

Red Sea Urchin – Industry Catch Survey

The Red Sea Urchin 'Industry Catch Survey' is being undertaken by commercial fishers to better understand how Red Sea Urchin (*Heliocidaris tuberculata*) stocks are performing and to inform appropriate management strategies to support ongoing sustainability of the fishery.

This survey is being undertaken to gather data regarding stock size distribution across the whole fishery and within each subzone, to inform fishery assessments and operation of the 95 mm commercial Legal Minimum Length (LML).



The survey is in response to industry calling for more information to determine a biologically appropriate LML for red urchins. This survey is an initial step to gather cost-effective and informative data on stock size and distribution. The survey will further support effective setting of commercial Total Allowable Catches or other management arrangements.

It is envisaged that the survey will be used to inform any future surveys to look at factors including Size at Maturity and determining a biologically or economically appropriate LML to support or improve stock sustainability and economic returns.

Several commercial fishers undertook a snapshot survey in late 2019 to better inform setting the LML for the 2020 fishing season. Following this snapshot survey, industry committed to implementing a larger industry wide survey in the 2020 season.

Getting representative samples of the commercial catch of Red Sea Urchins across the whole fishery from commercial fishers is the most cost and resource efficient method to rapidly gather meaningful data for assessment.

Getting the most reliable data requires all fishers to measure some of their catch from every day they fish, from each sub-zone they fish and to measure an unbiased sample.

What am I required to do?

On every fishing day for every fisher:

- o Measure the maximum 'test' (body) diameter of the first 50 or full bag (if less than 50) of each Red Sea Urchin from every sub-zone fished. Record measurements and other information in the Industry Catch Survey data sheet.
- o Submit each data sheet as soon as possible e.g. daily or at the end of each week. Data sheets can be returned electronically, or hard copies scanned (or a photo taken) and emailed to RedUrchin.Size@dpi.nsw.gov.au

Sub-zone information is provided as an attachment to the data sheet.

How to measure a Red Urchin:

1. Measure the maximum diameter of the 'test' (body) along its longest axis, disregarding any spines (see figure 1 below).
2. Turn the urchin mouth-side-up to measure across the ventral surface.
3. Carefully wedge calliper ends between spines and tighten firmly against the test avoiding damaging the animal.
4. Measure in a straight line from one side of the test to the other, over the top of the mouth parts.

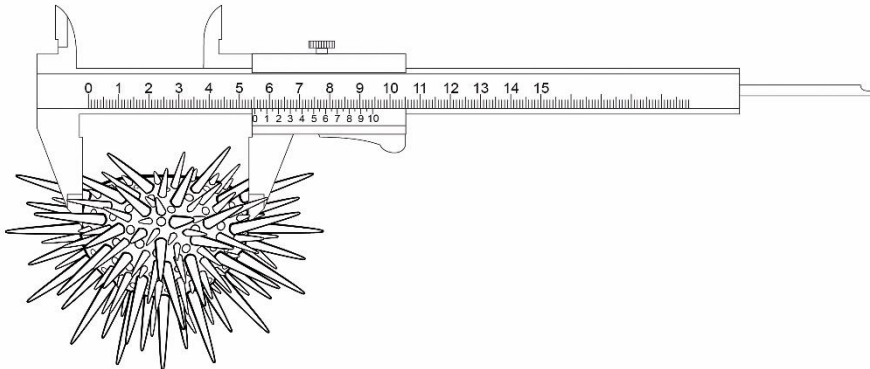


Figure 1. Measuring the test of an urchin.

