

DEPARTMENT OF MINERALS AND ENERGY

Secretary: Sir Lenox Hewitt O B E

DIVISION OF NATIONAL MAPPING

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TECHNICAL REPORT 20

GREAT BARRIER REEF
FEATURES ABOVE MEAN HIGH WATER
AT NOVEMBER 1974

CANBERRA, AUSTRALIA.

1975

Division of National Mapping

GREAT BARRIER REEF -

FEATURES ABOVE MEAN HIGH WATER AT NOVEMBER 1974

1. Survey

An aerial inspection was carried out in November 1974 of the Great Barrier Reef from latitude 24°S, south of The Bunker Group, to latitude 10°S, at about the centre of Torres Strait, and extending about 5 miles seaward of the edge of the Reef.

All features above mean high water (MHW) were noted and separated into two categories, those considered to be impermanent, being likely to move or disappear with the changing of the seasons or in storms, and those considered to be permanent and stationary. The features include sand cays, man-made structures, coral boulders and continental islands where they are close to the reef.

... The map at attachment A shows all the features above MHW.

2. Straight Baselines

Neither the Reef proper nor Swain Reefs can be enclosed by straight baselines drawn between islands. There are no MHW elevations on the outer Reef between Swain Reefs and Cairns, a distance of 450 nautical miles. Apart from washed-up boulders there are only five permanent cays along the outer edge of the Reef.

There are only two navigation markers on the outer edge of the Reef, one on Raine Island at latitude 11 35 and the other on Euston Reef, off Cairns *.

3. Continuity of the Outer Reef

Except for the section from Cairns to Townsville the outer edge of the Reef may be termed continuous, in the sense that there is no gap between adjacent reefs greater than five miles. A number of isolated reefs lie outside the main reef.

4. Permanency

The likely permanency of each feature was assessed on the following basis:-

Impermanent - bare sand, navigation beacons and other steel or wooden structures.

.../2

* See chart 'Marine Navigational Aids' published by Coastal Services Division, Surface Transport Group, Department of Transport.

Permanent -- sand with grass, scrub or trees or with mangroves adjacent, coral boulders washed well up onto a reef, non-coral or continental islands.

Many sand cays had been proved to move, either continuously, as observed by ground parties at Hixson Cay, or by being washed away and reforming with the change of seasons, as noted on previous successive inspections *.

The inclusion of washed-up boulders may be questioned but, other things being equal, a more violent storm will be necessary to wash them off than that which put them there, and if such an extraordinarily high sea were to arise it could equally well wash away some of the more exposed vegetated cays. Field parties have used large boulders as survey stations from time to time and have reported new coral growth around their bases cementing the boulders into place.

The criterion of grass growth as an indication of permanency was based on the presence of hundreds of birds on most cays of reasonable height. If a cay were to endure a year or more it would certainly have received and germinated much bird-carried seed. Some unvegetated cays were in fact very substantial in both area and height but were classed as impermanent.

A further inspection and photography of the larger unvegetated cays during the north-east season, December to March, would give some indication of how much they change shape and move. A new concept, of permanency allied with constant changing of shape and movement over a small area, might be developed.

5. Records

At Attachment B is an index showing each 1:250 000 map area over the Reef. In some map areas there were no features above MHW and in others there were only continental islands close inshore; these areas have been annotated accordingly.

For each of the remaining map areas lists are attached at C of the permanent and impermanent features with geographical coordinates and references to photographs held in Bathymetric Branch, Division of National Mapping, Canberra.

A set of 1:250 000 maps is held in Technical Services Section Canberra showing the features above MHW,

* See previous National Mapping reports 74/616/47 and 74/616/71 of May 1971. .../3

Original observations are recorded in Spot Photography Field Books 14518 and 14519, held in Technical Services Canberra.

All the negative observations, that is, the absence of previously sighted cays, and other notes are recorded only on the set of field maps held in Bathymetric Branch, Canberra.

6. Photographs

All features above MHW were photographed on 35 mm colour negative film, using an ultra violet filter and a zoom lens, generally but not always set at focal length 86 mm, and on 70 mm black and white film using a polarizing filter and a focal length of 50 mm. The latter were mostly taken in pairs one second apart to give a stereoscopic image.

All photographs were hand-held obliques taken through an open window.

Flying heights were between 500 feet and 3000 feet, as dictated by the average size of the features in the area, cloud height, visibility in rain and the radius of vision required for navigation. The height and camera direction for each black and white photograph are annotated on its border; the corresponding colour photograph is found by cross reference on the list of features at Attachment C.

Several flights were made to rephotograph features at mean low water \pm 0.3 metres for a visual comparison of the tide height. These photographs are also listed at Attachment C.

7. Maps

The Great Barrier Reef Reconnaissance Series, a one-colour map at 1:250 000 scale, accurately shows the outline of all reefs between the southern end of the Reef and latitude 14° S at about Princess Charlotte Bay. North of this point, until such time as air photography or satellite photography becomes available, while the general location of the reef is correct small details are not reliable and features noted at sea cannot always be accurately plotted.

However only two features above MHW are of doubtful accuracy in position at this time; they are impermanent sand cays at about 10° 08' S 143° 58' E and at 11° 34' S 143° 48' E.

8. Tide Predictions

Inspection Flights were timed to cover the Reef when the predicted tide in the area was within 0.3 metres of MHW.

The decrease of tidal range with distance offshore and inaccuracies in transferring predictions from inshore islands to the outer reef made it pointless to use high precision in tidal calculations. A form used for prediction of the times of MHW + 0.3 metres and a sample calculation are at Attachments D and E. The times refer to Secondary Ports as listed in the Australian Tide Tables and were transferred to the outer reef using lines of simultaneous high tide, or cotidal lines +.

The tolerance of 0.3 m above and below MHW occasionally allowed inspection periods of up to six hours. At other times the predicted high water did not reach 0.3 m below MHW and the only productive flying time available was to clear areas as having no features above MHW.

