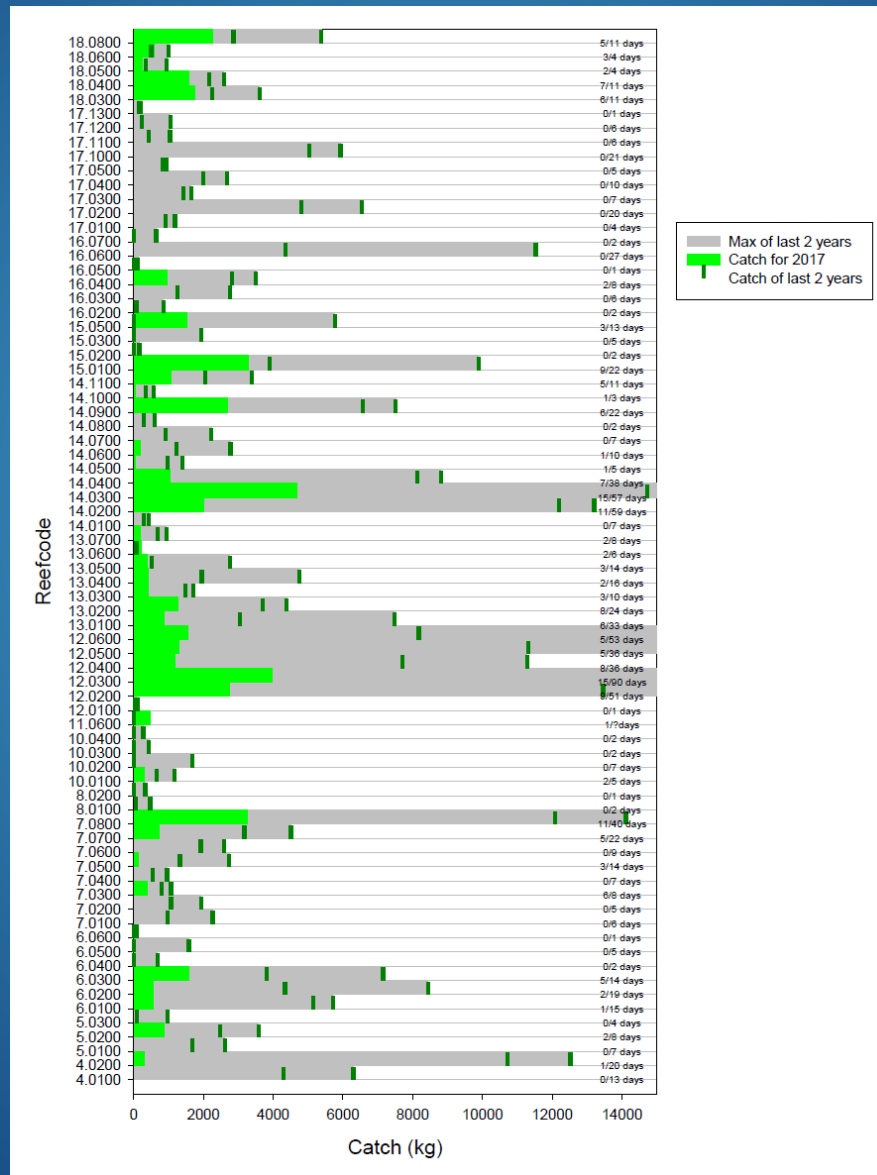


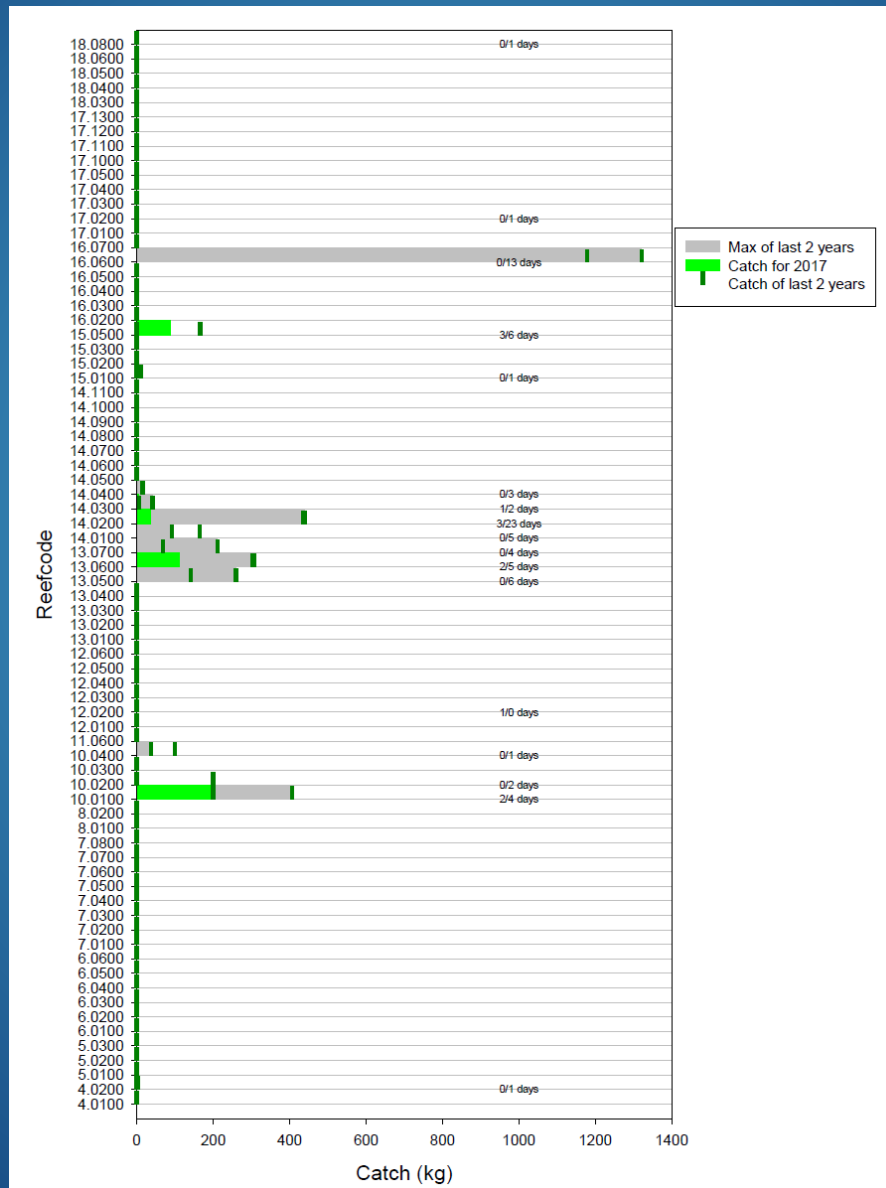
# CZ FRAG - Summary of presentation

- Catch distribution
  - SMU – Fisherweb
  - Reefcode
- Catch rate - Reefcode
- VFA survey - SMU
- GPS and depth loggers - coverage
- Measuring loggers – coverage and PI
  - Divers
  - Processors
- Harvest Strategy indicators

