TABLES

TABLE 1 continued

Year ending 30/6	Outer Harbour			Inner Harbour - Ross Creek			Dredge
	Platypus Channel	Swing Basin	Berths	Channel	Swing Basin	Berths	
1961	7.6	7.2	8.8-9.3				Cleveland Bay & Townsville
1962	7.5	7.6	8.2-9.1				"
1963	7.6	7.9	8.7-9.4				"
1964	7.9	7.9	8.4-9.8				"
1965	7.8	7.9	7.5-10.0	3.4	3.4		Cleveland Bay Townsville & Mourilyan
1966	7.8	7.8	7.8-9.8	3.4	3.4		Townsville
1967	7.9	7.9	7.8-9.9	3.0	3.0		"
1968	8.5	8.5	9.1-10.2				"
1969	8.5	8.5	8.8-9.8				"
1970	8.5	8.5	7.5-10.0				"
1971	8.5	8.6	8.2-10.0				"
				Ross River Entrance Channel			
1972	8.8	8.5	8.4-10.6	3.7			"
1973	9.0	8.7	8.3-10.8				"
1974	9.0	8.6	8.0-11.7				Sir Thomas Hiley & Townsville
1975	9.9	8.7	7.5-11.7				"
1976	10.7	8.6	7.7-12.5				"
1977	10.6	9.0	7.2-12.3				Townsville
1978	10.7	9.0	7.0-12.3				"
1979	10.8	9.4	7.2-12.0				"
1980	10.7	9.4	7.2-12.3				"
1981	11.0	9.5	8.0-11.6				"
1982	11.0	9.5	8.1-11.6				"
1983	11.9	10.4	7.4-11.2	2.1			Townsville & Sir Thomas Hiley
1984	10.4	10.4	7.3-11.2	1.3			Sir Thomas Hiley
1985	10.9	10.5	7.2-11.0	2.2			"
1986	10.7	10.5	7.2-11.4	2.2			"
1987	10.7	10.5	7.2-11.4	2.5			"

Sources:
1 Annual reports of Engineer of Harbour & Rivers on Works (Queensland) 1876-1928 (with gaps - see References).
2 Annual Reports of the Marine Department (Queensland) 1894-1933 (except 1921).
3 Annual Reports of Queensland Department of Harbours & Marine 1934-1987.

Note: In early data, especially before 1925, some discrepancies occur between dredging figures in different reports for same year; also variation in description of locality within harbour between different reports & years.

TABLE 2 continued

Year ending 30/6	Quantity Dredged	Notes	Dredge
1974	1,510,700 tonnes (dry)	Developmental dredging in Platypus Channel and Swing Basin	Sir Thomas Hiley
1975	1,086,890 tonnes (dry)	Dredging Platypus Channel From Beacon 7 to harbour entrance and dragline dredging of Ross Creek	Sir Thomas Hiley
1976	316,030 tonnes (dry)	Developmental dredging in Platypus Channel and several berths	Sir Thomas Hiley

Sources:

1 Annual Reports of Engineer of Harbours & Rivers on Works (Queensland) 1876-1928 (with gaps see References)
2 Annual Reports of the Marine Department (Queensland) 1894-1933 (except 1921)
3 Annual Report of Queensland Department of Harbours & Marine 1934-1987

TABLE 3 continued
Townsville Port Authority Monthly Dredging Records (tonnes) for S.D.'Townsville'

Date	Platypus Channel	Swing Basin	Berths	Total		Notes
1968 July	-	-	-	-		
Aug	16,851	347	890	18,088		
Sept	15,829	6,901	3,225	25,955	6,416	pumped into boat ramp reclamation
Oct	26,186	6,614	211	33,011	17,126	" "
Nov	20,570	6,443	-	27,013	17,968	" "
Dec	15,953	1,174	-	17,127	14,514	" "
1969 Jan	-	-	-	-		
Feb	17,247	5,767	1,784		24,798	
Mar	27,757	3,670	-	31,427		
Apr	34,517	-	-	34,517		
May	28,952	1,876	-	30,828		
June	20,873	6,450	7,238	34,561		
Total 1968/69	224,735	39,242	13,348	277,325	56,920	" "
1969 July	10,755	21,592	843	33,190		
Aug	34,644	2,957	-	37,601		
Sept	13,799	297	931	15,027		
Oct	19,993	4,251	-	24,244		
Nov	38,261	2,042	-	40,303		
Dec	13,210	721	-	13,931		
1970 Jan	4,789	6,344	9,475	20,608		
Feb	20,489	6,490	6,085	33,064		
Mar	30,328	4,328	1,107	35,763		
Apr	21,003	10,036	2,776	33,815		
May	32,545	530	-	33,075		
June	19,564	-	-	19,564		
Total 1969/70	259,380	59,588	21,217	340,185		
1970 July	6,194	1,985	6,293	14,472		
Aug	20,980	1,983	10,640	33,603		
Sept	25,359	4,767	6,828	36,954		
Oct	13,036	18,788	3,853	35,677		
Nov	729	22,829	9,032	32,590		
Dec	9,374	17,072	1,770	28,216		
1971 Jan	9,224	15,904	7,997	33,125		
Feb	260	33,065	-	33,325		
Mar	7,939	15,911	5,330	29,180		
Apr	13,620	5,425	6,588	25,633		
May	23,282	5,052	3,858	32,192		
June	9,118	5,198	11,173	25,489		
Total 1970/71	139,115	147,979	73,362	360,456		