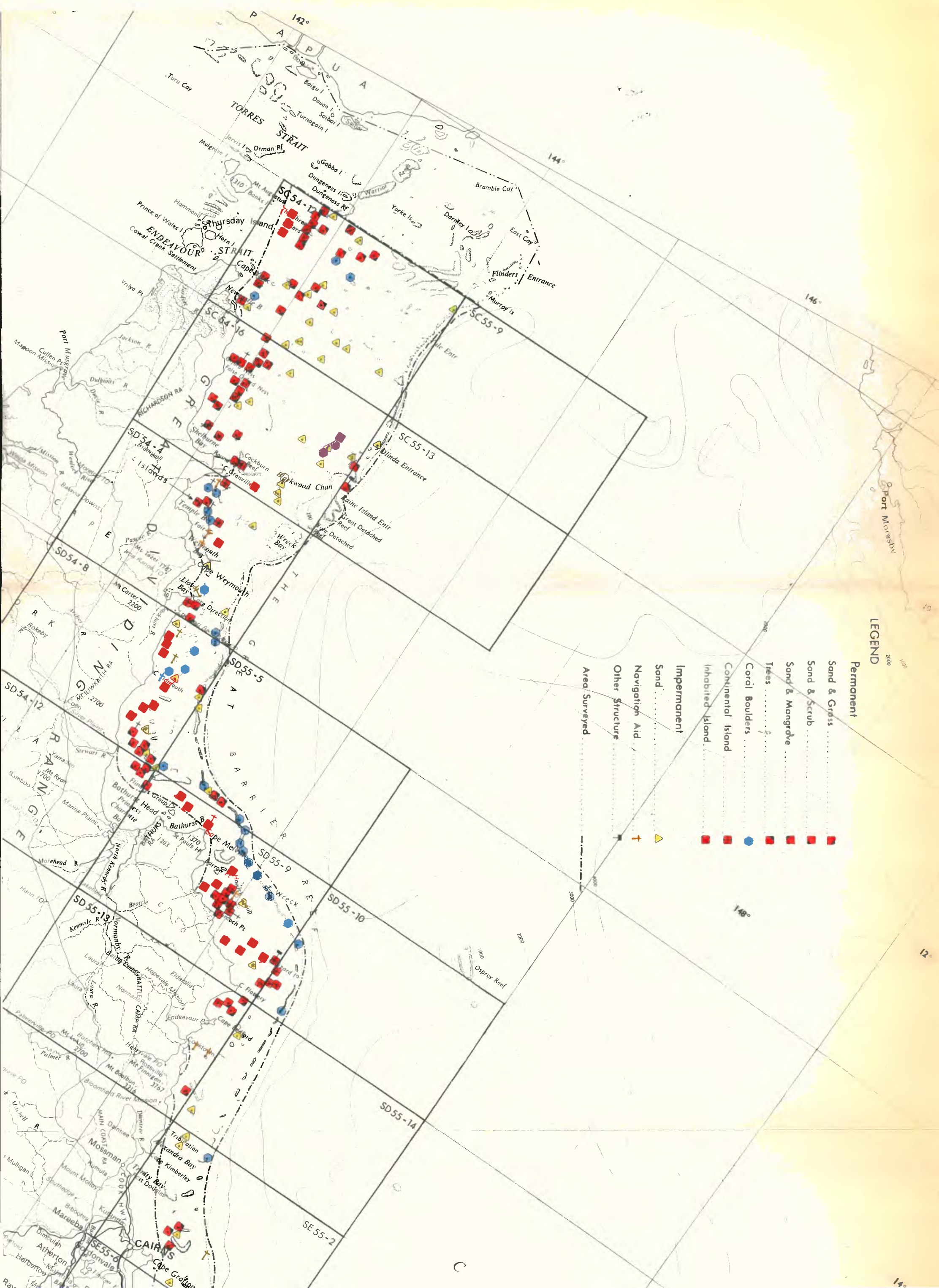
D.P. Cook

(D.P. COOK)

Supervising Surveyor
Bathymetric Branch

30.1.75

+ Maxwell W.G.H. - Atlas of the Great Barrier Reef, p. 74.



LEGEND

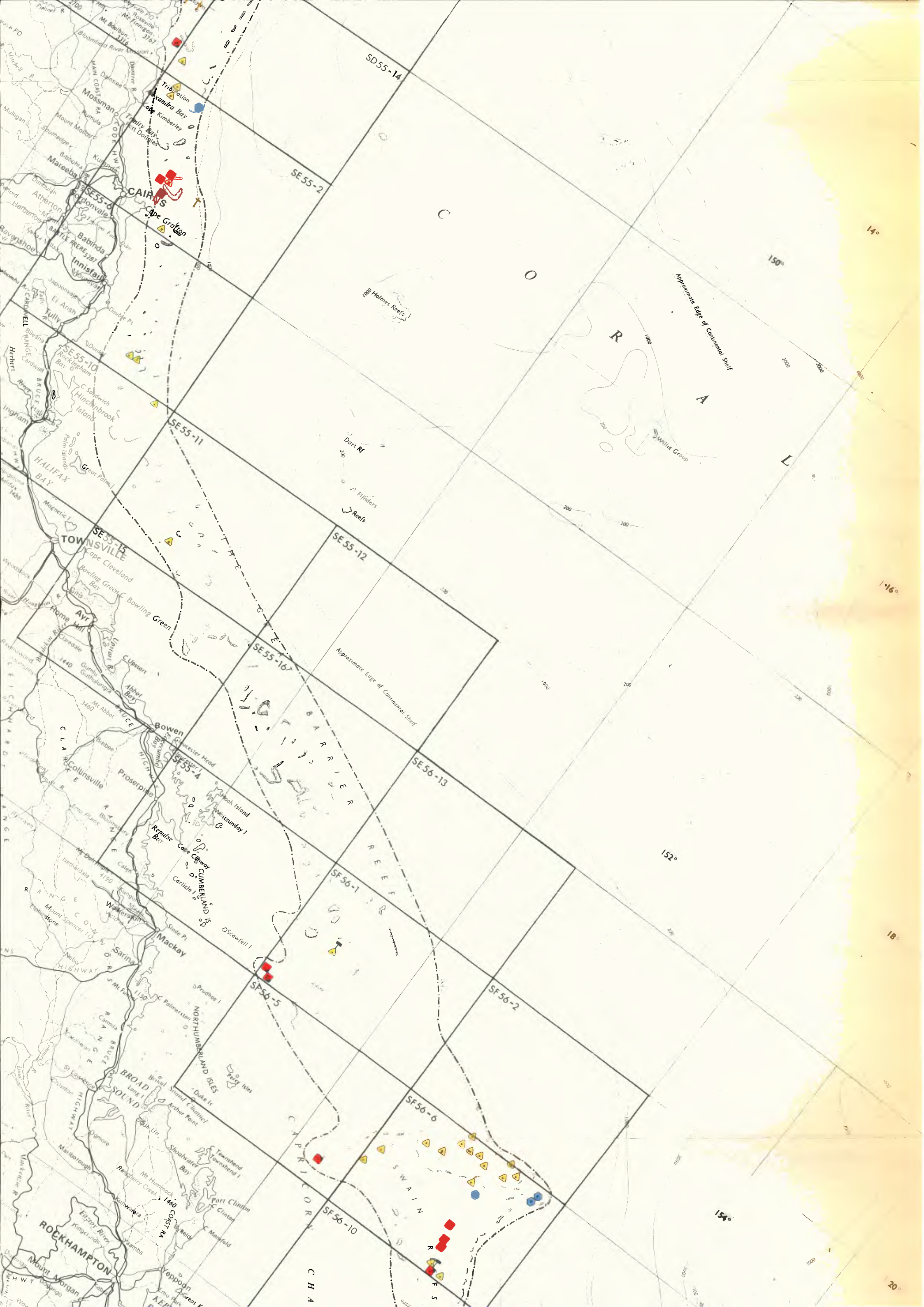
- Permanent
- Sand & Grass
- Sand & Scrub
- Sand & Mangrove
- Trees
- Coral Boulders
- Continental Island
- Inhabited Island
- Impermanent
- Sand
- Navigation Aid
- Other Structure
- Area Surveyed

