (TACC) since 1985. Since 2000, separate TACCs for Greenlip Abalone and Blacklip Abalone have been implemented, with catch limits within the Greenlip Abalone TACC applied to four regions within the Greenlip Abalone zone. Size limits vary with a legal minimum length (LML) of 132 mm, 145 mm or 150 mm depending on growth rates, size at maturity and maximum size of populations in different regions. An annual fishery assessment is conducted using fishery-dependent catch per unit effort (CPUE) data, and until 2014 the TACC was determined by an *ad-hoc* approach using trends in CPUE and industry perceptions on the state of the resource. In the 2012 and 2014 Status of Australian Fish Stocks editions, this fishery was classified as undefined due to the complexities of reporting and apportioning of effort to Greenlip Abalone, and hence understanding CPUE, in this mixed species fishery. The fishery-dependent data time series has since been reviewed and revised and a formal process for assigning effort in mixed-species fishing events established [Mundy and McAllister 2020], enabling the development of separate CPUE indices for Greenlip and Blacklip Abalone.

In 2014–15, an empirical harvest strategy was developed [Mundy and McAllister 2020] and tested by Management Strategy Evaluation (MSE) [Haddon et al. 2014, Buxton et al. 2015, Haddon and Mundy 2016]. This harvest strategy was applied in the 2017 annual fishery assessment [Mundy and McAllister 2018]. The harvest strategy assesses fishery performance against target reference points for three performance measures (PM) derived from standardised CPUE (SCPUE) data: 1) current CPUE relative to an agreed target (55th percentile of the annual standardised mean CPUE within the reference period); 2) the 4-year gradient of CPUE (target gradient is zero); and 3) the per cent change in SCPUE in the past year (target change is zero). The reference period for the 2017 assessment spans fishery data between 1992 and 2017. A scoring function is applied to the three PMs, resulting in a score between zero and 10, where five is the target score and zero and 10 are the zone-wide lowest and highest values for that PM within the reference period. Weightings are applied to the three PMs 0.65:0.25:0.1 to provide a combined final score used in the Control Rule. The HS is applied individually to each statistical reporting block, and a zone score is obtained from the mean block score weighted by block catch.

The zone target CPUE PM score is used as a proxy for biomass and the zone gradient CPUE PM score is used as a proxy for fishing mortality, F . A target CPUE score of one is the limit reference point (LRP) defining the boundary between recruitment overfished and depleting for all Tasmanian management units. This LRP is typically five per cent above the lowest SCPUE observed within the zone during the reference period. A negative zone gradient score gives evidence that fishing mortality is increasing and the magnitude of the gradient provides some information on the magnitude of F . The gradient four PM score ranges from negative five to positive five, where the target reference point is zero and defines the boundary between sustainable and depleting classifications, but also between the classifications of recovering and depleted. The combination of a negative CPUE gradient and near record low CPUE score represents a cautious proxy for the true depleted reference point. No reporting blocks have become depleted under this harvest strategy within the reference period (1992–2018), providing confidence that maintaining stocks above the LRP will prevent stock depletion, as predicted by MSE testing of the HS [Haddon and Mundy 2016].

The TACC for the Tasmania Greenlip Abalone Fishery has been stable at around 140 t since 2000, with only minor variation in the proportion of the TACC harvested annually from each of the four regions (King Island, North West, North East and Furneaux). The Greenlip TACC was reduced in 2018 and 2019, with a total catch set at 108.5 t in 2019. Catch-weighted mean standardised CPUE (SCPUE_{cw}) has declined slowly since 2010 [Mundy and McAllister 2020]. The zone-wide catch-weighted block mean SCPUE_{cw} declined from 54.4 Kg/Hr in 2017 to 50.6 Kg/Hr in 2019. The regional SCPUE is close to the target SCPUE

in two of the four regions; the Furneaux Group region is above the target reference point (TRP) and the King Island region is below the TRP but above the LRP. The zone-wide proxy for abundance has declined from 4.2 in 2016 to 3.6 in 2017, although remains above the LRP. The above evidence indicates that biomass is unlikely to be depleted and that recruitment is unlikely to be impaired.

The zone-wide proxy for F in 2019 was -0.2, just below the TRP. The above evidence indicates that, for the period from 2010–19, the biomass declined and that the current level of fishing mortality is likely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the Tasmania Greenlip Abalone Fishery management unit is classified as a **depleting** stock.

