Tasmanian Abalone Council Ltd

Fishery Resource Advisory Group (FRAG)

Meeting 4/2017

Thursday October 12, 2017

IMAS, Nubeena Crescent Taroona

Minutes

Present:

Members:

Ian Cartwright (Chair), J McKibben, D Lisson, D Hansen, B Cobbing, B Ransom, T Bush, S Crocker, P Richardson, J Huddlestone, C Mundy, (IMAS), M Bradshaw (DPIPWE), J Freeman (minutes),

Observers:

A Hansen, B Amos, M Porteus, S Anning, B Lesser, T Lesser, R Searle, G Woodham, B Rex, M Gleeson, J Franklin, R Baillie, T Chadwick, G Hughes, L Tumney,

Apologies:

R Scanlon, A Gray, A Brown, J Ramsden, K Hoskin,

Welcome and opening remarks:

The Chair welcomed members and observers to the fourth meeting of the year, and outlined the main purposes of the meeting, which were to review catches, catch rates and other information for the season to date, gain an overall view of the status of the resource and provide TAC recommendations. The recommendations would be based on IMAS data, diver and other industry input and the MCDA process/

The Chair acknowledged the presence of observers, including divers, and thanked them for their time. It was emphasised that they are always welcome and their input was appreciated.

The FRAG noted that the MCDA process including the MetaRules, provides an objective way consider, and inform decisions on the TACC for 2018. This process does not, however, remove the need for industry and other input/

Adoption of agenda;

The agenda as circulated was agreed with the addition of;
Eastern Zone boundary, which was not discussed due to time constraints.

Minutes of the previous meeting:

Members agreed the minutes of the FRAG meeting held on August 15, 2017 were accepted as a true and accurate record.

Actions Arising from Previous Meeting:

Action 1. Research proposal – spawn and hand raise abalone larvae on bio-secure vessel and spray onto reefs.

Dean Lission confirmed that his is in the process of write up an AIDF proposal, which will be based on the premise that this method will be used to augment natural recruitment on heavily depleted reefs. Discussions on this strategy are to be held in conjunction with planned meetings with the CVO regarding the biosecurity risks. The cost and effectiveness is being investigated, and it was noted that similar trials have been considered in SA and in NSW.

Ongoing

Action 2. Finalise report on size limits and boundaries:

IMAS noted that the report on size limits was complete and had been circulated to FAC members. The current policy document on size limits is suggests that the LML should be L50+2 years.

IMAS and DPIPWE have looked closely at all analytical systems and modelling and come up with a recommendation for a new LML, since at 140mm only around 8% of the spawning biomass is protected on the West Coast, and this figure should be 15-20%.

The report and its outcomes have been peer reviewed with the scientific evidence suggesting that the LML should be set at L50 + 3 years.

Action 3. Progress a boundary change for the area north of Cod Bay for 2018:

Cod Bay – there is an option to fish under permit in 2018 north of Georges Bay at 132mm, which was agreed would be a sensible outcome. There was minority support for simply opening the area to commercial fishing without a permit, but it was recognised that there was logic in controlling catch by ensuring permits were issued by DPIPWE where arrangements were in place for a processor to take the fish. It was further recognised that there may be some difficulty in administering decisions on whether or not a processor will take a particular diver's fish.

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The FRAG fully supports the initiative.

Action 4. Chair to write to the Minister on the effect of Centrostephanus on the East Coast and Government funding:

The Chair has written to the Minister and is awaiting a response.

Action 5. TACL to write to the Government to develop a management plan involving all marine sectors to target the Centrostephanus issue:

Dean has written to the Minister, who has is supportive of the development of such a plan, and suggested a co-ordinated approach with a business plan in consultation with the commercial dive sector and processors.

IMAS noted that *Centrostephanus* continues to have a significant effect on the east coast and needs to be addressed, particularly since the abalone industry is continuing to address problems there while little is being done about *Centrostephanus*. IMAS is undertaking a project to look at the effect of *Centrostephanus* on the productive abalone areas with implications for all coastal fisheries both recreational and commercial, as well as the community. It was noted that experience has show that *Centrostephanus* removal allows the seaweed to recover and the return of abalone bottom. The benefits of culling have been extensively demonstrated in Tasmania and Victoria.