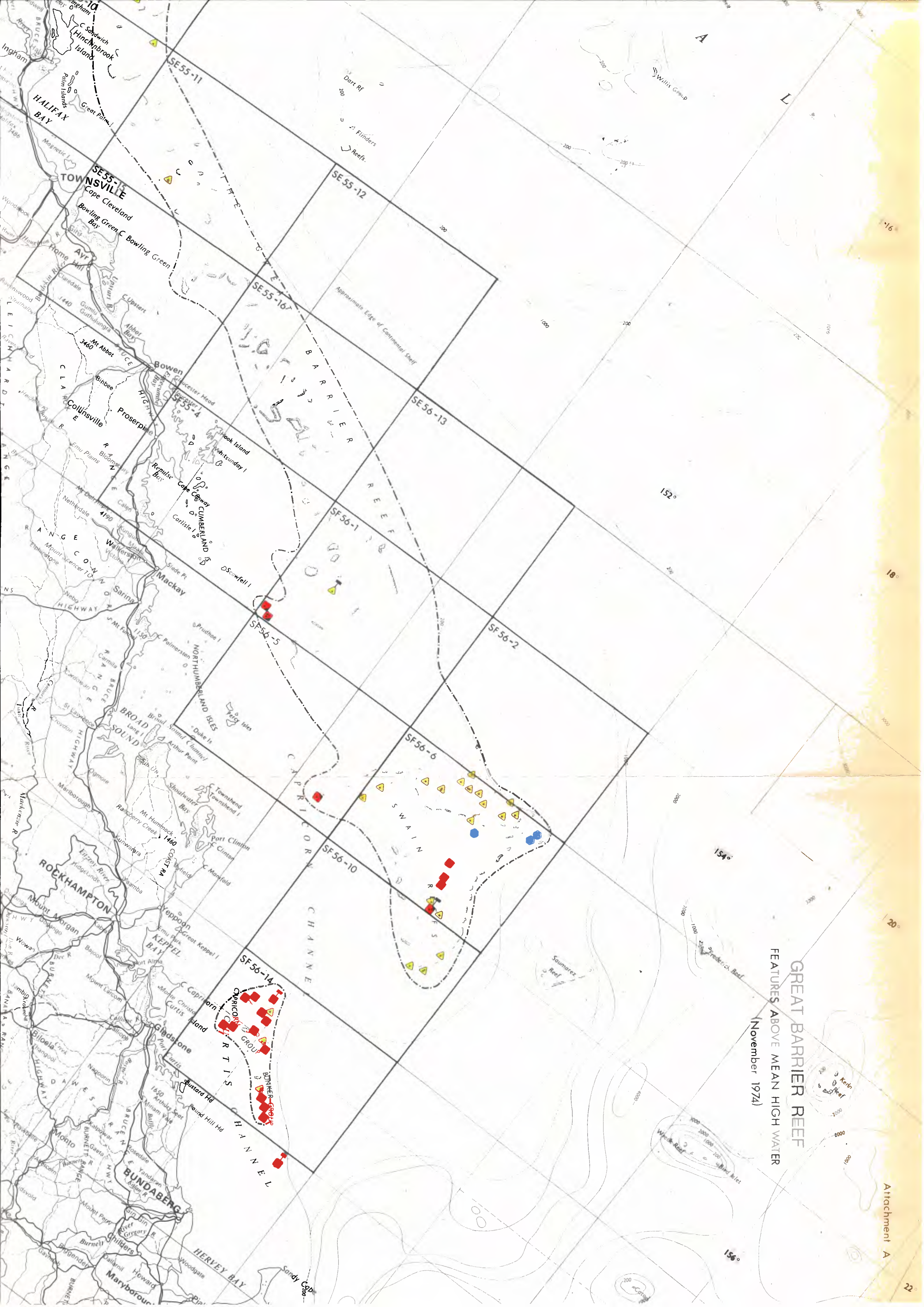


148°

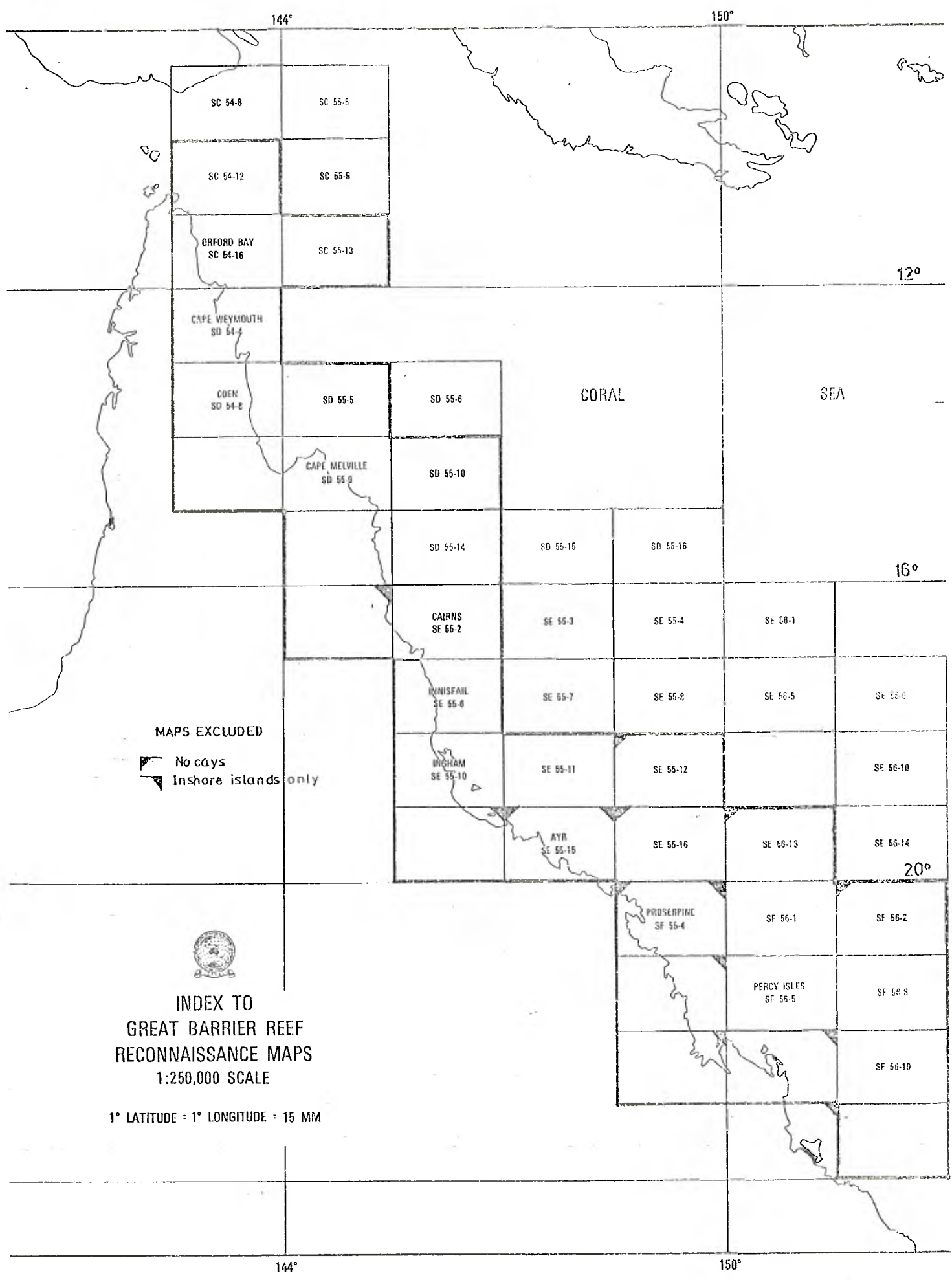
12°

14°





GREAT BARRIER REEF
 FEATURES ABOVE MEAN HIGH WATER
 (November 1974)



MAPS EXCLUDED

- ◀ No cays
- ◀ Inshore islands only



INDEX TO
GREAT BARRIER REEF
RECONNAISSANCE MAPS
1:250,000 SCALE

1° LATITUDE = 1° LONGITUDE = 15 MM

GREAT BARRIER REEF

November 1974

Map No. SC 54-12

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
				11		GBR		
	10°36'	142°56'	8302	12-13	7	9a	2m	Sand, scrub, coral boulder
	10°38'	143°01'	8302	16-17	7	11a	1m	Sand & grass
Dugong Island	10°31'	143°06'	8302	20-21			1m	Scrub
	10°16'	143°07'	8302	40-41			2m	Sand & grass
	10°11'	143°14'	8302	42-43			2m	Sand & grass
	10°06'	143°19'	8302	44-45			2m	Sand & scrub
Coconut Island	10°03'	143°04'	8302	50-53			*10m	Trees, habi- tated
Sassie Island	10°02'	145°51'	8302	56-59				Mangroves
Lowry Islet	10°06'	142°50'	8302	60-61				Sand & grass
Bet Islet	10°09'	142°56'	8302	62-63				Scrub & some trees
Bet Reef East	10°09'	142°56'	8302	64-65			3m	Sand & grass
Sue Islet	10°12'	142°50'	8302	66-69			*3m	Trees, habi- tated
Poll Islet	10°15'	142°49'	8303	1- 2				Scrub with sand & boulders at west end
Harvey Rocks	10°18'	142°41'	8303	5- 6			*5.5m	Rocks & beacons (14.3m)
Ninepin Rock	10°14'	142°40'	8303	7- 8			*7.3m	Rock
Saddle Island	10°10'	142°40'	8303	9-10			*50m	Mainly grass with some scrub & man- groves
Kirkcaldie Rf	10°20'	142°50'	8303	3- 4				Sand & grass