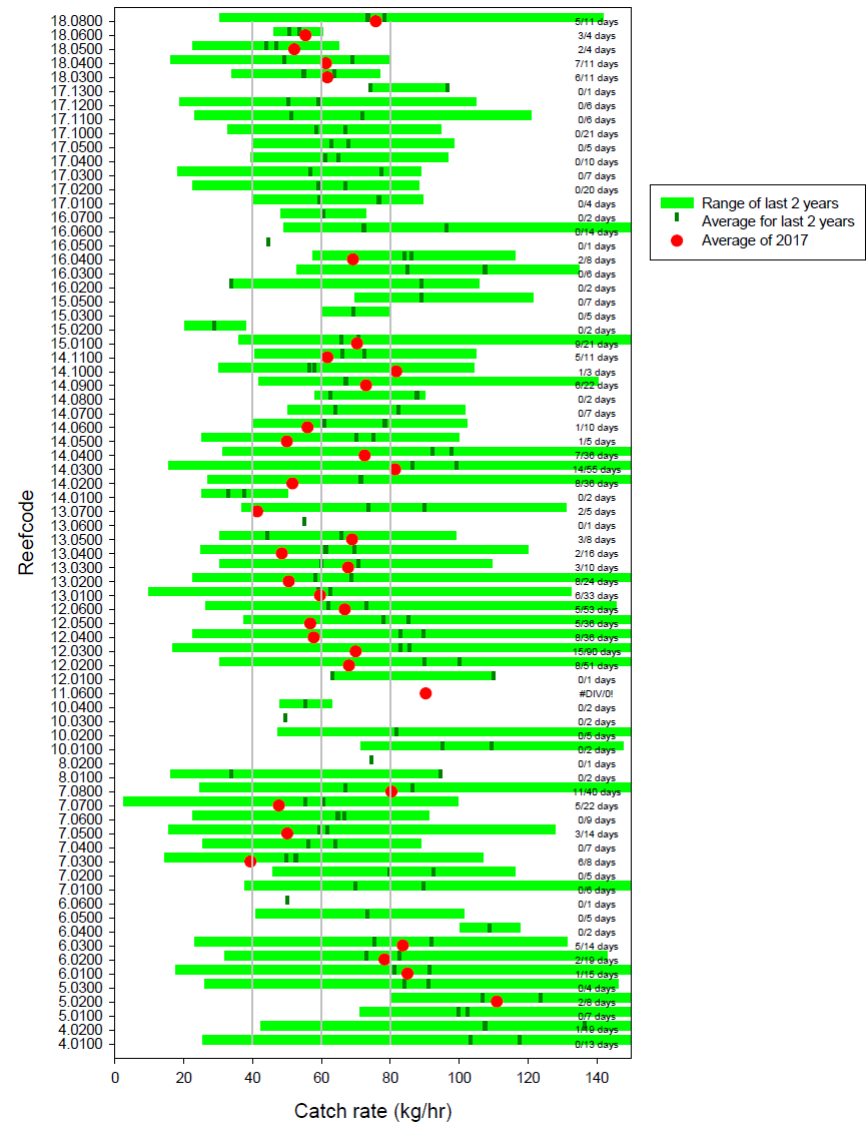
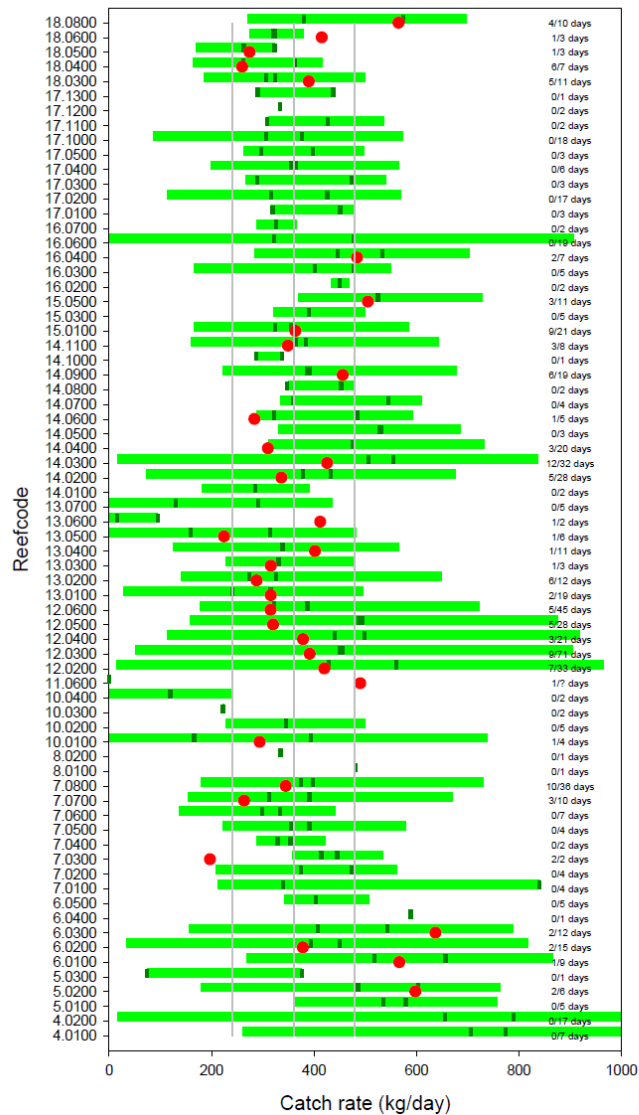
# Catch distribution – Reefcode, blacks