Significant funds to address this issue are required; it was suggested that the abalone levy of 7% returns a considerable benefit to the Government and that it was appropriate that application to apply a portion of these monies to *Centrostephanus* should be made.

Action 6. Submission re biosecurity of importation of live broodstock:

A submission on the relaxation of the ban of importation of live broodstock has gone in to the Minister, the CVO and AbFAC. The TACL does not support the importation of live broodstock and has made an extensive, well referenced submission on the matter. Industry suggest that male & female abalone broodstock can and should be collected from near the output pipe of the farm so they are the same genetic makeup and have the same disease resistance.

There have been issues in recent years with the Dunalley facility as it is not a closed loop system, larval and escapees can be flushed out of the pipes into the river.

The farm has since notified TACL they will be collecting broodstock from the local area and establishing a nursery at the Dunalley facility.

IMAS presentation of data and fisheries assessment, including additional diver/stakeholder input

The FAC considered IMAS data, diver input and applied the MCDA (with Metarules) to arrive at are commended TAC and spatial distribution of catch.

The IMAS report noted that in this and all future reports, a bias-correction is applied to geometric means in line with accepted practice in fisheries CPUE reporting. Thus means are always bias-corrected geometric means and are referred to as 'geomean'. Standardisation of CPUE is used to account for seasonal patterns in CPUE, differences among divers, and temporal changes in the frequency of 'doubling up' (two divers working from one boat). The CPUE standardisations are run at both Block and Sub-Block levels from 2000 to the current year. Standardisations were achieved using the CPUEutils package developed by Malcolm Haddon, and the base model used was;

Log(CPUE) = Year + Diver + Month + DoublingUp + %bycatch.

The approach to calculating CPUE on mixed species days has changed for this report.

- Where the bycatch species accounts for less than 25% of the daily total catch, that record is excluded from the CPUE calculations.
- Where the bycatch is greater than 25%, records are included and effort is apportioned by ratio of species catch to total catch.
- The proportion of daily catch accounted for by the target species is added to the CPUE standardisation as a continuous variable.
- All records are retained for catch totals.

Multiple Criteria Decision Analysis (MCDA) Harvest Strategy - Performance measures used in the MCDA are;

- **Target CPUE** - current (2016) standardised geomean CPUE relative to CPUE target, where the target is set at the 55th percentile of the standardised geomean annual CPUE 1992 - 2016 for each block.
- **Gradient CPUE** - regression slope of the standardised geomean CPUE over the past 4 years.
- **Rate 1** - change in standardised geomean CPUE over the past 12 months.

The default weighting of the three performance measure within the MCDA is 65:25:10 (Target : Gradient: Rate).

The Harvest Control Rule represents an objective approach to decision-making. The Harvest Strategy identifies explicit targets for i) CPUE, ii) CPUE gradient over the last four years and iii) CPUE gradient over the last year. Each spatial management unit (SMU) has its own target and HCR option '6' is to be used in 2018. Any score less than 4 or more than 6 indicated that action should be taken.

For greenlip abalone, the method of capture and extent of mixed species fishing within the greenlip fishery in any year is likely to impact the reliability of CPUE estimates. In order to account for all mixed species fishing activity throughout the assessment process we utilise the catch-weighted estimate of CPUE in mixed species fishing.

Western Zone:

Western Zone Notes; Showing an improvement in this zone

- CPUE in all blocks except Block 9 are increasing
- Fishing at depth in Western Zone Block 13 is increasing.
- Recovering block meta-rule applied to all blocks where the Harvest Strategy suggests a reduction, except for Block 9.
- 2017 catch allocation to Block 7 retained for 2018 on the basis that only one third of the allocation caught and catch increase driven strongly by change in the past 12 months.
- 2017 allocation to Block 7 retained for 2018 on the basis of uncertain effect of increasing fishing at depth as a precautionary measure.
- CPUE now above the target – IMAS will accept argument for increase or, shifting of catch from Block 9 to Block 13.
- Overall change 4% - MetaRules say if there is a change of less than 5% then no change is recommended.