Whyborn Rf	10°49'	142°46'	8304	26-27	11	9		Beacon on rock
Turtle Is.	10°53'	142°42'	8304	30-31	11	11		Scrub, rock & sand
Tetley Is.	10°43'	142°43'	8304	32-33	11	12		Scrub
Johnson Is.	10°39'	142°45'	8304	34-35	11	13	3m	Scrub
	10°47'	142°59'	8304	24-25	11	8	3m	Scrub, grass & sand
	10°20'	143°15'	8302	36-37			0.5m	Sand & boulders
	10°18'	143°07'	8302	38-39			2m	Sand & boulders
	10 38	143 12	8304	18-19	11	6	2	Sand & grass

* Surveyed
height

GREAT BARRIER REEF

November 1974

Map No. SC 54-12

Name

Impermanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estimated Height	Remarks
			Film	Photo	Film	Photo		
					GBR			
	10°38'	142° 54'	8302	14-15	7	10A	0.3m	Sand
	10°36'	143° 04'	8302	18-19	7	12A	1m	Sand
	10°29'	143° 08'	8302	22-23			1m	Sand
	10°29'	143° 08'	8302	24-25			0.5m	Sand
	10°08'	143° 58'	8302	32-35			1m	Sand
Coldbeck Reef	10°06'	143° 09'	8302	46-47			1.5m	Sand
Newman Reef	10°04'	143° 10'	8302	48-49			2m	Sand
Day Reef	10°03'	142° 56'	8302	54-55			1m	Sand
	10°53'	143° 12'	8303	47			0.3m	Sand
	10°54'	143° 10'	8304	2	10	10	0.3m	Sand
	10°59'	143° 06'	8304	3- 4	10	11	1m	Sand
	10°54'	143° 23'	8304	7- 8	10	13	2m	Sand
	10°47'	143° 46'	8304	9-10	11	2	1m	Sand
	10°46'	143° 29'	8304	11-12-13	11	3	0.5m	Sand
	10°36'	143° 17'	8304	16-17	11	5	0.3m	Sand
	10°46'	143° 24'	8304	14-15	11	4	0.5m	Sand
	10°43'	143° 10'	8304	20-23	11	7	0.3m	Sand
Shortland Reef	10°53'	142° 45'	8304	28-29	11	10	1m	Beacon & sand