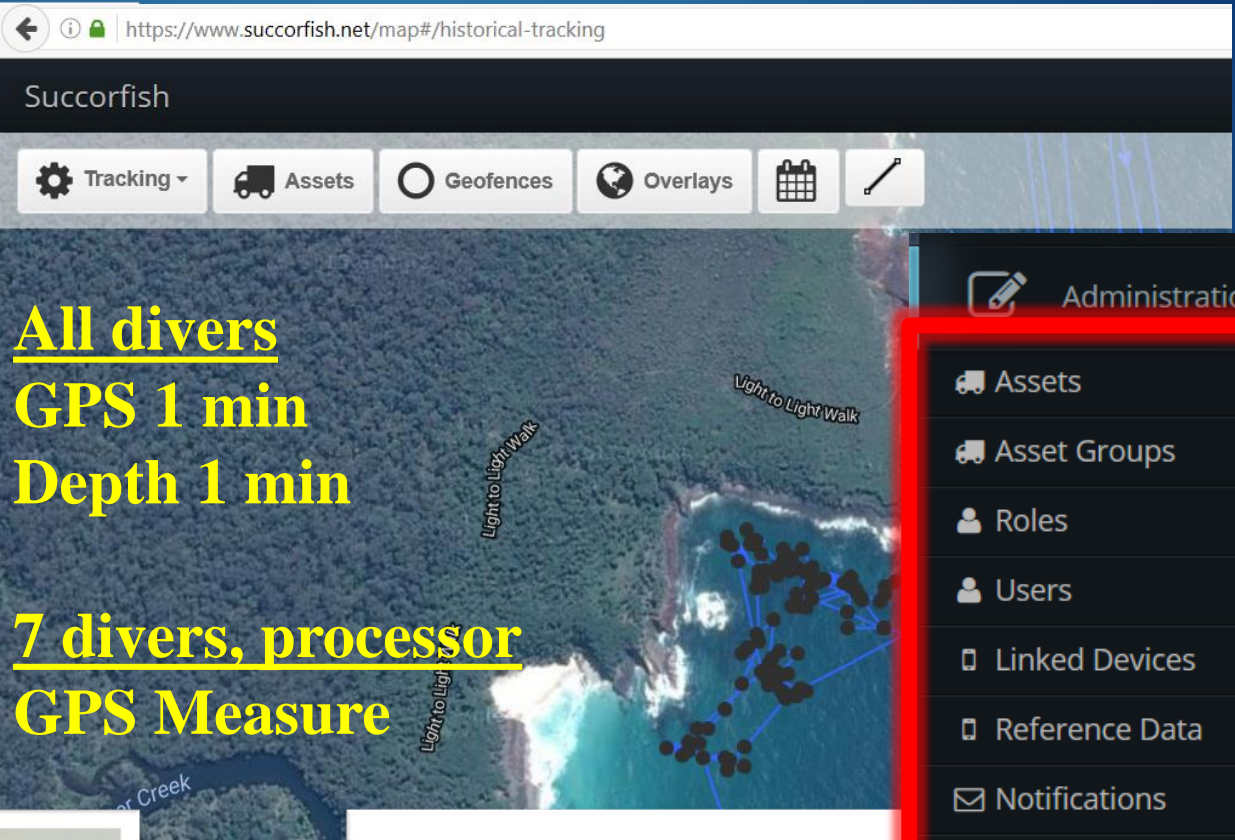
# Catch distribution – Reefcode, greens



# Catch rate – Reefcode by day and hour



# GPS Loggers

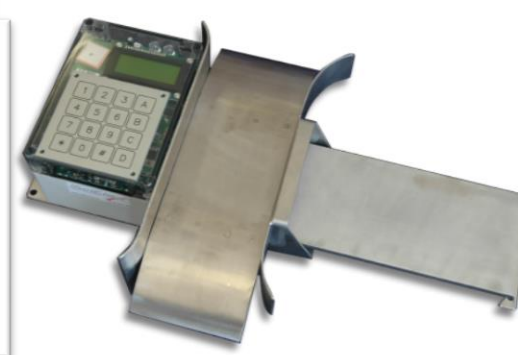
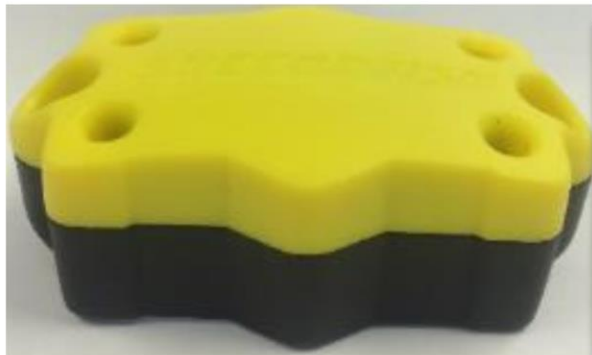


All divers  
GPS 1 min  
Depth 1 min

7 divers, processor  
GPS Measure

Administration ▾

- Assets
- Asset Groups
- Roles
- Users
- Linked Devices
- Reference Data
- Notifications
- Email Templates
- Alerts
- Data Export
- Catch App ▾



# Logger coverage SMU, April-Sept 2017

Table 1. GPS logger coverage summarised by SMU within Reefcode area until 3 September 2017. Note, diving effort can not be confirmed until download and linking of depth loggers.

SMU	Days	Hours	First date	Last date
ShipW	6	41.5	18/05/2017	2/09/2017
Otways	26	147.7	6/04/2017	2/09/2017
SurfC	4	8.1	18/05/2017	10/08/2017
PPBay	21	13.3	23/04/2017	2/09/2017
BackBeaches	16	166.4	5/05/2017	2/09/2017
Flinders	28	125.1	4/04/2017	2/09/2017
Phillip Is	22	81.7	5/04/2017	31/08/2017
Kilkunda	13	52.5	6/05/2017	14/08/2017
Liptrap	6	2.8	5/04/2017	2/09/2017
PromW	6	29.7	3/08/2017	2/09/2017
PromE	19	104.3	18/04/2017	31/08/2017
Cliffys	5	23.8	23/04/2017	28/06/2017

# Logger coverage SMU, April-Sept 2017

Table 2. Logbook catch data, and matching GPS logger coverage, summarised by SMU within Reefcode area until 30 June 2017. Note, diving effort can not be confirmed until download and linking of depth loggers.

SMU	Catch data				Logger data		
	Days	Hours	First date	Last Date	Days	First date	Last date
ShipW	2	10.0	18/05/2017	22/05/2017	2	18/05/2017	22/05/2017
Otways	20	100.3	5/04/2017	14/06/2017	13	4/05/2017	14/06/2017
SurfC	1	6.2	4/06/2017	4/06/2017	1	4/06/2017	4/06/2017
PPBay	1	5.4	22/06/2017	22/06/2017	1	22/06/2017	22/06/2017
BackBeaches	24	137.7	5/04/2017	22/05/2017	15	5/05/2017	22/05/2017
Flinders	17	89.5	4/04/2017	28/06/2017	10	4/04/2017	28/06/2017
Phillip Is	30	167.3	5/04/2017	28/06/2017	5	5/04/2017	23/05/2017
Kilkunda	12	66.5	6/04/2017	23/05/2017	4	6/05/2017	17/05/2017
Liptrap	2	14.0	5/04/2017	6/04/2017	1	5/04/2017	5/04/2017
PromW	0	0					
PromE	13	69.2	2/04/2017	29/06/2017	12	18/04/2017	29/06/2017
Cliffys	4	27.0	24/04/2017	28/06/2017	4	24/04/2017	28/06/2017
Total	126				68		

# Logger measuring SMU, 2014-2017

Table 3. Abalone measured between 2014 and 2017 fishing period by Diver and SMU. CODE refers to individual measuring loggers.

CODE	NAME	FP	SMU	N abs	N Days	First date	Last date
CZ013		2014	Flinders	8056	6	1/04/2014	10/06/2014
CZ022		2014	Flinders	2098	3	1/04/2014	26/05/2014
CZ013		2014	BackBeaches	9442	7	9/04/2014	22/10/2014
CZ022		2014	BackBeaches	1367	2	10/04/2014	30/05/2014
CZ013		2014	PromE	4040	4	8/10/2014	10/11/2014
CZ013		2014	PromW	3478	3	10/10/2014	5/12/2014
CZ013		2014	Liptrap	5878	4	25/10/2014	3/12/2014
CZ013		2014	ShipW	1576	1	13/11/2014	13/11/2014
CZ013		2016	BackBeaches	18236	23	19/08/2016	14/03/2017
CZ013		2016	PromW	3769	6	23/09/2016	8/03/2017
CZ013		2016	Liptrap	16334	17	16/10/2016	13/03/2017
CZ013		2016	PromE	2384	2	17/10/2016	18/10/2016
CZ013		2016	Phillip Is	1174	2	10/11/2016	11/11/2016
CZ013		2016	Flinders	4067	5	11/11/2016	9/02/2017
CZ013		2016	ShipW	6344	6	5/01/2017	11/02/2017
CZ0003		2017	PromE	1765	1	2/04/2017	2/04/2017
CZ0007		2017	Liptrap	3920	2	5/04/2017	6/04/2017
CZ0008		2017	Phillip Is	13280	8	8/04/2017	22/05/2017
CS0002		2017	Cliffys	7462	4	24/04/2017	28/06/2017
CS0002		2017	PromE	4010	3	25/04/2017	29/06/2017
CZ0004		2017	PromE	2112	2	30/04/2017	1/05/2017
CZ0008		2017	Flinders	1379	1	1/05/2017	1/05/2017
CS0002		2017	Otways	4086	5	4/05/2017	15/05/2017
CZ0004		2017	Otways	2877	3	5/05/2017	22/05/2017
CZ0008		2017	Kilkunda	5259	3	5/05/2017	23/05/2017
CZ0005		2017	BackBeaches	3262	2	18/05/2017	22/05/2017
CZ0005		2017	Flinders	1333	3	18/05/2017	14/06/2017
CZ0007		2017	Otways	4902	3	20/05/2017	22/05/2017
CS0002		2017	BackBeaches	1430	1	22/05/2017	22/05/2017
CZ0005		2017	PPBay	1917	1	22/06/2017	22/06/2017

# Logger measuring SMU, 2014-2017

Table 4. Sample size and average length (mm) of abalone measured between 2014 fishing period and June 2017 by SMU. Sample size shows number of abalone measured, with days of measuring shown in brackets.