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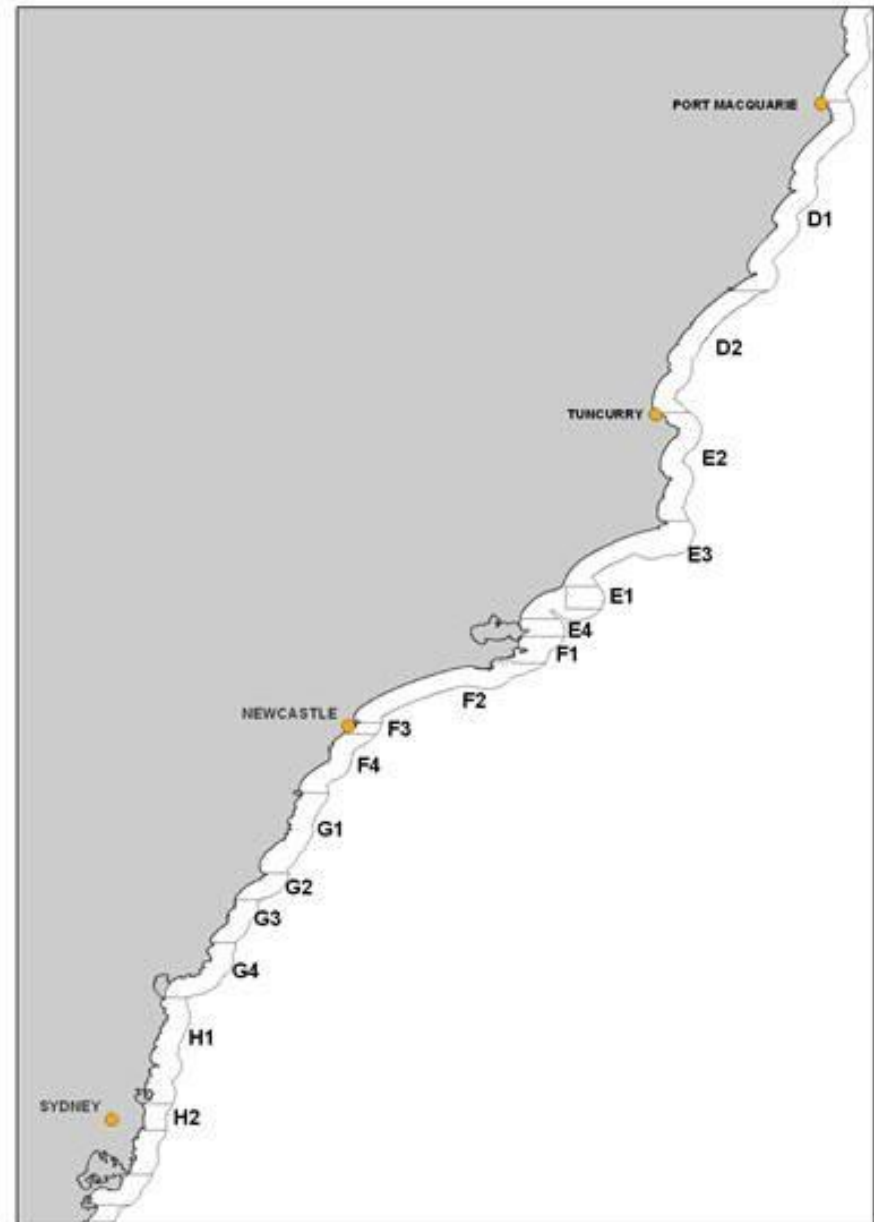