Block 6 – 30% caught – status quo
Block 7 – the catch is up; be precautionary - status quo
Block 8 – little catch to date - status quo
Block 9 – 50% caught with no sign of improvement and issues with weather. The MCDA recommends a 20t reduction.
Block 10 – Catch rates increasing
Block 11 – 70% of catch taken – status quo
Block 12 – 70% of catch taken; the catch rate is improving
Block 13 – increasing rapidly, the proportion of fishing at depth is increasing

The management plan allows DPIPWE to close blocks quickly to lower the chance of overruns.

MCDA - IMAS will reduce the TACC in Block 9 and re-distribute the TACC to other Blocks.

FRAG Comments;
Suggest a reduction between Blocks 8 -12 of 85t – this is a conservative approach to reduce the risk. The 55percentile was chosen as a stock rebuilding approach.

The FRAG recommends that the 2018 TACC for the Western Zone be maintained at 717t

Eastern Zone:

Eastern Zone Notes;

- Block 13 only part of Eastern Zone fishery where the CPUE is increasing, and we can assume rebuilding is occurring.
- CPUE in Blocks 14, 16 and 29 is stable at a low level – no rebuilding.
- Blocks 17 & 19 were not resilient to increased fishing pressure during.
- Continued decline in Block 20 over 4 years with a stable catch.
- Block 21 has returned sharply from the low point in 2016, but still below 2015.
- CPUE in Blocks 22, 23, 24, 27, 28, and 30 lowest since 1992.
- Very low catch to date in Blocks with very low CPUE (eg. 22, 23, 24)
- Catch for small producing blocks are transferred to 2018 without change.
- Block 13 overrun of 61 tonnes in 2016 to ease pressure on blocks affected by heat wave and storms. Expectation this will occur to a similar magnitude in 2017. Consecutive overruns of this magnitude are unlikely to be sustainable. IMAS recommends reducing Block 13 below MCDA calculation by a further 50 tonnes in 2018.

IMAS suggest a reduction on the East Coast; there have been several major weather events that have had significant effects on the stock.

Block 13 – catch up, slowly trending up; overall positive
Block 14, 16 & 29 – stable
Block 16 – stable
Block 17 – stable, catch overrun in 2016,
Block 19 – overrun the cap; minimal catch
Block 20 – trending down
Block 21 – affected by the heatwave event
Block 22 – stable catch rate, declining catch,
Block 23 – declining catch and catch rate
Block 24 – declining
Block 27 – declining
Block 28 – minimal catch
Block 29 – declining, below target
Block 30 – declining, low catch rate
Block 31 - declining

FRAG Comments:

Centrostephanus is having a long term impact with reduced recruitment.

Suggest a quota of 217t from Blocks 13 to 21.

The Actaeons is the most productive area and must be preserved.

Propose the quota on the Actaeons @ 192t; be conservative and leave the rest of the East Coast to recover.

The MCDA suggests 366.7t – to move outside this is not good management of the fishery.

Block 13C - minimal catch
Block 13D - lifting sharply
Block 13E - catch consistent average 180t
Block 14A - declining

To set the TACC outside of the MCDA the decision must be defendable and well documented to include extenuating events. Ie. Centrostephanus incursion, warm water events, heat wave etc

The juvenile collectors are all showing positive signs of increased juveniles and habitat, and a good representation of how the data could be used.

Set the TACC at 172.8t for Actaeons Block 13; the divers are seeing juveniles on the bottom, which is a positive sign with room for optimism if not fished too hard. Close the rest of the blocks when the cap is reached.

There was a long discussion on the level of TACC reduction and how it is applied.

IMAS suggest that a 50t overrun should be taken into consideration with the TACC be set at 121t.