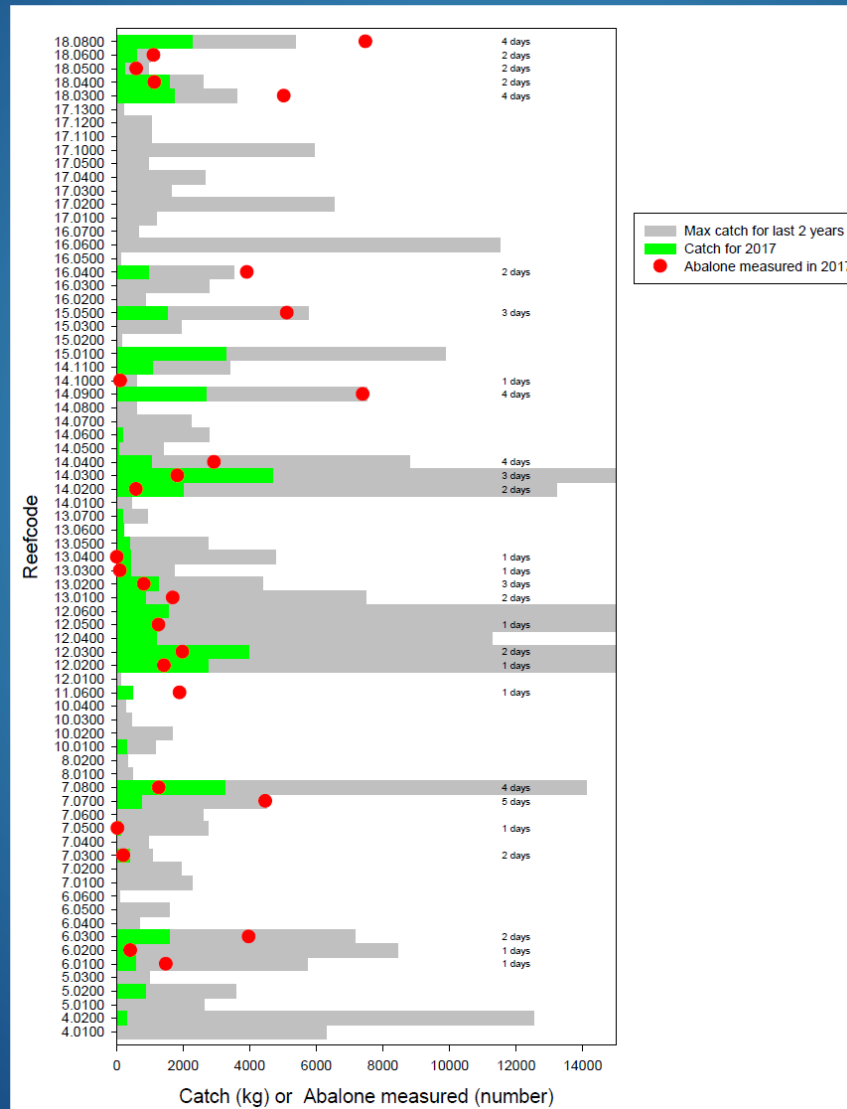
	Sample size			Average length		
	2014	2016	2017	2014	2016	2017
ShipW	1576 (1)	6344 (6)		131.1	134.6	
Otways			11870 (12)			131.6
SurfC						
PPBay			1917 (1)			114.3
BackBeaches	10809 (9)	18236 (23)	4692 (3)	123.4	126.4	125.1
Flinders	10154 (9)	4067 (5)	2712 (4)	115.6	116.9	118.1
Phillip Is		1174 (2)	13280 (8)		118.1	121.6
Kilkunda			5259 (3)			122.0
Liptrap	5878 (4)	16334 (17)	3920 (2)	114.9	118.7	111.8
PromW	3478 (3)	3769 (6)		122.0	126.7	
PromE	4040 (4)	2384 (2)	7887 (6)	116.2	116.4	120.1
Cliffys			7494 (5)			122.2
Outside		124 (3)	157 (4)			
Total	35935 (30)	52432 (64)	59188 (48)			

# Logger measuring SMU, 2001-2007

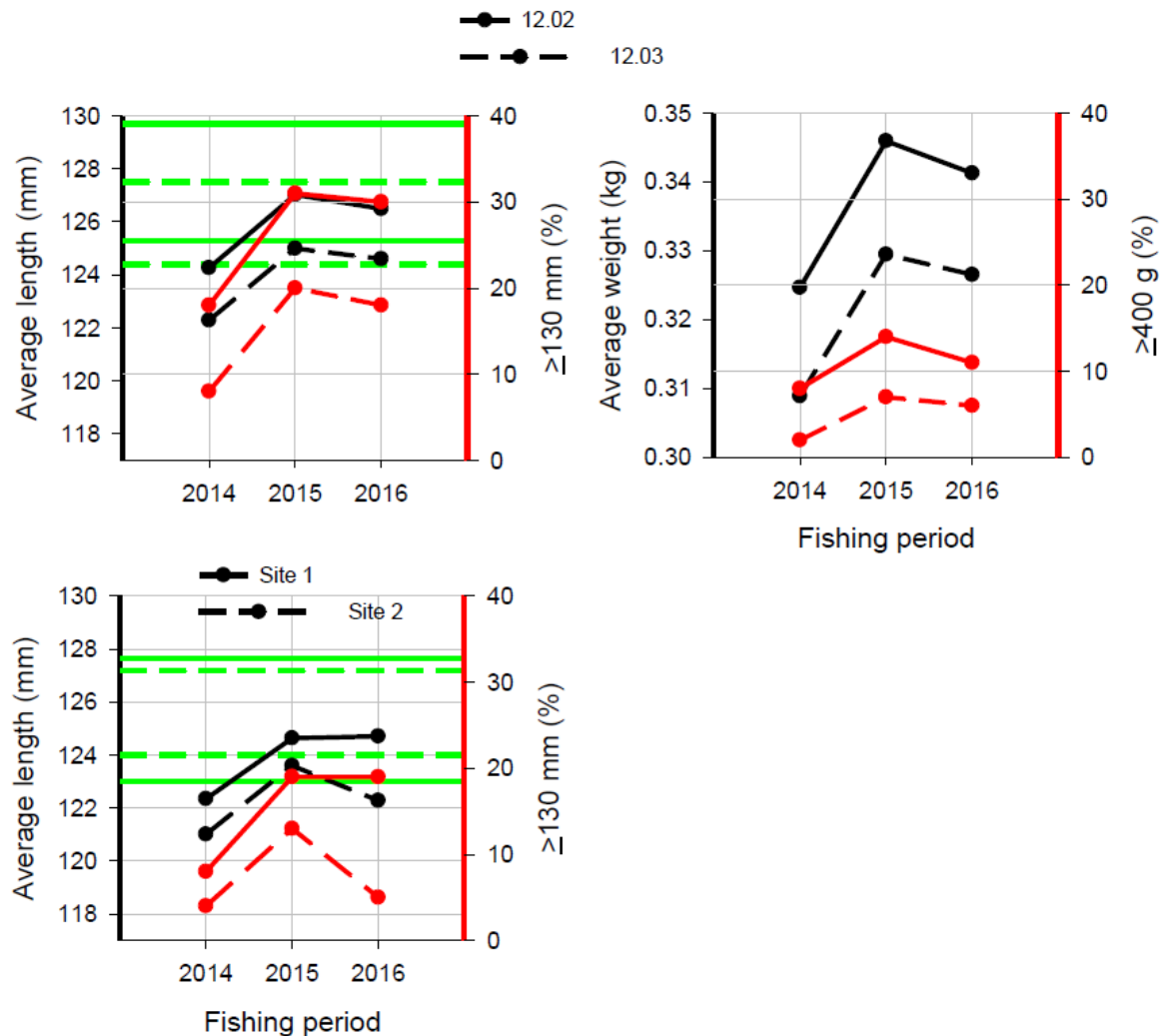
Table 5. Abalone measured between 2001 and 2007 fishing period by SMU.