Fisher Name	
Fishing Licence Number	
Date of Catch	
Fishing Subzone	

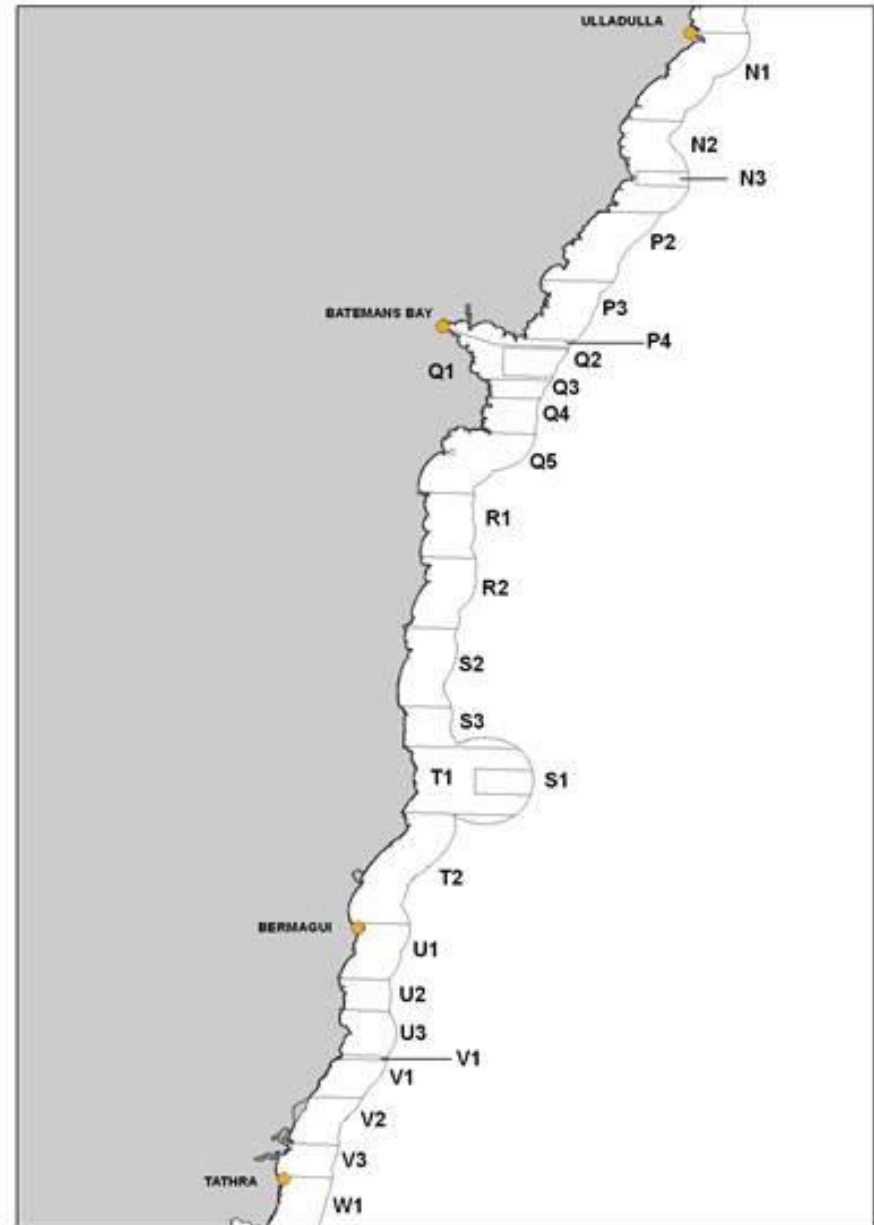
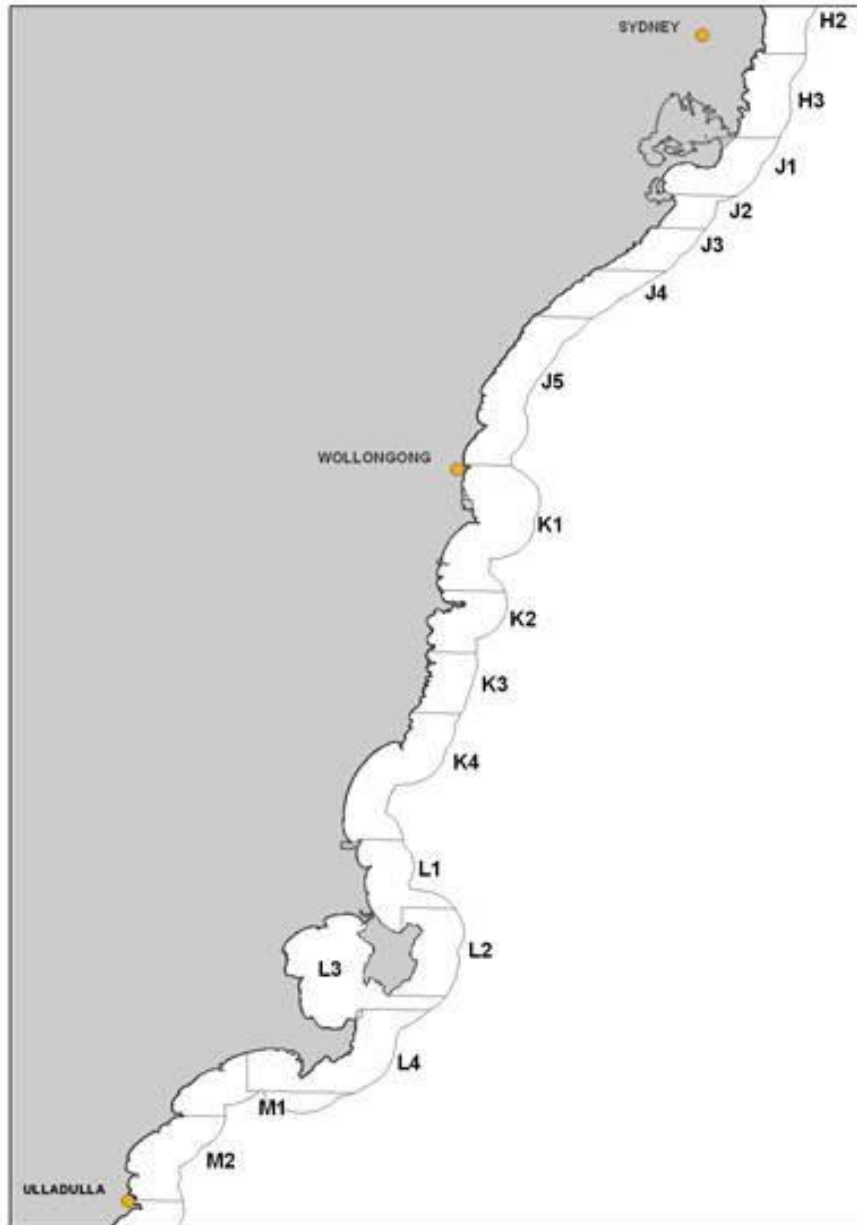
Urchin No.	Urchin size (nearest mm)	Urchin No.	Urchin size (nearest mm)	Urchin No.	Urchin size (nearest mm)
1		21		41	
2		22		42	
3		23		43	
4		24		44	
5		25		45	
6		26		46	
7		27		47	
8		28		48	
9		29		49	
10		30		50	
11		31		51	
12		32		52	
13		33		53	
14		34		54	
15		35		55	
16		36		56	
17		37		57	
18		38		58	
19		39		59	
20		40		60	