**Victoria
Central
Zone
Fishery**

Greenlip Abalone comprises a small (1 per cent) component of the total commercial abalone catch in the Victoria Central Zone Fishery management unit. The total allowable commercial catch (TACC) has remained at 3.4 t since 2009 with catches typically below the TACC. While recent catches are lower than historical catch estimates (which were up to 100 t per year in the 1960s–70s), it is thought that some fishers choose not to take or trade their catch allocation, in part because fishing for Greenlip Abalone in the Victoria Central Zone Fishery management unit is less profitable than fishing for Blacklip Abalone which accounts for most of the total catch. The low current catch and very high legal minimum lengths of 145 mm and 150 mm west and east of Point Nepean, respectively, minimise the impact of fishing on the stock and ensure that a large proportion of Greenlip Abalone are protected from fishing for a number of years after they have attained maturity.

The low catches and resulting limited data on Greenlip Abalone in the mixed species Victoria Central Zone Fishery management unit makes catch per unit effort (CPUE) unreliable for this species, and prevents direct (or by proxy) assessment of current stock size or fishing pressure. In addition, there is little information about recruitment, no survey data during the past decade and the Victorian Wild Harvest Abalone Fishery Management Plan [Department of Economic Development, Jobs, Transport and Resources 2014] does not identify a performance indicator or a reference point below which the fishery would be defined as being depleted. Consequently, there is insufficient information available to confidently classify the status of this stock.

Based on the evidence provided above, the Victoria Central Zone Fishery management unit is classified as an **undefined** stock.

**Victoria
Western
Zone
Fishery**

Greenlip Abalone comprises a small (2 per cent) component of the total commercial abalone catch in the Victoria Western Zone Fishery management unit. The total allowable commercial catch (TACC) is currently 1.4 t, reflecting a relatively lower level than in past years when Greenlip Abalone TACCs were increased to compensate for the reduction in Blacklip Abalone catches due to the occurrence of abalone viral ganglioneuritis (AVG) and in response to a population survey of Greenlip Abalone on Minerva and Hospital reefs [Prince 2008]. These catches were not sustained, and the TACC was set at zero from 2014 [Victorian Government 2013] until a TACC of 1.4 t was set in 2017 and has remained in place. Since then, catches have been 1.3–1.4 t and have, to a greater degree, come from further offshore on Julia Bank away from the areas that supported the higher catch in the past. This shift offshore has seen catch per unit effort (CPUE) and sizes increase [WADA 2020], presumably because the shift offshore has accessed historically unfished, or lightly fished, stocks. Previous concerns for stock status were based on low catches and declining catch rates [Stewardson et al. 2016]. However, (1) the decline in catch rates from 2008 to 2013 [Gorfine et al. 2018] reflected fishing on a resource that was essentially unfished and catch rate exceeded 40 kg per hour in 2013 when

fishing ceased; and (2) the declines in catch are now considered to reflect a return to targeting the recovering Blacklip Abalone stocks and a shift away from targeting Greenlip Abalone.

The current TACC supports the collection of some data on the fishery, but these data are insufficient to support a formal assessment, particularly because there has been a spatial shift in fishing operations [WADA 2020]. Fishing for Greenlip Abalone in the Victoria Western Zone Fishery management unit is less profitable than fishing for Blacklip Abalone, which accounts for most of the total catch, limiting the potential for increased catches of Greenlip Abalone under present circumstances. The low current catch and high legal minimum length of 135 mm minimise the impact of fishing on the stock and ensure that a large proportion of abalone are protected from fishing for a number of years after they have attained maturity.

The low catches and resulting limited data on Greenlip Abalone in the mixed species Victoria Western Zone Fishery management unit makes CPUE unreliable for this species and prevents direct (or by proxy) assessment of current stock size or fishing pressure. In addition, there is little information about recruitment, no survey data during the past decade and the Victorian Wild Harvest Abalone Fishery Management Plan [Department of Economic Development, Jobs, Transport and Resources 2014] does not identify a performance indicator or a reference point below which the fishery would be defined as depleted. Consequently, there is insufficient information available to classify the status of this stock.