	2001	2002	2003	2004	2005	2006	2007
ShipW		8808 (6)	2907 (2)	5473 (6)	9498 (6)	10028 (7)	
Otways		31217 (11)	12705 (14)	10916 (16)	20428 (20)	10905 (11)	
SurfC		854 (3)		498 (2)	1482 (4)	2406 (3)	
PPBay	1570 (1)	20093 (13)	15732 (12)	25114 (17)	23949 (18)	49457 (29)	
BackBeach		50161 (29)	6743 (12)	42749 (31)	50663 (34)	47972 (40)	
Flinders		83505 (41)	39496 (27)	43616 (35)	44586 (38)	51697 (47)	
Phillip Is		65187 (30)	23440 (22)	28216 (24)	19408 (20)	36593 (39)	
Kilkunda		33334 (17)	10567 (8)	8631 (8)	614 (3)	13699 (16)	
Liptrap		2686 (2)	8971 (6)	12494 (4)	4848 (3)	30700 (36)	
PromW		10960 (10)	3363 (5)	17458 (11)	3581 (7)	11778 (12)	1042 (1)
PromE		2049 (3)	6217 (4)		2240 (2)	6720 (8)	
Cliffys			1992 (1)	1159 (2)	2145 (2)	945 (2)	
Outside		27415 (51)	2558 (36)	4656 (40)	3890 (37)	3787 (45)	

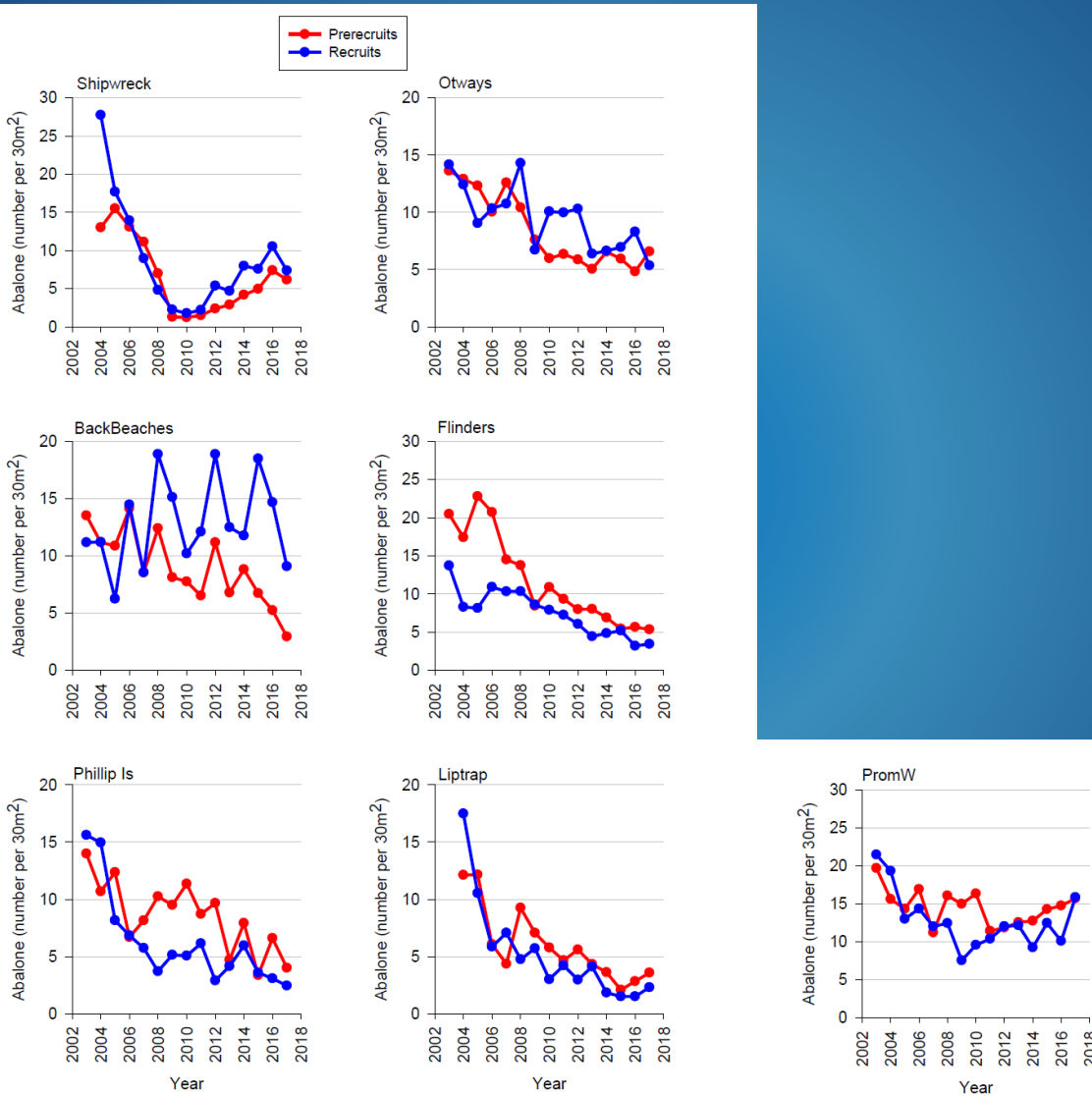
# Logger measuring v catch 2017



# Logger measuring PI, 2014-2017



# VFA survey SMU, 2003-2017



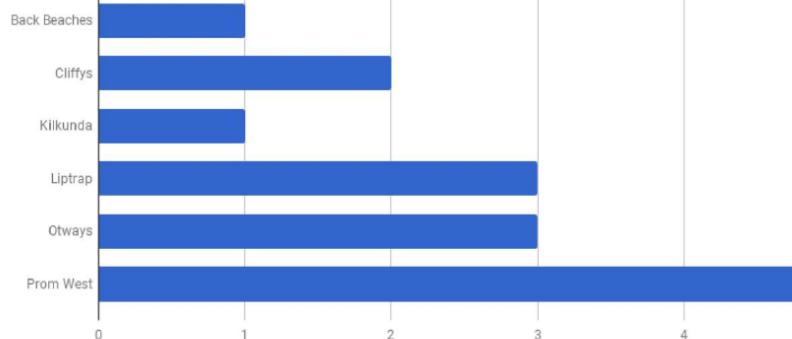
# Diver survey coverage

Diver Observation Survey Report – Victoria Central Zone – as at 18<sup>th</sup> September 2017

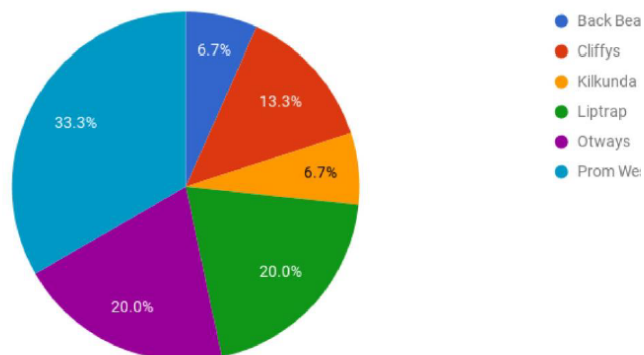
## Total Responses BY SMU

SMUS SELECTED	RESPONSES
PFN	Number of surveys completed
Back Beaches	1
Cliffys	2
Kilkunda	1
Liptrap	3
Otways	3
Prom West	5

Number of surveys completed



Number of surveys completed



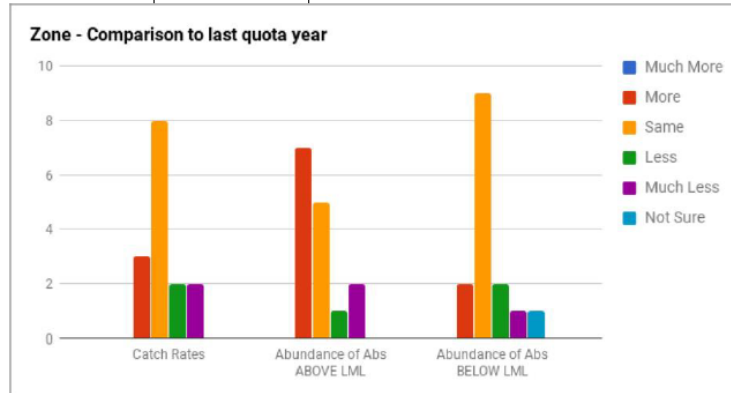
REEFS SELECTED	RESPONSES
PFN	Number of surveys completed
12.05 Gunnamatta	1
15.01 San Remo	1
16.04 Cape Liptrap E	2
16.06 Waratah Reef	1
17.01 Shellback Island	1
17.02 Tongue Point	2
17.03 Norman Island	1
17.04 Leonard Point	1
18.08 Seal Island Gro	2
6.01 Moonlight Head	1
6.03 Rotten Point	2