IMAS agree that the Actaeons can take 192t, but acknowledge that at this rate may not be restorative.

Actaeons = 171t
Cape Pillar south – Blocks 21 to 13 = 269t
Cape Pillar north – Blocks 22 to 31 = 35t

In summary it was agreed that the priority for the Eastern Zone is to rebuild the stock and undertake measures to contain or eradicate Centrostephanus.

The FRAG recommends that the 2018 TACC for the Eastern Zone be 294t, a reduction of 130.5t

Northern Zone:

Northern Zone Notes

- Primary Northern Zone fishing blocks (3, 5, 49 and 31) are declining.
- Usual amount of fishing at depth in Block 3 in early 2016 and 2017 masking the state of the fishery.
- Less than 3t of the 13.9t caught from Block 49 is from Hunter Island, with over 10t harvested from Albatross – leading to an overestimate of the of the Block 49 CPUE at the is time.
- CPUE in Block 5 declines again in 2017. Expect low levels of recruitment over the next 6 to 8years given decreasing catch and decreasing CPUE over the past 8 years.
- Intense fishing pressure in the North-East Blocks 31 ad 39 create some uncertainty of status. Assume some level pf selective fishing also occurring? IMAS recommends 1 more year of watching brief. If trends downwards, Harvest Strategy recommendations will be followed in 2018.

Block 39 - stable
Block 48 – declining
Block 49 – mostly from Hunter and Albatross Islands, declining
Block 5A-C – declining
Block 1 – reduction of TACC
Block 2 – status quo
Block 3 – change in dive depth, diving dominant in deeper water.
Block 4 - stable

FRAG Comments;

Block 3 – there is no stock in shallow waters, which are unlikely to recover in the near future. The MCDA is not recording correctly.

The dive profile has changed from divers who live on the island and know the territory vs motherboat fishing.

MCDA except Block 3 – agreed

Suggest Blocks 1 - 4 = 30t

The FRAG recommends that the 2018 TACC for the Northern Zone be 115.5, a reduction of 31.2t

Central West:

Central West Zone Notes;

- CPUE continues to decline despite 4 consecutive TACC reductions.
- Adaptive Harvest Strategy reference period means the LRP is reset with each new low in this fishery.
- As part of the proposed north-west boundary changes, IMAS recommends the following:

1. Sub-block 6B be rolled into Western Zone with zero catch (ie. open to fishing but with no pressure to fish).
2. Sub-blocks 6A-B be rolled into the Northern Zone with zero catch. Cap set for Block 5 would apply to 5A-D and 6A-B.

There is a boundary change in 2018.

Block 6A-C – historic low, the MCDA is not working.
Block 6A, B & C will be in Northern Zone,
Blocks 6D will be in the Western Zone.

The new map has been distributed in the 'Public Exhibition of Draft management Plan for the Abalone Fishery', 'Summary of Proposed changes'.

The Marine Policing Branch looked at the boundary changes and recommend the proposed change of Block 6C boundary into the Northern zone – ref. AbFAC #3.

The TACL Board to discuss and make a decision on the boundary change.

FRAG comments;
Discussion on Block 6C into Northern or Western Zone?
No catch be allocated to Blocks 6A-C – agreed by FRAG.

Central West is unique, the control rule is working, adaptive rule – change the predations of the metarule. One diver objected strongly that Block 5 cap is not added to the Northern Zone.

The FRAG agreed that while the final decision on boundaries had yet to be placed in regulation, there would not additional quota added to the SMUs north or south of the current Central Western Zone. It was noted here could still be fishing (with caps) in the former Central Western Zone.

Bass Strait;

Bass Strait Zone notes:

- Block 33 CPUE stable above the target
- Block 38 CPUE declining. Presence of Centrostephanus a concern, along with 8 years of catches at the new low LML of 114mm. Reduced recruitment from lower biomass following LML change will (eg. Pre vs post 2010) begin to influence the fishery shortly (based on 7 years from biological recruitment to entering the fishery).
- All HS recommendations followed other than Block 38.