Based on the evidence provided above, the Victoria Western Zone Fishery management unit is classified as an **undefined** stock.

Western Australia Area 2 Fishery

Catches in the Western Australia Area 2 and Area 3 Abalone Fisheries are controlled by a total allowable commercial catch (TACC), set annually in accordance with the harvest control rule defined in the Abalone Resource of Western Australia Harvest Strategy 2016–21 [Department of Fisheries 2017]. The harvest control rule uses a three-year moving average of standardised catch per unit effort (SCPUE) as the key performance indicator (PI) against specified limit, threshold and target reference levels. The threshold is a level at which additional management action should be considered to prevent decline towards the limit. The fishery is defined as depleted if the PI is below the limit reference level, which is set at two-thirds of the lowest annual SCPUE observed (threshold level) in each management area during the specified reference period (1992–2006) of recruitment stability in the commercial fishery [Department of Fisheries 2017].

In the Western Australia Area 2 Fishery (WAA2F), the annual SCPUE for Greenlip Abalone oscillated between the target and threshold reference levels from 1995 to 2013. A declining trend in SCPUE has been observed since 2010, with the SCPUE being at a record low level in 2019. The rate of decline appeared to reduce between 2016 and 2018, and therefore the SCPUE may have been responding to the reductions in catch between 2015 and 2018. However, the PI has now been below the threshold for the last 5 years but above the limit reference level. Sub-area analysis of raw catch rate, average meat weight per individual and length-frequency distributions from catch sampling are consistent with the recent decline in the SCPUE trend [Hart et al. 2013, Hart et al. 2017].

The fishery has a legal minimum length of 145 mm, which allows 2–5 years of spawning to occur before recruitment to the fishery. Above-average water temperatures since 2011 (extreme marine heatwave in the 2010–11 summer) are thought to have had negative effects on abalone growth or recruitment, but the degree of impact needs to be assessed further. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. For the period 2010–2019, the biomass declined, but the stock is not yet considered to be recruitment impaired. The

above evidence also indicates that the level of fishing mortality prevailing during the period 2010–19 was likely to cause the stock to become recruitment impaired. Under the Harvest Strategy [Department of Fisheries 2017], management action was implemented in the WAA2F to bring the TACC in line with the harvest control rule. This resulted in the TACC being set at 60 per cent of long-term, target commercial sustainable harvest level (48 t whole weight in 2016). However, since 2016 the TACC has been reduced further until in 2019 it was 24 t (30 per cent of long-term, target commercial sustainable harvest level). The reductions in TACC have reduced the fishing mortality, and the effect of this management intervention will be monitored annually to determine if the reductions are enough to prevent the stock from becoming depleted.

Based on the evidence provided above, the Western Australia Area 2 Fishery management unit is classified as a **depleting stock**.

Western Australia Area 3 Fishery

Catches in the Western Australia Area 3 Fishery (WAA3F) are managed by the same Harvest Strategy and total allowable commercial catch (TACC)-setting process as described above for the Western Australia Area 2 Abalone Fishery, as defined in the Abalone Resource of Western Australia Harvest Strategy 2016–21 [Department of Fisheries 2017]. The annual standardised catch per unit effort (SCPUE) for Greenlip Abalone in the WAA3F exhibited a declining trend from above the target reference level in 2000 to the threshold in 2005. A steady increase in annual SCPUE then occurred until 2010 but over the next eight years it has steadily declined to a point where, in both 2017 and 2018, it was below the limit reference level. The key Performance Indicator (PI) is the three-year running mean of annual SCPUE, which has continually declined since 2012 and in 2018 breached the limit reference level for the first time in this management area's history.

Sub-area analysis of raw catch rate, average meat weight per individual and length-frequency distributions from catch sampling support the decline seen in the SCPUE trend [Hart et al. 2013, Hart et al. 2017]. However, the meat weight has exhibited an increase over the last two to three years in all sub-areas. Fishery-independent surveys in the Augusta sub-area (which provides 53 per cent of WAA3F catch) indicate that the total density of Greenlip Abalone has been at record low levels for the last 5 years. The densities of juvenile animals (40–80 mm shell length) between 2014 and 2017 have also been at record low levels with the slight increase during 2018 not sustained in 2019 [Hart et al. 2017]. The fishery has a legal minimum length of 150 mm which allows 3–6 years of spawning to occur before recruitment to the fishery. The effect of above-average water temperatures on the abalone stocks since 2011 (extreme marine heatwave in the 2010–11 summer) may have reduced recruitment and/or growth and needs to be assessed further.