# Diver survey PI

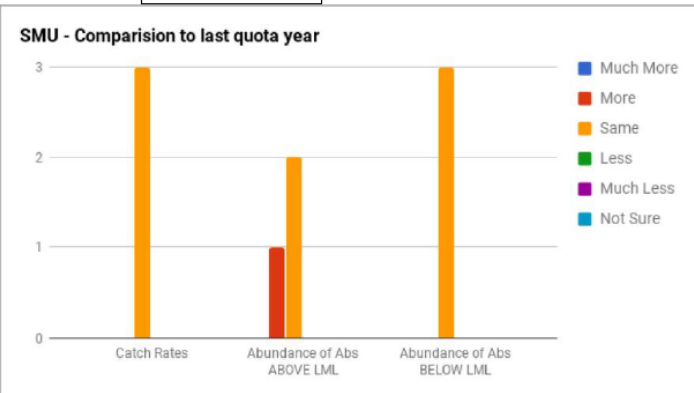
Diver Observation Survey Report – Victoria Central Zone – as at 18<sup>th</sup> September 2017

## Compared to last quota year

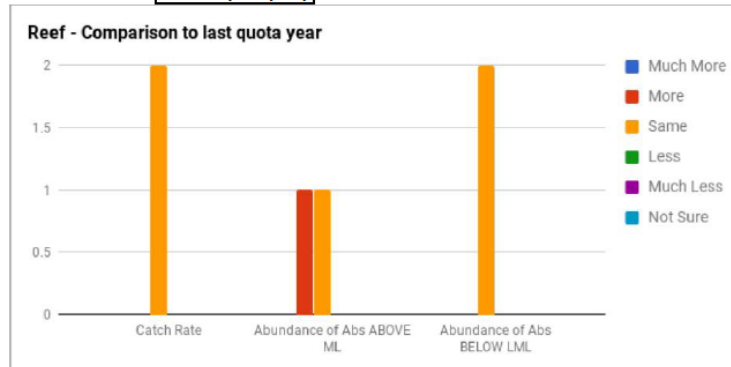
Zone **Central Zone** Selected: SMU Selected:



Liptrap



Reef Selected: **16.04 Cape Liptrap**

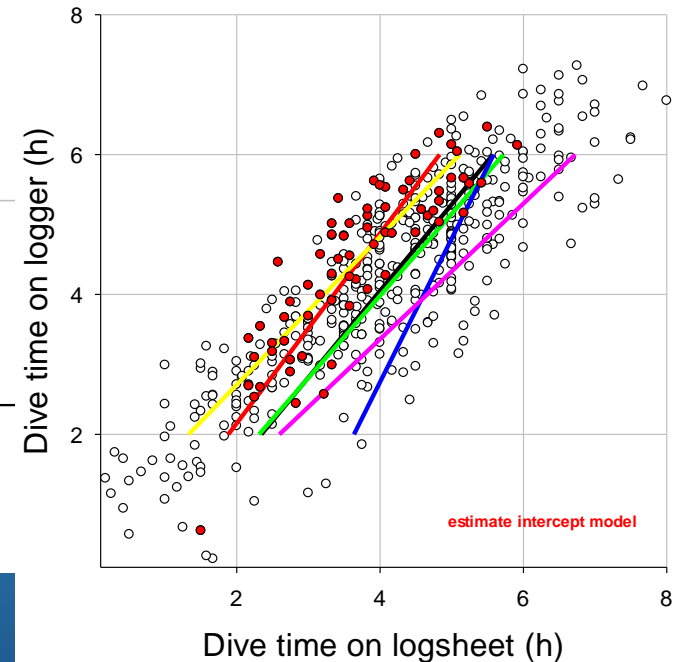
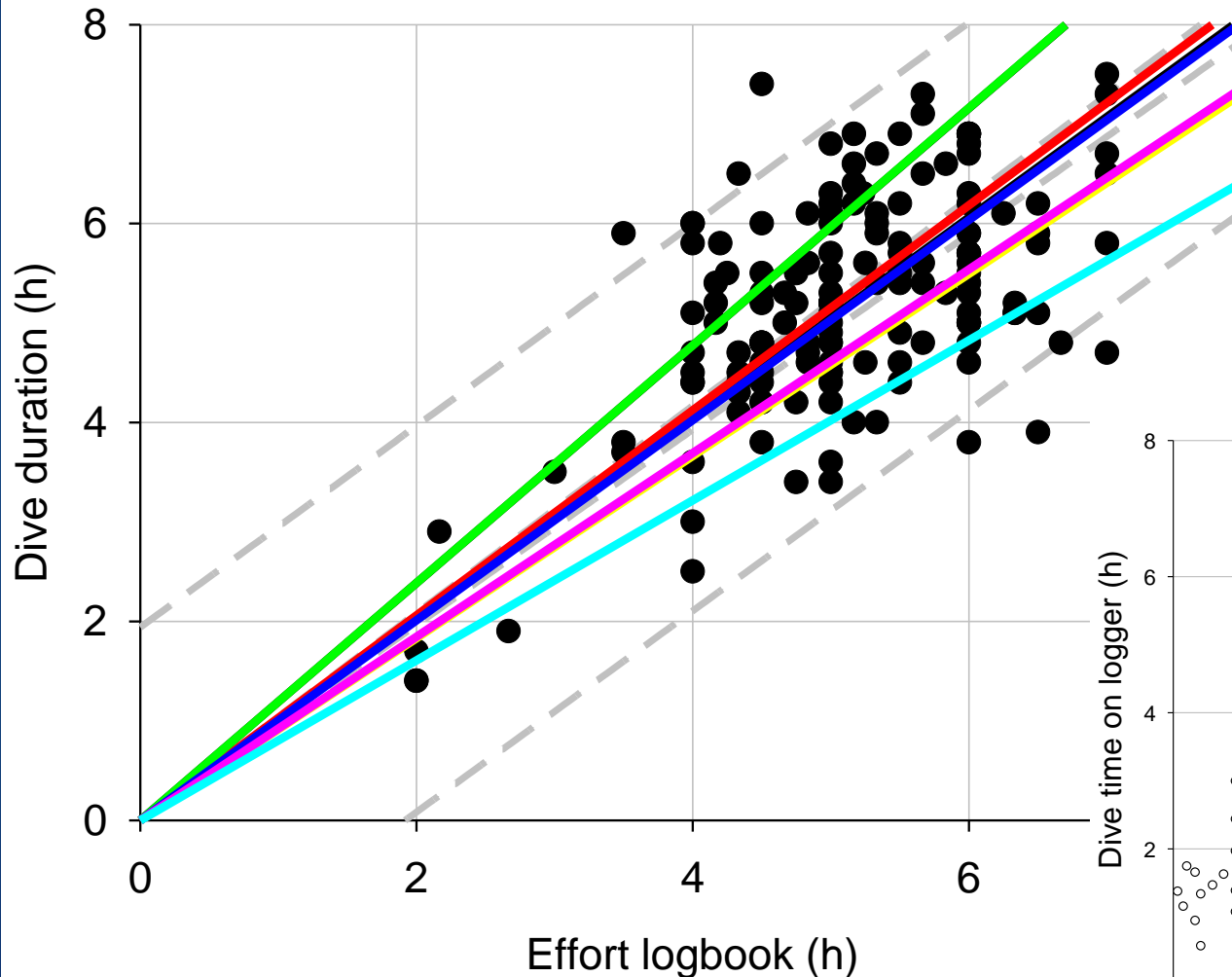