GREAT BARRIER REEF

November 1974

Map No. C 54-16

Name ORFORD BAY

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Sir Charles Hardy Is.			no photo				* 97	(height of north isl.)
	11 56	143 29	8300	12	6	6	20	Rock 1m S of Charles Hardy
	11 25	143 59	8301	9-10	6	11		Sand, grass
	11 20	143 48	8301	21-22	6	16		Sand, grass, coral bldrs
			8302	9-10	7	8	3	at MLW
	11 22	143 47	8301	23-24	6	17	0.5	Coral boulders sand
			8302	7- 8	7	7	2	at MLW
	11 27	143 45	8301	29-30	6	20		Coral boulders sand awash
					7	4		at MLW
Middle Banks	11 47	143 37	8301	33-34	6	22	2	Coral boulders sand
			8301	62-63	7	1A		at MLW
Saunders Islet	11 42	143 10	8301	39-40	6	25	5	Sand, grass, scrub
Magra Islet	11 52	143 17	8301	41	6	26	3	Sand, grass
			8301	54-55	6	33		at MLW
Cockburn Islands & Buchan Rock	11 51	143 18	8301	42	6	27	30	Rock, grass
Bird Island(s)	11 46	143 05	8301	43	6	28	3	Mangrove on both
Macarthur Isl & Bushy Islets	11 44	142 59	8301	44-45	6	30		Sand, grass, mangroves
Reef S. of Macarthur	11 45	142 59	8301	44-45	6	29		Exposed rock, sand 1m
Bushy Islet	11 35	142 54	8301	47-48	6	31		Sand & scrub
Hannibal Island	11 35	142 57	8301	49-50	6	32		2 cays, sand, scrub
Boydong Is Little	11 28	143 01	8303	13-14	9	∅		Trees, scrub
Boydong Is	11 28	143 02	8303	15-16	9	0A		Scrub, grass
Wallace Is	11 27	143 02	8303	17-18	9	1A		Grass, scrub
Cholmondeley Is.	11 22	143 03	8303	19-20	9	2A	2	Sand, grass
Jardine Is	11 22	143 01	8303	21-22	9	3A	2	Grass, sand
Halfway Is	11 23	142 57	8303	23-24	9	4A	2	Scrub, grass
Bushy Is.	11 14	142 52	8303	29-30	9	7A	2	Grass, mangroves
								* Surveyed height

GREAT BARRIER REEF

November 1974

Map No. C 54-16

Name ORFORD BAY

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Cairncross Is.	11 14	142 55	8303	31-32	9	8A	3	Scrub, mangroves, beaco
Douglas Is.	11 14	142 59	8303	33-34	10	2	3	Scrub
Aplin Is.	11 11	143 02	8303	35-36	10	3	4	Scrub
Milman Is.	11 09	143 00	8303	37-38	10	4	3	Scrub
Sinclair Is	11 07	143 01	8303	39-40	10	5	2	Grass, sand, rock awash at SE end
	11 09	143 04	8303	41-42	10	6	2	Grass, sand
	11 09	143 05	8303	43 44	10	7	1	Grass, sand - 2 cays
Arnold Islet	11 00	142 59	8303	45-46	10	8	2	1at N. end 2"S. end Two parts - scrub, grass
Home Islands excluded								

GREAT BARRIER REEF

November 1974

Map No. SC 54-16

Name ORFORD BAY

Impermanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estimated Height	Remarks				
			Film	Photo	Film	Photo						
Ashmore Banks W.	11° 53'	143° 37'	8300	13-14	6	7	}	Sand at MLW				
			8301	58-59	6	35						
Ashmore Banks E.	11 53	143 37	8300	15	6	8	}	Sand at MLW				
			8301	2								
			8301	60-61	6	36						
			11 56	143 41	8301	3- 4			6	9	2	Sand
			11 24	143 56	8301	12-13			6	12	2	Sand
			11 22	143 56	8301	14-15			6	13	1	Sand
Middle Banks	11 25	143 45	8301	27-28	6	19	}	Sand at MLW				
					7	5						
			8301	35-36	6	23						
												Sand NW Cay- 1m SE Cay- awash
			8301	64-65								at MLW
Cockburn Patch	11 29	143 36	8301	37-38	6	24	2	Sand				
			8301	56-57	6	34						
Boydong Cays	11 31	143 04	8303	25-26	9	5A	}	Sand, at MLW Sand, exposed coral				
			8303	27-28	9	6A						
			8304	5- 6	10	12			2	Sand		
			8301	31-32	6	21			2	Sand		
			68-69	7	3	}	at MLW coral exposed					

GREAT BARRIER REEF

November 1974

Map No. SC 55-13

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Raine Island	11 35	144 01	8301	6- 7	6	10	3	Sand, grass, stone tower 19.5m high at MLW
			8301	66-67	7	2		
<u>Impermanent Features above Mean High Water</u>								
Olinda Entrance	11 12	144 03	8301	19-20	6	15	1	Sand

GREAT BARRIER REEF

November 1974

Map No. SD 54-4

Name CAPE WEYMOUTH

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estim'd Height	Remarks	
			Film	Photo	Film	Photo			
Sherrard Isl.	12 59	143 37	8299	32-33	5	20		2 cays, grass & scrub	
Chapman Isl	12 53	143 36	8299	34-35	5	21		Isl. with grass, scrub sand cay & beacon	
Rocky Isl.			not photographed					*40	
Zenith Reef	12 46	143 36	8299	38-39	5	23		Coral boulder & sand	
Quoin Isl.	12 25	143 29	8299	42-43	5	26	15	Rock, scrub	
	12 57	143 49	8299	58-59	5	29		Coral boulder sand	
Gallon Reef	12 18	143 20	8299	63-64	5	32		Coral boulder	
Hazel Reef	12 16	143 18	8299	65-66	5	33		Rock, beacon	
Kay Reef	12 14	143 18	8299	66	5	34		Coral boulder at S.E. end, sand, grass	
Kay Isl.	12 13	143 16	8299	68	5	35	1	Grass, sand	
Fisher Isl.	12 15	143 14			5	36		Mangrove, rock	
Farmer Isl.	12 14	143 13	8300	1- 2	5	36		Sand, grass, scrub	
Beesley Isl.	12 14	143 12	8300	3- 4	5	37		Sand, grass	
Baird Isl.	12 14	143 12	8300	3- 4	5	36		Mangroves	
Young Reef	12 07	143 13	8300	6- 7	6	2		Rock, sand, beacon	
Moody Reef Sth	12 06	143 16	8300	8	6	3		Rock at sth. end	
Haggerstone Is.	12 01	143 18	8300	11	6	5	*75	High scrub covered island rock & sand at N end of reef	
Wye Reef	12 48	143 36	8299	36-37	5	22		Beacon	
Sandy Islet	12 35	143 30	8299	40-41	5	24	2	Sand	
	12 11	143 37	8299	44-45	5	27	2	Sand	
	12 47	143 47	8299	56-57	5	28	1	Sand	
Middle Reef	12 26	143 23	8299	61-62	5	30		Beacon	
Eel Reef	12 23	143 22			5	31		Beacon, N.W. end	
Moody Reef Nth	12 05	143 15	8300	9	6	4		Beacon	
Forbes Islands rocks at Cape Weymouth, Lloyd and Sunter Islands excluded									

* Surveyed height

GREAT BARRIER REEF

November 1974

Map No. SD 54-4.....

Name CAPE WEYMOUTH.....

Impermanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estimated Height	Remarks
			Film	Photo	Film	Photo		
Wye Reef	12 48	143 36	8299	36-37	5	22		Nav beacon
Sandy Islet	12 35	143 30	8299	40-41	5	24	2	Sand
	12 11	143 37	8299	44-45	5	27	2	Sand
	12 47	143 47	8299	56-57	5	28	1	Sand
Middle Reef	12 26	143 23	8299	61-62	5	30		Nav beacon
Bel Reef	12 23	143 22			5	31		Nav ben at NW end
Moody Reef north	12 05	143 15	8300	9	6	4		Nav beacon

GREAT BARRIER REEF

November 1974

Map No. D 54-8

Name COEN

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour ⁸		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Hedge Reef	13 57	143 53	8298	50-51	4	28	2	Sand with grass on eastern of two cays
" "	13 57	143 5	8298	64-65	4	28	2	Sand, grass
Fife Island	13 39	143 43	8298	60-61	4	32	2	Grass, scrub
Hay Island	13 40	143 42	8298	60-61	4	32		Mangroves
Stainer Is.	13 58	143 50	8298	68-69	4	34		Sand, grass
Pelican Is.	13 55	143 50	8298	70	4	35		Sand, grass
Burkitt Is.	13 56	143 45	8298	71	4	36		Sand, mangroves
Hannah Is.	13 52	143 43	8298	72	4	37		Sand, mangroves, grass & beacon
Wilkie Is.	13 46	143 38	8298	74				Sand, mangrove, grass
	13 22	143 57	8299	3	5	4	2	Sand, grass
			8304	41-42	12	3	3	at MLW
Ham Reef	13 02	143 51	8299	5-6	5	5	1.5	Coral bldrs, sand, no veg'
			8304	39-40	12	2	3	at MLW
Derry Reef	13 01	143 51	8299	7-8	5	6		Coral boulder sand, no veg'
			8304	37-38	12	1	2	at MLW
Jubilee Reef	13 10	143 46	8299	9-10	5	7		Coral boulder
	13 18	143 47	8299	11-12	5	8		Coral boulder
Morris Isl.	13 29	143 43	8299	15-16	5	10	2	Sand, grass, coconut tree
Ellis Isl.	13 22	143 41	8299	19-20	5	12		Rock and sand
Lowrie Isl.	13 16	143 36	8299	23-24	5	14	4	Grass, mangrove, scrub
B instead Isl.	13 13	143 34	8299	25-26	5	5	3	Sand, grass, scrub
Night Isl.	13 11	143 34	82 99	27	5	16-17		Grass, mangrove, scrub

GREAT BARRIER REEF

November 1974

Map No. D.54-8

Name COEN

Impermanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estimated Height	Remarks
			Film	Photo	Film	Photo		
Hedge Reef	13 57	143 52	8298	66-67	4	28	2	Sand
Magpie Reef	13 48	143 45	8298	62-63	4	33	2	2 sand cays
	13 26	143 58	8299	2	5	3	2	Sand
			8304	43-44	12	4	3	at MLW
Blanch Reef	13 23	143 45	8299	13-14	5	9	0.5	Sand
Heath Reef	13 28	143 41	8299	17-18	5	11		Beacon
Bow Reef	13 18	143 40	8299	21-22	5	13		Beacon
	13 13	143 34	8299	25-26	5	15	1	Sand 200m NW of Binstead Is.
Waterwitch Reef	13 09	143 37	8299	28-29	5	18		Beacon
Stork Reef	13 04	143 33	8299	30-31	5	19	0.5	Sand
	14 00	144 00	8298	53-54	4	29		Sand

GREAT BARRIER REEF

November 1974

Map No. D54-12.....

Name EBAGCOLA.....

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Fahey Reef	14 04	143 51	8298	43-44	4	25		Sand, mangroves
Grub Reef	14 02	143 56	8298	45-46	4	26		Grass, bldrs
Eden Reef	14 05	143 55	8298	48-49	4	27		Grass, sand
Cliff Islands excluded.								

Impermanent Features above Mean High Water

NIL

GREAT BARRIER REEF

November 1974

Map No. D.55-5.....

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Tydeman Rf	13 59	144 31	8298	29-30	4	17] Sand, grass coral bldrs At MLW
			8304	51-52	12	8		
Davie Reef	13 59	144 27	8298	31-32	4	18	2] Sand, grass, coral bldrs At MLW
			8304	49-50	12	7	2	
Wilson Rf west end	13 57	144 24	8298	35-36	4	20	1] Coral bldrs At MLW, sand
			8304	47-48	12	6		
	13 56	144 01	8298	55-56	4	30		Coral bldrs and sand
	13 59	144 42	8304	53-54	12	9] Coral bldr at MLW

Impermanent Features above Mean High Water

Wilson Rf east end	13 57	144 26	8298	33-34	4	19		Sand
	13 56	144 01	8298	55-56	4	30		Sand
	13 28	144 02	8298	58-59	4	31	1	Sand at MLW, also smaller cay 1m high
			8304	45-46	12	5	2	

GREAT BARRIER REEF

November 1974

Map No. D 55-9

Name CAPE MELVILLE

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Eagle Isl	14 42	145 22	8297	40-41	3	21		Sand, grass scrub
Nymph Isl	14 39	145 15	8297	43-44	3	22		Grass, scrub, mangrove
Turtle Grp	14 43	145 11	8297	45-47	3	23-24		All with grass, scrub
Pethebridge Is E	14 44	145 06	8297	48-49	3	25		Scrub, mangrove
Pethebridge Is W	14 44	145 05	8297	50	3	26		Scrub, mangrove
Murdoch Is	14 37	144 56						Mangrove
Coquet Is	14 32	145 0						Vegetation, lighthouse
Houghton Is	14 3	144 58						Mangrove
Sinclair I	14 33	144 54						Mangrove
Morris Is	14 33	144 54						Mangrove
Hampton I	14 33	144 53						Mangrove
Leggatt I	14 33	144 52						Mangrove
	14 31	144 51	8297	52-53	3	27		Grass, sand, mangrove
Noble Is	14 30	144 47					* 122	Rock
Bewick Is	14 26	144 48						Mangrove, scrub
Newtown I	14 31	144 55						Mangrove
Watson Is	14 28	144 53						Mangrove
Howick Is	14 30	144 57					56	Rocky peaks
Beanley & Ingram Is	14 26	144 53	8297	54-55	3	28		Scrub, mangrove
Combe Is	14 24	144 54	8297	56-57	3	29		Grass, scrub
Stapleton Island	14 19	144 51	8297	58-59	3	30		Grass, scrub
ARASJO	14 17	145 08	8297	66-67	3	34-35		Wrecked ship
			8304	61-62				at MLW
	14 16	145 07	no photo					Coral bldr
	14 18	145 10	8298	1 - 2	4	3	0.3	Coral bldrs
	14 18	145 11	8298	3 - 4	4	4		Coral bldrs
			8304	63-64	12	13	2	at MLW
	14 23	145 23	8298	5 - 6	4	5	1.5	Coral bldr
			8304	65-66	13	1	2	at MLW
	14 12	144 53	8298	11-12	4	8	2	Coral bldrs and sand
			8304	57-58	12	11	3(sand)	at MLW
	14 12	144 55	8298	13-14	4	9	2	Coral bldrs

* Surveyed height

GREAT BARRIER REEF

November 1974

Map No. ...D.55-9.....