Under the Harvest Strategy [Department of Fisheries 2017], management action was implemented in the WAA3F to bring the TACC in line with the harvest control rule in 2017. However, since 2017 the TACC has been reduced further until in 2019 a reduction of quota by 50 per cent was achieved through the closure of the Augusta sub-area to commercial fishing for Greenlip Abalone. The 2019 TACC reduction to 11.4 per cent of the long-term sustainable harvest level (10.5 t whole weight) was predicated on; (1) the PI being below the limit reference level; (2) the Harvest Control Rule outcome; (3) various stock indicators exhibiting a declining trend; (4) Augusta sub-area SCPUE continued decline; and (5) fishery-independent surveys in the Augusta sub-area indicating that total, juvenile and legal-sized density are all at or near historical lows. The above evidence indicates that the biomass of this stock is likely to be depleted and that recruitment is likely impaired. Although management measures are in place and fishing mortality is constrained, these measures have not yet resulted in measurable improvements.

Based on the evidence provided above, the Western Australia Area 3 Fishery

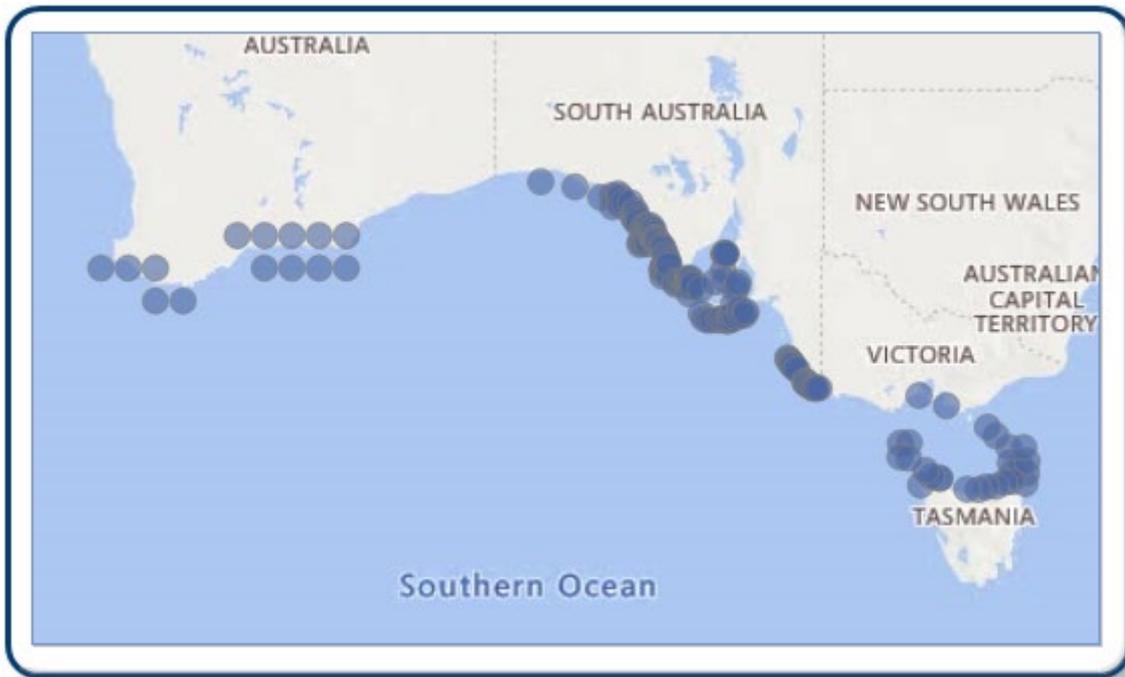
management unit is classified as a **depleted stock**.