Block 32 – stable – no change
Block 33 – stable – no change
Block 37 – stable – no change
Block 38 – dropped away, Centrostephanus incursion, size limit changes, recruitment may reduce the fishing in future.
Block 41 – decrease
Block 43 – 50% caught - status quo
Block 51 – status quo
Block 53 - increase

FRAG Comments:
A new Meta Rule is suggested for 2018
Every zone needs a re-build to avoid 'clearfelling'

The FRAG recommends that the 2018 TACC for the Bass Strait Zone be maintained at 77t

Greenlip Zone;

Greenlip Zone Notes;

- North East cap reached in 4 days – assume stocks must be healthy to achieve thirds. Watching brief remains on this area for long term impacts of pulse fishing. 2017 catch retained for 2018.
- Furneaux Group CPUE stable and above the target.
- King Island greenlip fishery suggests decline over the past 4 years. This trend is coincident with a change in fishing season, with the majority of catch taken in Q3.
- North West is in decline.
- Perkins Bay is subject to selective fishing, distorting CPUE trends and status. IMAS accept retaining 2017 catch cap, conditional on a time-frame at which selective fishing has stabilised and will no longer affect the CPUE.
- Central North catch remains low as per usual. Allocation of catch for this area to be set to zero for 2018. Alternatively, Central North greenlip to be included as part of the proposed reverse cap arrangements for 2018.

King Island – stable, overrun
North West not inc Perkins – stable
Perkins Bay – declining sharply, selective fishing
North East – close to target
Furneaux group – above the target
Central North – not close to target, challenge to catch the cap

The FRAG recommends and agrees the 2017 TACC; TOTAL Greenlip Zone = 133t. A decrease of 7t

FRAG Comments;

Selective fishing – IMAS is looking for input from Industry on the how selective fishing can be overcome.

Suggest to close Perkins Bay and Furneaux at the cap to force fishing into Central North.

Meeting closed 4.30pm

Action List FRAG #4 2017:

Action	Responsible Member	Task	Progress
1.	Dean Lisson/IMAS	Research proposal – spawn and hand raise larval on bio-secure vessel	Ongoing
2.	IMAS	Finalise report on Size limit and boundary paper	Draft policy completed
3	DPIPWE	Boundary change north of Cod Bay	Completed
4.	Ian Cartwright	Write to Minister re Government funding to address Centrostephanus incursion	Completed, waiting a response
6.	Dean Lisson	Write to Minister re Government funding to address Centrostephanus incursion	Completed, business plan to be submitted
7.	Dean Lisson	Submission re biosecurity of importation of live broodstock	Completed

Blocks - Area	TAC 2018	KGs/Unit
Bass Strait Blacklip		
Blocks 32-38 Furneaux Group	42.8	
Blocks50-56 Bass Strait Islands	27.2	
Blocks 42-46 Central North	7.0	
Total Bass Strait TAC	**77.0**	
Central Western Zone		
Blocks 6A-6C Couta Rocks		
Total Central Western Zone TAC	**00**	
Eastern Zone		
Blocks 13C, -14 E. Actaeons	172.8	
Blocks 14A and 14B. Lower Huon Channel, Huon to Southport Island, inc Dover, Southport	26.6	
Blocks 14C-16 Bruny Island	18.4	
Blocks 17-21 Hobart to Tasman Island inc Nubeena	51.2	
Block 22	3.8	
Blocks 23 and 24 Deep Glen Bay to Triabunna, inc Maria	10.1	
Blocks 25-29A Freycinet and Bicheno	3.5	
Blocks 29B, 29C, 29D and 30A North East	7.2	
Total Eastern Zone TAC	**293.4**	**84**
Greenlip		
Blocks 32-38 Furneaux	47.0	
Blocks 1-4 King Island	18.0	
North West not Perkins Bay	13.4	
Block 48A Perkins Bay	21.2	
Blocks 31,39,40 North East	25.5	
Central North	8.0	
Total Greenlip TAC	**133.1**	**38**
Northern Zone		
Blocks 5A-5C	31.9	
Blocks 47-48 NW not Block 5	4.5	
Blocks 1-4 King Island	30.0	
Blocks 31B, 39 and 40 North East	48.9	
Total Northern Zone TAC	**115.3**	**33**
Western Zone		
Blocks 6D, 7 and 8. Granville Harbour, Sandy Cape	93.0	
Block 9 South of Strahan	84.8	
Blocks 10, 11 and 12A. South West	501.0	
Blocks 12B-13B South Coast	38.0	
Total Western Zone TAC	**716.8**	**33**
2018 TAC TOTAL	**1335.5t**	**381kg/unit**