Submit Data Sheets electronically or scanned copies to RedUrchin.Size@dpi.nsw.gov.au

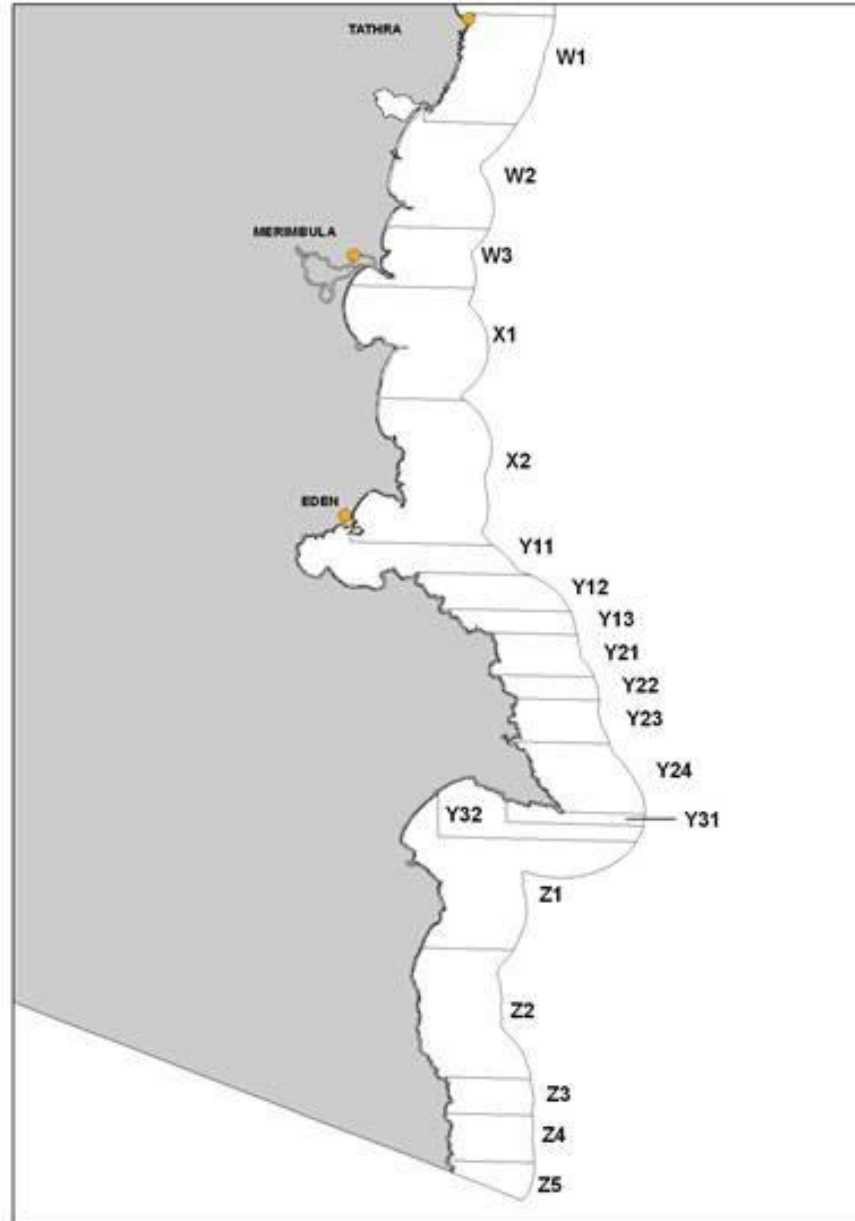
Subzones – Red Sea Urchin Industry Catch Survey