BIOLOGY

Greenlip Abalone biology [Burnell et al. 2016, Haddon and Mundy 2016, Hart et al. 2017]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Greenlip Abalone	20 years, 200 mm SL	3–5 years, 70–120 mm SL

DISTRIBUTION



Distribution of reported commercial catch of Greenlip Abalone

TABLES

Fishing methods	South Australia	Tasmania	Victoria	Western Australia
Commercial				
Diving	✓	✓	✓	✓
Recreational				
Diving	✓	✓	✓	✓

Management Methods	South Australia	Tasmania	Victoria	Western Australia
Charter				
Bag limits			✓	

Gear restrictions			✓	
Licence			✓	
Size limit			✓	
Spatial closures			✓	
Temporal closures			✓	
Commercial				
Gear restrictions	✓		✓	
Licence	✓			
Limited entry	✓	✓	✓	✓
Seasonal closures	✓			
Size limit		✓	✓	✓
Size limits	✓			
Spatial closures			✓	✓
Total allowable catch	✓	✓	✓	✓
Recreational				
Bag limits	✓	✓	✓	✓
Gear restrictions			✓	
Licence			✓	✓
Size limit	✓	✓	✓	✓
Spatial closures			✓	
Temporal closures			✓	✓

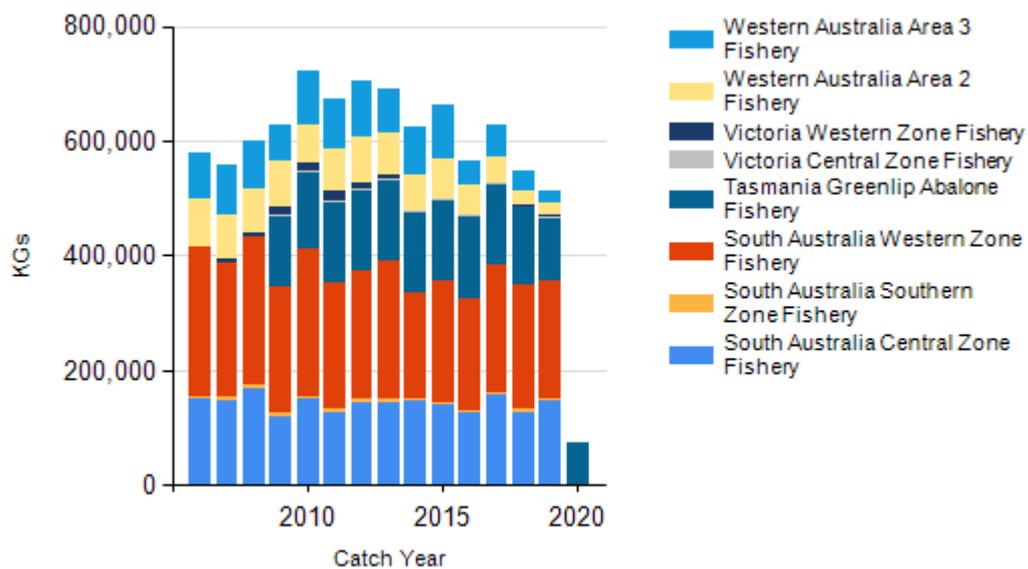
Catch	South Australia	Tasmania	Victoria	Western Australia
Commercial	356.664 t	109.194 t	5 t	42.2648 t
Indigenous	Unknown	Unknown	Unknown	Unknown
Recreational	1.9 t	2.2 t	Unknown	8 t (combined Greenlip and Brownlip Abalone in WAA2F and WAA3F)

Victoria – Indigenous (Management Methods) A person who identifies as Aboriginal or

Torres Strait Islander is exempt from the need to obtain a Victorian recreational fishing licence, provided they comply with all other rules that apply to recreational fishers, including rules on equipment, catch limits, size limits and restricted areas. Traditional (non-commercial) fishing activities that are carried out by members of a traditional owner group entity under an agreement pursuant to Victoria’s *Traditional Owner Settlement Act 2010* are also exempt from the need to hold a recreational fishing licence, subject to any conditions outlined in the agreement. Native title holders are also exempt from the need to obtain a recreational fishing licence under the provisions of the Commonwealth’s *Native Title Act 1993*.

Commonwealth – Indigenous (Management Methods) Subject to the defence that applies under Section 211 of the *Native Title Act 1993* (Cth), and the exemption from a requirement to hold a recreational fishing licence, the non-commercial take by Indigenous fishers is covered by the same arrangements as that for recreational fishing.

CATCH CHART



Commercial catch of Greenlip Abalone - note confidential catch not shown.

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