Eastern Zone

Block No	Catch 2016	Catch Targ	IMAS 2018	FRAG 2018
13	253	192	121	172.8
14	63.8	33.3	26.6	26.6
15	0.1	0	0	0.0
16	23.6	23	18.4	18.4
17	22.7	10	7.5	7.5
18	0	0	0	0.0
19	3.8	2	1.7	1.7
20	30.8	30	24	24.0
21	17.9	20	18	18.0
22	14.2	20	15	3.8
23	16.8	19.6	14.7	3.7
24	20.2	34.2	25.7	6.4
27	14.8	15.2	11.4	2.9
28	3.4	3	2.2	0.6
29	17.2	20	15	3.8
30	2.8	6	1.5	0.4
31	15	16.2	12.1	3.0
Total	520	444.5	314.9	293.4

Central West Zone

Block No	Catch 2016	Catch Targ	IMAS 2018	FRAG 2018
6	42	35	0	0
Total	42	35	0	0

Western Zone

Block No	Catch 2016	Catch Targ	IMAS 2018	FRAG 2018rev
6	19.3	20	20	23
7	30.9	51	51	54
8	11.5	13	13	16
9	61.5	106	84.8	84.8
10	77.3	80	80	83
11	168	160	160	163
12	297.2	252	252	255
13	34.2	35	35	38
Total	**700.1**	**717**	**695.8**	**716.8**