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Region	Sub-zone	Long (Northern Boundary)	Lat (Northern Boundary)	Long (Southern Boundary)	Lat (Southern Boundary)	
1	A Tweed Heads to Ballina	153° 33' 07.2612"	28° 09' 52.3404"	153° 35' 25.0512"	28° 52' 38.3232"	
	B1 Ballina to Sandon	153° 35' 25.0512"	28° 52' 38.3232"	153° 19' 57.9648"	29° 40' 25.8456"	
	B2 Sandon to Red Rock	153° 19' 57.9648"	29° 40' 25.8456"	153° 14' 03.4764"	29° 58' 52.014"	
	B3 Red Rock to Coffs Harbour	153° 14' 03.4764"	29° 58' 52.014"	153° 09' 11.6064"	30° 18' 31.8888"	
	C1 Coffs Harbour to SW Rocks	153° 09' 11.6064"	30° 18' 31.8888"	153° 01' 43.7268"	30° 52' 24.6072"	
	C2 SW Rocks to Pt Macquarie	153° 01' 43.7268"	30° 52' 24.6072"	152° 55' 02.7192"	31° 25' 36.0984"	
	D1 Pt Macquarie to Harrington	152° 55' 02.7192"	31° 25' 36.0984"	152° 41' 27.8952"	31° 52' 39.8424"	
	D2 Harrington to Tuncurry	152° 41' 27.8952"	31° 52' 39.8424"	152° 30' 43.9632"	32° 10' 25.1724"	
	E2 Foster to Seal Rocks	152° 30' 43.9632"	32° 10' 25.1724"	152° 32' 09.9384"	32° 26' 02.3964"	
	E3 Seal Rocks to Hawks Nest Beach	152° 32' 09.9384"	32° 26' 02.3964"	152° 11' 14.118"	32° 40' 07.0356"	
	E4 Yacaaba Head and Islands	152° 11' 14.118"	32° 40' 07.0356"	152° 11' 09.4272"	32° 42' 40.032"	
	E1 Broughton Island	152° 17' 43.5840"	32° 35' 25.0044"	152° 17' 43.5840"	32° 38' 38.7872"	
	F1 Port Stephens to Anna Bay	152° 11' 09.4272"	32° 42' 40.032"	152° 07' 00.3864"	32° 46' 28.8192"	
	F2 Anna Bay to Newcastle	152° 07' 00.3864"	32° 46' 28.8192"	151° 47' 57.5844"	32° 55' 03.9936"	
	2	F3 Newcastle to Burwood Beach	151° 47' 57.5844"	32° 55' 03.9936"	151° 45' 43.9128"	32° 56' 42.108"
		F4 Burwood Beach to Swansea	151° 45' 43.9128"	32° 56' 42.108"	151° 39' 57.6648"	33° 05' 13.1604"
		G1 Swansea to Norah Head	151° 39' 57.6648"	33° 05' 13.1604"	151° 34' 36.1236"	33° 16' 44.8428"
G2 Norah Head to The Entrance		151° 34' 36.1236"	33° 16' 44.8428"	151° 30' 15.4908"	33° 20' 35.0484"	
G3 The Entrance to Terrigal		151° 30' 15.4908"	33° 20' 35.0484"	151° 27' 00.8532"	33° 26' 46.644"	
G4 Terrigal to Broken Bay		151° 27' 00.8532"	33° 26' 46.644"	151° 19' 43.8888"	33° 34' 40.7532"	
H1 Broken Bay to Sydney Harbour		151° 19' 43.8888"	33° 34' 40.7532"	151° 16' 51.2508"	33° 49' 58.152"	
H2 Sydney Harbour to Bondi Beach		151° 16' 51.2508"	33° 49' 58.152"	151° 16' 37.146"	33° 53' 30.9696"	
H3 Bondi Beach to Botany Bay		151° 16' 37.146"	33° 53' 30.9696"	151° 13' 19.992"	34° 00' 05.364"	
J1 Botany Bay to Port Hacking		151° 13' 19.992"	34° 00' 05.364"	151° 10' 08.8788"	34° 04' 29.5032"	
J2 Port Hacking to Marley Beach		151° 10' 08.8788"	34° 04' 29.5032"	151° 08' 28.788"	34° 06' 57.8916"	
J3 Marley Beach to Garie Beach		151° 08' 28.788"	34° 06' 57.8916"	151° 04' 06.816"	34° 10' 14.2464"	
J4 Garie Beach to Starwell Park		151° 04' 06.816"	34° 10' 14.2464"	151° 59' 27.5388"	34° 13' 48.6264"	
J5 Starwell Park to Wollongong Hbr		151° 59' 27.5388"	34° 13' 48.6264"	151° 54' 24.5016"	34° 25' 08.958"	
K1 Wollongong Hbr to Shellharbour		151° 54' 24.5016"	34° 25' 08.958"	150° 52' 35.7672"	34° 34' 44.2416"	
K2 Shellharbour to Bombo Beach		150° 52' 35.7672"	34° 34' 44.2416"	150° 51' 23.0616"	34° 39' 26.8092"	
K3 Bombo Beach to Werri Beach		150° 51' 23.0616"	34° 39' 26.8092"	150° 50' 06.702"	34° 44' 04.182"	
K4 Werri Beach to Shoalhaven Heads		150° 50' 06.702"	34° 44' 04.182"	150° 46' 10.686"	34° 53' 51.6264"	
L1 Shoalhaven Heads to Currarong		150° 46' 10.686"	34° 53' 51.6264"	150° 49' 20.4636"	35° 00' 49.5396"	
3		L2 Currarong to Pt Perpendicular	150° 49' 20.4636"	34° 58' 58.6668"	150° 48' 16.236"	35° 05' 39.9084"
		L3 Inside Jarvis Bay	150° 48' 16.236"	35° 05' 39.9084"	150° 46' 06.0456"	35° 06' 43.992"
	L4 Nth tip Bowen Island to Wreck Bay	150° 46' 06.0456"	35° 06' 43.992"	150° 37' 30.6192"	35° 10' 06.0816"	
	M1 Wreck Bay to Bendalong	150° 37' 30.6192"	35° 10' 06.0816"	150° 32' 43.4652"	35° 14' 54.8016"	
	M2 Bendalong to Ulladulla	150° 32' 43.4652"	35° 14' 54.8016"	150° 28' 43.5864"	35° 21' 20.6568"	
	N1 Ulladulla to Termeil Point	150° 28' 43.5864"	35° 21' 20.6568"	150° 23' 44.3148"	35° 27' 37.6272"	
	N2 Termeil Point to Brush (excl. Island)	150° 23' 44.3148"	35° 27' 37.6272"	150° 24' 27.1728"	35° 31' 45.7356"	
N3 Brush Island	150° 24' 27.1728"	35° 31' 45.7356"	150° 24' 37.2060"	35° 32' 19.4604"		