NameCAPE MELVILLE p. 2

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Pipon Isl	14 14	145 00	8298	15-16	4	10	2	Coral bldrs at MLW
			8304	59-60	12	12		
	14 14	145 03	8298	17	4	11		Coral bldrs
	14 10	144 52	8298	19-20	4	12		Coral bldrs
	14 09	144 50	8298	21-22	4	13		Coral bldrs
	14 07	144 48	8298	23	4	14		Coral bldrs
	14 01	144 46	8298	24-25	4	15		Coral bldrs
	14 08	144 31	8298	26-27	4	16		Grass, mangrove and beacon
Clack Isl	14 05	144 14	8298	37	4	21	* 43	Scrub, mangrove
Clack Rf	14 05	144 14	8298	38-39	4	22-23		Scrub, mangrove
Wharton Rf	14 08	143 59	8298	40-42	4	24		Sand, mangrove and beacon
	14 09	144 51	8304	55-56	12	10		Coral bldrs at MLW
Excluded: Lizard, Saddle, South Islands King and Flinders Groups Channel, Boulder and Cape Rocks								
								* Surveyed height
<u>Impermanent Features above Mean High Water</u>								
Linnet Rf	14 47	145 20	8297	39-40	3	20	1	Sand
	14 28	144 58	8297	62-63	3	32		Nav pole
	14 27	145 03	8297	64-65	3	33	0.5	Sand
	14 12	144 53	8298	11-12	4	8	2	Sand
			8304	57-58	12	11	3	at MLW

GREAT BARRIER REEF

November 1974

Map No. D 55-10

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Ribbon Reef	14 56	145 42	8297	35-36	3	18	0.5	Coral boulder at MLW
			8304	69-70	13	3	1	
Day Reef	14 29	145 32	8298	7-8-9	4	4	1	Coral boulder at MLW
			8304	67-68	13	2	1.5	
High Rock (60m), North 7 South Direction Islands were not photographed								

Impermanent Features above Mean High Water

NIL

GREAT BARRIER REEF

November 1974

Map No. D 55-13

Name COOKTOWN

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Hope Isl.	15 44	145 27	8295	31-32-33	1	16-17	8	Grass, mangrove, scrub at MLW
			8305	5-6	13	6		
Three Isl.	15 07	145 25	8297	29 30	3	15		Grass, scrub, mangrove
Low Wooded Isl.	15 06	145 23	8297	31 32	3	16		Grass, scrub, mangrove
Conical Rock	15 08	145 19	no photo				12	Rock Grass, scrub, mangrove at MLW
Two Isl.	15 01	145 26	8297	33-34	3	17		
			8305	1-2	13	4		
<u>Impermanent Features above Mean High Water</u>								
Egret Reef	15 29	145 25	8295	34-35	1	18		Nav beacon
Dawson Rf	15 30	145 20	no photo					Nav beacon

GREAT BARRIER REEF

November 1974

Map No. D 55-14

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
		NIL						
<u>Impermanent</u> Features above Mean High Water								
Pickersgill Reef	15 51	145 34	8295 8305	29-30 7-8	1 13	15 7	2	Sand at MLW
Swinger Rf	15 15	145 32	8295 8305	36-37 3-4	1 13	19 5	2	Sand at MLW

GREAT BARRIER REEF

November 1974

E 55-2

Map No.

Name CAIRNS

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Green Isl.	16 45	145 58	8295	13-14	1	7		Scrub, habit'
Upolu Cay	16 41	145 56	8295	19-20	1	10	3	{ Sand, grass at MLW
			8305	17-18	13	12		
Michaelmas Reef	16 36	145 59	8295	21-22	1	11	3	{ Sand, grass at MLW
			8305	13-14	13	10		
Saint Crispin Reef	16 05	145 51	8295	23-24	1	12	0.7	Coral boulder

Snapper, Low & other inshore islands excluded

Impermanent Features above Mean High Water

Sudbury Rf	17 00	146 09	8295	9-11				Sand
Euston Rf	16 41	146 15	8295	15-16	1	8		Nav beacon
			8295	17-18	1	9	2	Sand at MLW
	16 40	146 00	8305	15-16	13	11		
Undine Rf	16 07	145 38	8295	25-26	1	13	2	Sand at MLW
			8305	11-12	13	9		
Mackay Rf	16 03	145 39	8295	26-27	1	14	2	Sand at MLW
			8305	9-10	13	8		

GREAT BARRIER REEF

November 1974

Map No. E 55-6

Name INNISFAIL.....

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
		NIL						
<u>Impermanent Features above Mean High Water</u>								
Beaver Rf	17 51	146 32	8295 8305	4 21-22	1 14	4 1	2 2.5	Sand at MLW
Taylor Rf	17 50	145 32	8295 8305	5-6 23-24	1 14	5 2	2 2.5	Sand at MLW
Inshore islands excluded.								

GREAT BARRIER REEF

November 1974

Map No. E 55-10

Name INGHAM

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
NIL								
Brook, Hinchinbrook & Palm			Islands excluded					
<u>Impermanent Features above MHW</u>								
	18 04	146 50	8295	7 - 8	1	6	2	Sand
			8297	26-27	3	14		
			8305	25-26	14	3	2.5	at MHW

GREAT BARRIER REEF

November 1974

Map No. E 55-11

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
		NIL						
<u>Impermanent Features above Mean High Water</u>								
Wheeler Reef	18 48	147 32	8297 8305	22-25 27-28	3 14	13 4	0.5	Sand at MLW

GREAT BARRIER REEF

November 1974

Map No. F 56-1

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Redbill Is.	28 58	150 05	8297	7- 8	3	7	*23	Rock scrub
Bushy Is.	20 57	150 05	8297	9-10	3	8		Scrub
Tern Is.	20 55	150 02	8297	11-12	3	9	23	Rock & scrub
								* Surveyed height

Impermanent Features above Mean High Water

Creal Reef	20 32	150 23	8297	18-19	3	12		
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GREAT BARRIER REEF

November 1974

Map No. SF 56-5

Name PERCY ISLES

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Bell Cay	21 49	151 15	8296 8306	36-37 13-14	2 14	16 36	6	Sand, grass at MLW
Northumberland Isles excluded								

Impermanent Features above Mean High Water

NIL

GREAT BARRIER REEF

November 1974

Map No. F 56-6

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Gannet Cay	21 59	152 29	8296	17-18	2	7		Grassed sand, weather stati.
			8305	40-41	14	11	3	at MLW
	21 48	152 25	8296	23-24	2	10		Sand & grass
			8305	46-47	14	14	3	at MLW
	21 48	152 27	8296	25-26	2	11		Sand & grass
			8305	44-45	14	13	3	at MLW
	21 44	152 25	8296	27-28	2	12		Sand & grass
			8305	48-49	14	15	4.5	at MLW
	21 39	152 22	8296	30-31	2	13	2	Sand & grass
			8305	50-51	14	16	3	at MLW
	21 38	152 23	8296	32-33	2	14	1.3	Sand & grass
			8305	52-53	14	17	3	at MLW
	21 20	152 24	8296	34-35	2	15	0.5	Coral boulder
			8305	54-55	14	18	2	at MLW
	21 08	152 46	8296	48	2	22		Coral boulder
			8305	62	14	22		at MLW
	21 05	152 46	8296	49-51	2	25		Coral boulder
			8305	63	14	23		at MLW