# CZ FRAG – Way forward

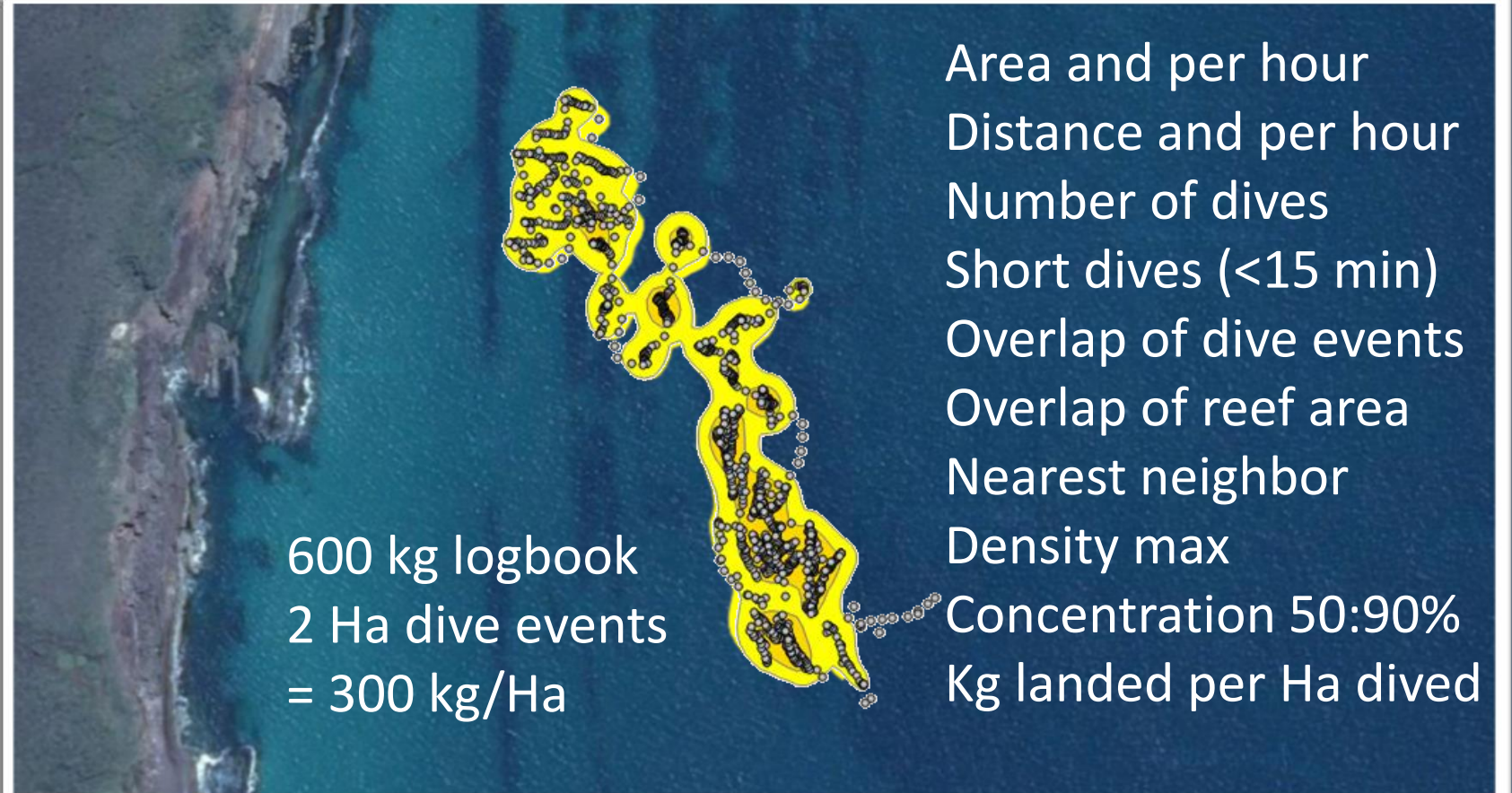
- Summary of current data, just starting to build.
- What comes to the FRAG?
- Which Indicators in Harvest Strategy? And how used?
- Simple or complex? Guidance range and Workshop?
- Automate production each quarter
- Catch distribution
- Catch rate
- VFA survey
- GPS and depth loggers
- Measuring loggers

# Loggers – exact Effort

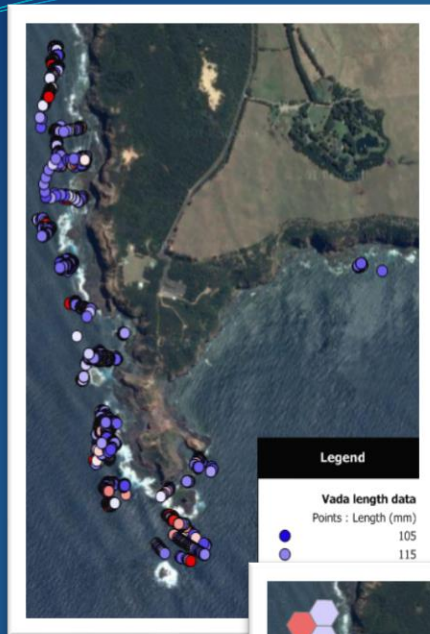
Logger = 1.012 x Logbook, n = 156 days  
6 h Logbook = 6 h 4 min Logger



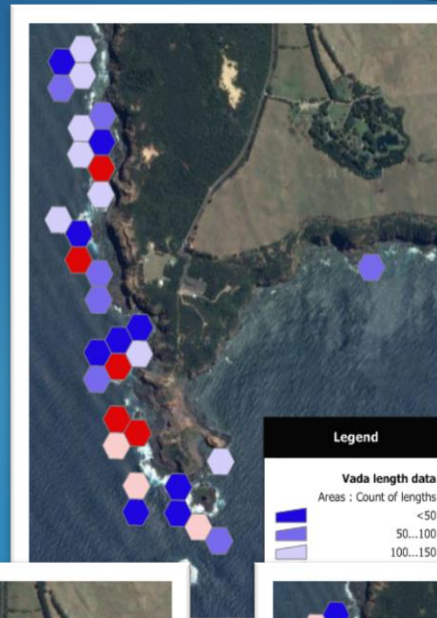
# Loggers – Dive event PI



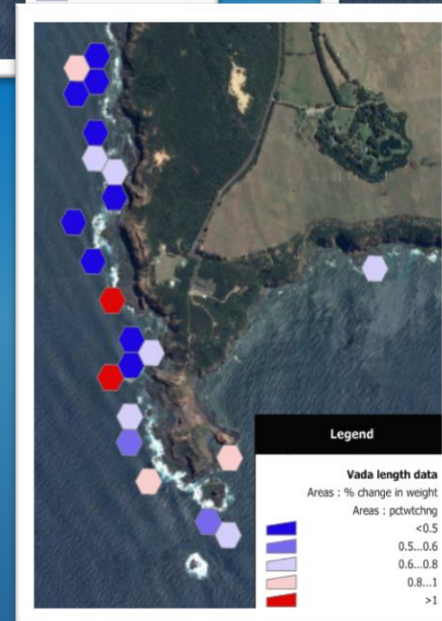
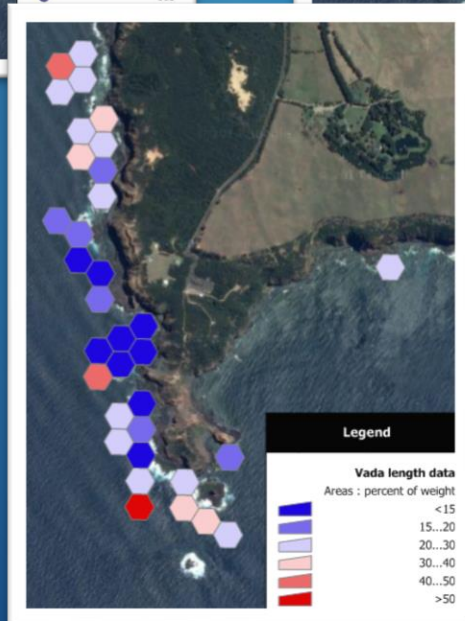
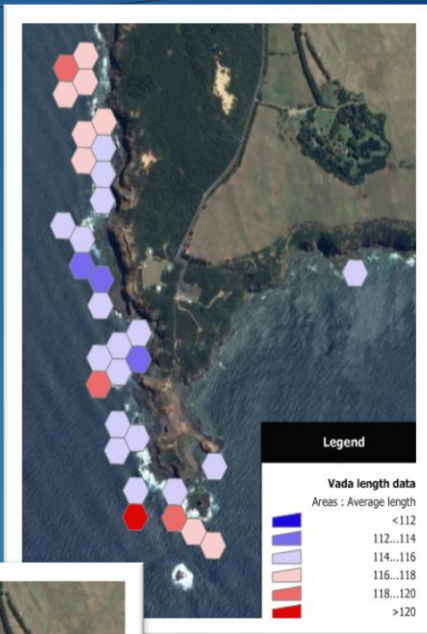
## Individual lengths