Subzones – Red Sea Urchin Industry Catch Survey

Region	Sub-zone	Long (Northern Boundary)	Lat (Northern Boundary)	Long (Southern Boundary)	Lat (Southern Boundary)	
4	P1 Brush (excl. Island) to Pretty Beach	150° 24' 27.1728"	35° 31' 45.7356"	150° 21' 55.9548"	35° 34' 12.9864"	
	P2 Pretty Beach to Sth Durras	150° 21' 55.9548"	35° 34' 12.9864"	150° 17' 46.986"	35° 39' 09.4428"	
	P3 Sth Durras to North Head	150° 17' 46.986"	35° 39' 09.4428"	150° 16' 34.7772"	35° 43' 23.1924"	
	P4 North Head to Batemans Bay	150° 16' 34.7772"	35° 43' 23.1924"	150° 10' 54.1416"	35° 42' 26.5284"	
	Q1 Batemans Bay to Lilli Pilli Beach	150° 10' 53.9760"	35° 42' 34.6428"	150° 13' 32.07"	35° 46' 14.4624"	
	Q2 Tollgate Islands	150° 15' 00.0000"	35° 44' 00.0000"	150° 15' 00.0000"	35° 46' 00.0000"	
	Q3 Lilli Pilli Beach to Malua Bay	150° 13' 32.07"	35° 46' 14.4624"	150° 13' 51.1356"	35° 47' 34.5696"	
	Q4 Malua Bay to Burrewarra Point	150° 13' 51.1356"	35° 47' 34.5696"	150° 14' 07.7244"	35° 50' 06.0324"	
	Q5 Burrewarra Point to Moruya River	150° 14' 07.7244"	35° 50' 06.0324"	150° 09' 06.9732"	35° 54' 23.238"	
	R1 Moruya River to Black Rock	150° 09' 06.9732"	35° 54' 23.238"	150° 09' 10.3464"	35° 59' 01.2876"	
	R2 Black Rock to Tuross Lake	150° 09' 10.3464"	35° 59' 01.2876"	150° 08' 03.642"	36° 04' 01.7472"	
	S1 Montague Island	150° 12' 58.7304"	36° 14' 13.7328"	150° 12' 58.7304"	36° 16' 00.9048"	
	S2 Tuross Lake to Dalmeny	150° 08' 03.642"	36° 04' 01.7472"	150° 07' 37.8804"	36° 09' 43.956"	
	S3 Dalmeny to Narooma	150° 07' 37.8804"	36° 09' 43.956"	150° 08' 01.3956"	36° 12' 39.096"	
	5	T1 Narooma to Corunna Lake	150° 08' 01.3956"	36° 12' 39.096"	150° 07' 54.2136"	36° 17' 23.7228"
		T2 Corunna Lake to Bermagui	150° 07' 54.2136"	36° 17' 23.7228"	150° 04' 26.4072"	36° 25' 17.8788"
		U1 Bermagui to Cuttagee Inlet	150° 04' 26.4072"	36° 25' 17.8788"	150° 03' 18.2196"	36° 29' 16.6056"
U2 Cuttagee to Thibbul Inlet (Murrat)		150° 03' 18.2196"	36° 29' 16.6056"	150° 03' 27.1296"	36° 31' 32.7576"	
U3 Thibbul to Bunga Head (Goalen and Pressure)		150° 03' 27.1296"	36° 31' 32.7576"	150° 03' 20.3508"	36° 33' 17.4264"	
U4 Bunga Head to Mimosa Rocks (Bunga)		150° 03' 20.3508"	36° 33' 17.4264"	150° 03' 16.7112"	36° 35' 04.8624"	