Northern Zone

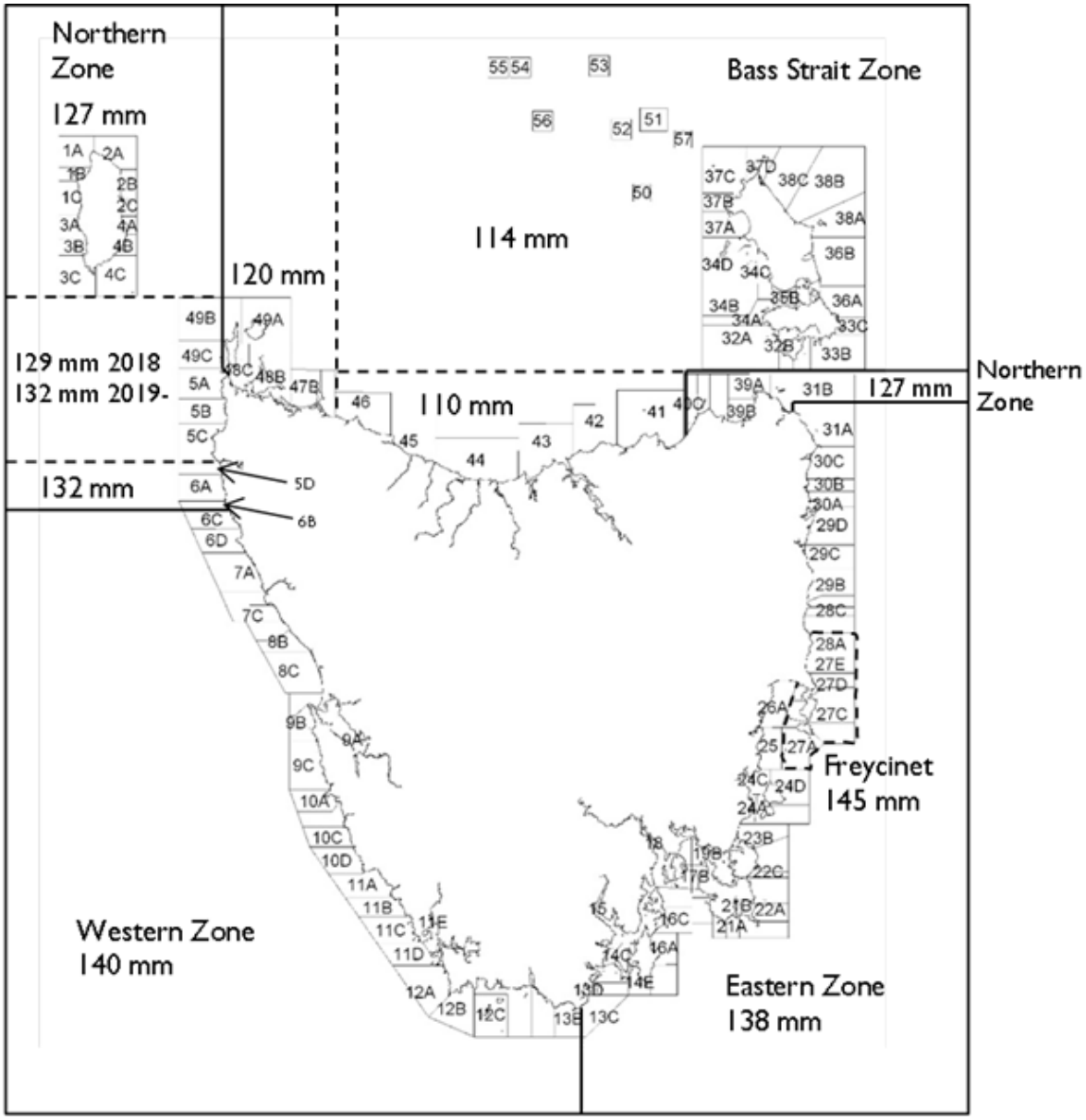
Block No	Catch 2016	Catch Targ	IMAS 2018	FRAG 2018Dev	FRAG 2018
1	8.3	9.6	9.6	9.6	6
2	2.6	0	0	0	0
3	43.9	32	25.6	25.6	20
4	7.7	4	4	4	4
5	56.2	42.5	31.9	31.9	31.9
31	26.1	22.5	22.5	22.5	22.5
39	4.2	5.3	5.3	5.3	5.3
47	0.1	0	0	0	0
48	7.3	6	4.5	4.5	4.5
49	31.8	26.4	21.1	21.1	21.1
Total	188.1	148.3	124.5		115.3

Bass Strait Zone

Block No	Catch 2016	Catch Targ	IMAS 2018	FRAG 2018
32	0.4	1	1.1	1.1
33	20.2	19.9	19.9	19.9
34	0.1	1		1
35	0.1	1		1
36	4.1	2		2
37	1.7	2	2	2
38	18.4	17.6	15.8	15.8
41	0.8	0	0	0
42	1.8	0		0
43	5.2	5	5	5
44	0.4	1		1
45	0.1	1		1
51	11.8	5.5	5.5	5.5
53	9.8	18	20.7	19.7
54		2		2
56		0		0
Total	74.8	77	70	77

Greenlip Zone

Block No	Catch 2016	Catch Targ	IMAS 2018	FRAG 2018
Bass Strait	0.2	0.5	0	0
Central North	0.1	8	8	8
Furneaux	42.5	47	47	47
King Island	23.8	20	16	18
North East	34.5	25.5	25.5	25.5
North West	21.4	13.6	13.4	13.4
Perkins Bay	16.4	21.2	21.2	21.2
Total	188.1	140	131.1	133.1


Northern Zone
127 mm
Bass Strait Zone
114 mm
120 mm
129 mm 2018
132 mm 2019-
110 mm
Northern Zone
127 mm
132 mm
Freycinet
145 mm
Western Zone
140 mm
Eastern Zone
138 mm