## Count of lengths

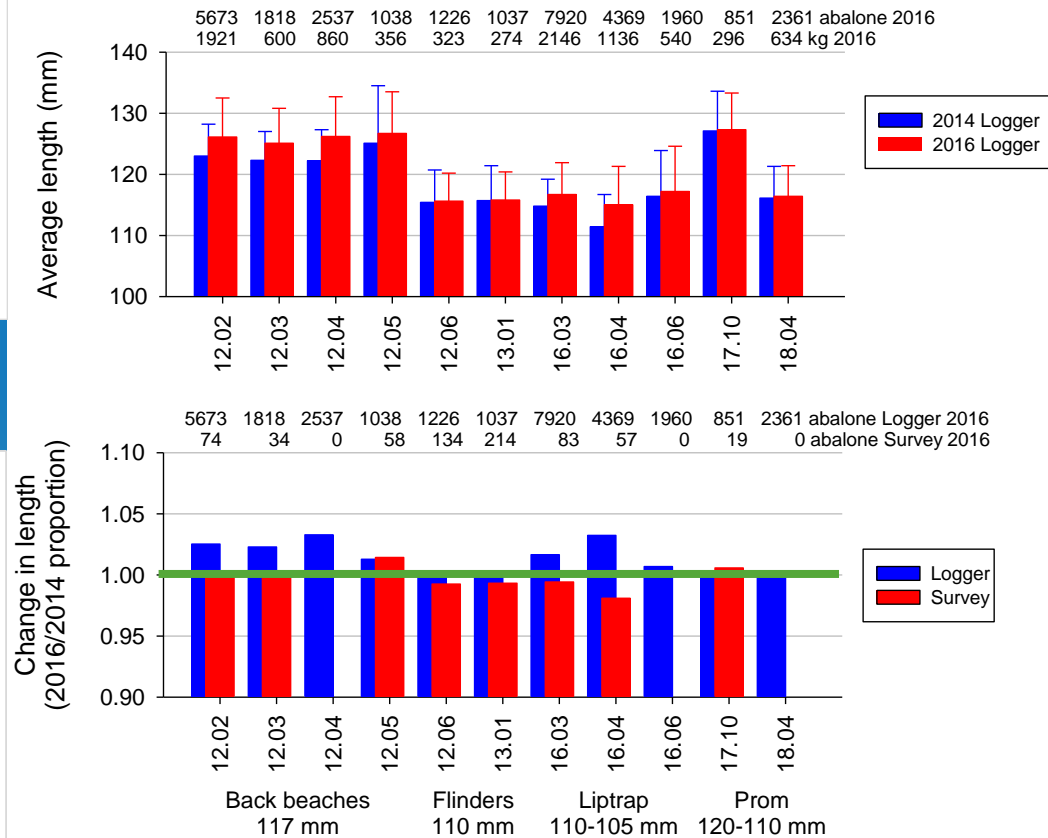
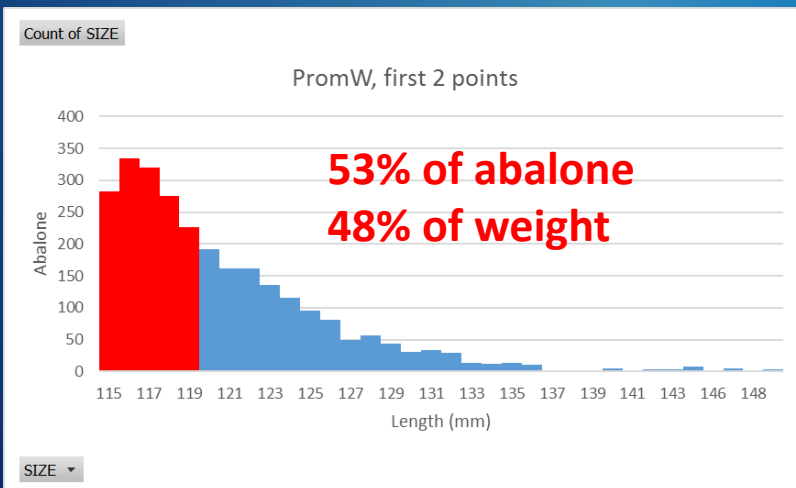
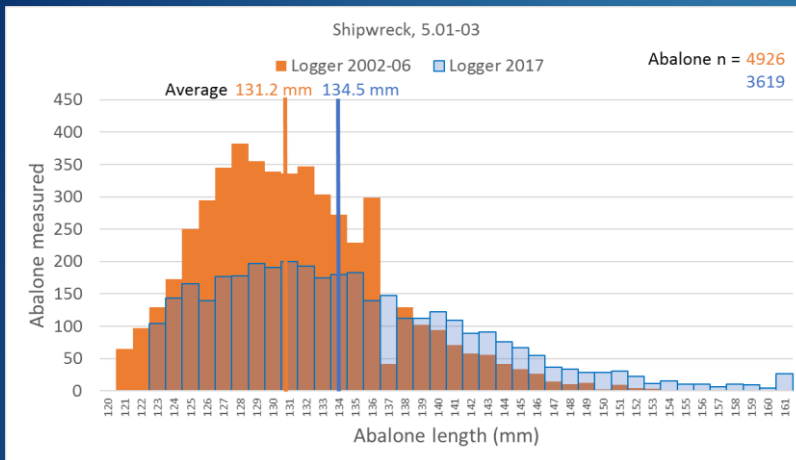


## Average length

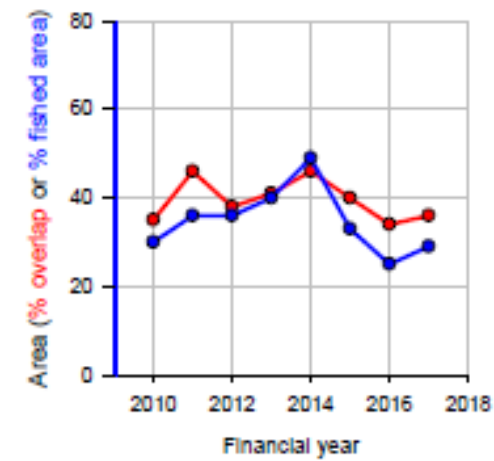
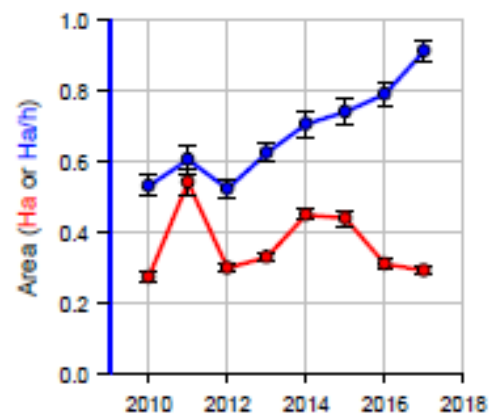
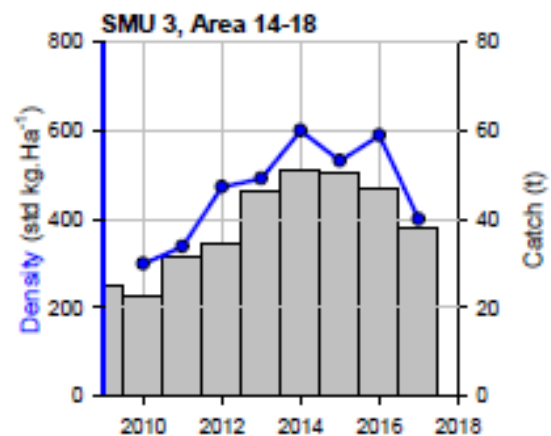


**Percent weight >120 mm Compared to 2002-07**

# Loggers – Measuring, use and interpretation



# GPS Logger PI



# Measuring logger PI