V1 Mimosa Rocks to Bithry Inlet		150° 03' 16.7112"	36° 35' 04.8624"	150° 01' 12.2052"	36° 37' 46.8768"	
V2 Bithry Inlet to Barounda Inlet		150° 01' 12.2052"	36° 37' 46.8768"	149° 59' 41.7444"	36° 41' 09.3264"	
V3 Barounda Inlet to Tathra		149° 59' 41.7444"	36° 41' 09.3264"	149° 59' 28.0212"	36° 43' 29.1864"	
W1 Tathra to Wallagoot Lake		149° 59' 28.0212"	36° 43' 29.1864"	149° 57' 26.3844"	36° 47' 23.4816"	
W2 Wallagoot Lake to Short Point Beach		149° 57' 26.3844"	36° 47' 23.4816"	149° 55' 57.3996"	36° 52' 04.720"	
W3 Short Point Beach to Merimbula		149° 55' 57.3996"	36° 52' 04.720"	149° 54' 29.1924"	36° 54' 27.4104"	
X1 Merimbula to Long Beach		149° 54' 29.1924"	36° 54' 27.4104"	149° 55' 39.864"	36° 59' 00.2796"	
X2 Long Beach to Eden Wharf		149° 55' 39.864"	36° 59' 00.2796"	149° 54' 27.5904"	37° 04' 26.7456"	
Y11 Eden Wharf to Red Point		149° 54' 27.5904"	37° 04' 26.7456"	149° 57' 13.8672"	37° 06' 02.7792"	
Y12 Red Point to Leatherjacket Beach		149° 57' 13.8672"	37° 06' 02.7792"	149° 58' 06.9312"	37° 07' 31.0368"	
Y13 Leatherjacket Beach to Mowarry Point		149° 58' 06.9312"	37° 07' 31.0368"	150° 00' 16.5996"	37° 08' 29.1552"	
Y21 Mowarry Point to Saltwater Beach		150° 00' 16.5996"	37° 08' 29.1552"	150° 00' 11.484"	37° 10' 10.8336"	
Y22 Saltwater Beach to Long Point		150° 00' 11.484"	37° 10' 10.8336"	150° 01' 14.97"	37° 11' 09.1824"	
Y23 Long Point to Bittangabee Bay		150° 01' 14.97"	37° 11' 09.1824"	150° 01' 05.6892"	37° 12' 54.0364"	
Y24 Bittangabee Bay to Green Cape		150° 01' 05.6892"	37° 12' 54.0364"	150° 03' 07.2072"	37° 15' 45.0324"	
Y31 Green Cape to City Rock		150° 03' 07.2072"	37° 15' 45.0324"	150° 00' 46.4400"	37° 15' 19.7964"	
Y32 City Rock to Wonboyn		150° 00' 46.4400"	37° 15' 19.7964"	149° 58' 01.2900"	37° 15' 02.8692"	
Z1 Wonboyn to Jane Spiers Beach		149° 58' 01.2900"	37° 15' 02.8692"	149° 57' 23.1372"	37° 21' 13.2300"	
Z2 Jane Spiers Beach to Black Head Anchorage		149° 57' 23.1372"	37° 21' 13.2300"	149° 58' 21.5148"	37° 26' 26.358"	
Z3 Black Head Anchorage to Nadgee Lake		149° 58' 21.5148"	37° 26' 26.358"	149° 58' 21.1764"	37° 27' 54.9648"	
Z4 Nadgee Lake to Howe Beach		149° 58' 21.1764"	37° 27' 54.9648"	149° 58' 26.8788"	37° 29' 51.1224"	
Z5 Howe Beach to Cape Howe		149° 58' 26.8788"	37° 29' 51.1224"	149° 58' 34.5468"	37° 30' 19.152"	