GREAT BARRIER REEF

November 1974

Map No. F 56-6

Name

Impermanent Features above Mean High Water

Name	Lat	Long	B & W		Colour		Estimated Height	Remarks
			Film	Photo	Film	Photo		
	21 58	152 34	8296	19-20	2	8		Sand
			8305	38-39	14	10	2.5	at MLW
	21 56	152 27	8296	21-22	2	9	0.1	Sand
			8305	42-43	14	12	1.5	at MLW
	21 37	151 31	8296	38-39	2	17	0.3	Sand
			8306	11-12	14	35	2.5	at MLW
	21 17	152 19	8296	42-43	2	18	2	Sand
			8305	58-59	14	20	3	at MLW
	21 06	152 29	8296	44-45	2	19	3	Sand
			8305	60-61	14	21	4	at MLW
	21 04	152 33	8296	46-47	2	20	0.3	Sand
	21 01	152 29	8296	52-53	2	26	0.3	Sand
			8305	64-65	14	24	1	at MLW
	21 00	152 28	8296	54-55	2	27	0.7	Sand
			8305	66-67	14	25	2	at MLW
	21 07	152 20	8296	59-60	2	29	1	Sand
			8305	68-69	14	26	1.5	at MLW
	21 05	152 14	8296	61-62	2	30	1.3	Sand
			8305	70-71	14	27	3	at MLW
	21 06	152 10	8296	63-64	2	31	1	Sand
			8305	72-73	14	28	1.5	at MLW
	21 06	152 09			2	32	0	Sand wash
			8305	74-75	14	29	3	at MLW
	21 06	152 05	8296	65-66	2	33	2	Sand
			8306	1- 2	14	31	3	at MLW
	21 13	151 59	8296	67-68	2	34	1	Sand
			8306	3- 4	14	32	3	at MLW
	21 14	151 59	8296	69-70	2	35	2	Sand
			8306	5- 6	14	32	3	at MLW
	21 14	151 51	8297	1- 2	2	36	2	Sand
			8306	7- 8	14	33	4	at MLW
	21 30	151 35	8297	3- 4	2	37	0.3	Sand
			8306	9-10	14	34	2.5	at MLW
	21 00	152 06	8297	5- 6	3	3	0.7	Sand
					14	30	0.3	at MLW

GREAT BARRIER REEF

November 1974

Map No. E 56-10

Name

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
			NIL					
<u>Impermanent</u> Features above Mean High Water								
Hixson Cay	22 21	152 44	8296 8305	7-8 34-35	2 14	3 7	3	Sand at MLW
South Hixson Cay	22 22	152 43	8296 8305	9-10 32-33	2 14	4 6	2	Sand at MLW
Howard Patch	22 24	152 37	8296 8305	11-12 30-31	2 14	5 5	2.5	Sand at MLW
	22 12	152 45	8296 8305	13-14 36-37	2 14	6 9	2	Sand at MLW

GREAT BARRIER REEF

November 1974

Map No. F 56-14

Name HERON ISLAND

Permanent Features above Mean High Water

Name	Lat	Long	B & W		Colour 8		Estim'd Height	Remarks
			Film	Photo	Film	Photo		
Lady								
Musgrave Is.	23 54	152 23	8295	43-44	1	21		Scrub covered
Fairfax Is.	23 52	152 23	8295	45-46	1	22		Scrub & grass
Hoskyn Is.	23 48	152 18	8295	47-48	1	23		Scrub
One Tree Is.	23 31	152 05	8295	53-54	1	26	1.5	Scrub, & grass habitation
Heron Is.	23 27	151 55	8295	57-58	1	29		Scrub, habit'
Erskine Is.	23 30	151 46	8295	59-60	1	30		Scrub
Masthead Is.	23 32	151 43	8295	61-62	1	31		Scrub
North West Isl.	23 18	151 42	8295	63-64	1	32		Scrub
Tryon Isl.	23 15	151 47	8295	65-66	1	33		Scrub
Wreck Isl.	23 20	151 57	8295	67-68	1	34		Scrub
Wilson Isl.	23 18	151 55	8295	69-70	1	35		Scrub & grass
North Reef	23 11	151 54	8296	4	1	37		Scrub, light- house

Islands west of Curtis Channel excluded

Impermanent Features above Mean High Water

Boult Reef	23 45	152 16	8295	49-50	1	24		Sand
	23 29	152 04	8295	55-56	1	27-28		Sand west of One Tree Is
Broomfield Reef	23 16	151 57	8295	71-72	1	36	1	Sand

PREDICTED TIMES FOR MHW \pm 0.3m AT SECONDARY PORT 5.954... ϕ 21°40'

DATE ..11..074....

HEIGHTS

Standard Port MACKAY 5951 MHW(Zo+M2) = 4.67

Heights

Seasonal Variation

minus

Corrected Heights at Standard Port

Secondary Port

Height Diff $\frac{\text{Spring} + \text{Neap}}{2}$ (approx)

Seasonal Variation

plus

Predicted Heights at Secondary Port

Total Rise

Total Fall

Height of MHW (Zo + M2)

Height of LW

Rise LW to MHW \pm 0.3

Total Rise and Fall

Factor

ATT p XX

(If factor $>$ 1 then (MHW+0.3) is above predicted HW)

TIMES

Predicted Times at Standard Port

Time Diffs at Secondary Port

Predicted Times at Secondary Port

Duration of Rise and Fall

Time Interval from HW } factor } T.I. ATT p xviii

Time of HW + Time Intervals

Zone/Summer Time Corrections

TIMES OF MHW \pm 0.3 metres

LW	HW	LW
0.3	5.7	0.6
-0.1	-0.1	-0.1
0.4	5.8	0.7
+0.45	+0.45	+0.45
-0.1	-0.1	-0.1
0.75	6.15	1.05

5.4		5.1	
5.1		5.1	
MHW -0.3	MHW +0.3	MHW +0.3	MHW -0.3
4.8	5.4	5.4	4.8
0.75		1.05	
4.05	4.65	4.35	3.75
5.4		5.1	
.75	.86	.85	.735

LW	HW	LW	
0230	0844	1457	
-21	-16	-21	
0209	0828	1436	
6.19		6.08	
-2.05	-1.30	+1.30	+2.10
0623	0658	0958	1038
-	-	-	-
0623 to 0658	0958 to 1038		