TABLE 3 continued

Townsville Port Authority Monthly Dredging Records (tonnes) S.D.' Townsville'

Date	Platypus Channel	Swing Basin	Berths	Total	Notes
1974 July	64,335	5,640	747	70,722	
Aug	69,533	557	-	70,090	
Sept	38,668	6,824	5,225	50,717	
Oct	34,363	1,694	1,977	38,034	
Nov	36,205	3,623	562	40,390	
Dec	1,924	-	18,198	20,122	
1975 Jan	-	-	-	-	
Feb	4,575	9,751	-	14,326	
Mar	17,986	2,778	4,175	24,939	
Apr	13,672	-	9,370	23,042	
May	25,104	-	2,039	27,143	
June	15,105	365	11,132	26,602	
Total 1974/75	321,470	31,232	53,425	406,127	
1975 July	20,743	2,687	4,628	28,058	
Aug	16,371	423	-	16,794	
Sept	-	-	-	-	
Oct	-	-	-	-	
Nov	-	3,841	818	4,659	
Dec	-	21,793	678	22,471	
1976 Jan	15,709	15,446	3,347	34,502	
Feb	9,083	21,848	2,420	33,351	
Mar	12,103	39,144	879	52,126	
Apr	954	24,416	6,966	32,336	
May	23,760	17,325	9,596	50,681	
June	646	20,117	19,723	40,486	
Total 1975/76	99,369	167,040	49,055	315,464	
1976 July	-	37,694	1,714	39,408	
Aug	8,214	38,608	4,833	51,655	
Sept	-	39,715	4,287	44,002	
Oct	1,231	27,769	-	29,000	
Nov	-	-	-	-	
Dec	10,562	26,002	-	36,564	
1977 Jan	12,587	25,226	-	37,813	
Feb	44,038	21,094	-	65,132	
Mar	45,766	27,719	3,326	76,811	
Apr	34,397	12,665	7,196	54,258	
May	42,861	20,987	5,735	69,583	
June	24,199	30,005	4,961	59,165	
Total 1976/77	223,855	307,484	32,052	563,391	

TABLE 4

Townsville Port Authority Dredging Records 1983-88 for T.S.D. 'Sir Thomas Hiley'

		Dry solids (tonnes)	
1983	12 - 16 July	45,920	
	14 - 18 August	63,340	
		109,260	
1984	7 - 22 August	224,190	
	11 - 13 September	35,200	
		259,390	
1985	12 - 17 June	87,050	
1986	8 - 23 July	221,060	
	16 - 18 August	41,000	
		262,060	
1987	18 - 20 April	36,240	
	18 July - 1 August	216,110	
		252,350	
1988	17 June - 2 July	164,600	(including 62,780 tonnes developmental dredging spoil)
	27 July - 2 August	81,810	
		246,410	

NOTES

1983 Dredging in Swing Basin, Harbour & seaward along Platypus Channel mainly to Beacons 11-12.

1984 Dredging in Swing Basin, Harbour & seaward along Platypus Channel mainly to Beacons 13-14.

1985 Dredging in Platypus Channel, Harbour entrance to 11 and 12

1986 Dredging in Harbour & seaward along Platypus Channel mainly to Beacons 11-12, with a little to 7-8.

1987 Dredging in Swing Basin & seaward along Platypus Channel mainly to Beacons 11-12.

1988 Dredging in Swing Basin, Berths & Channel (locations not specified in earlier period, but seaward to Beacons 7 & 8 in later period); small amount of dredging in Sea Channel (dog-leg to main Platypus Channel seaward of 7 & 8) in earlier period.

1983-88 Dredge spoil deposited in deep draft dump site (Figure 1).

TABLE 5

Air Photographs used in this Report

Date	Area Covered	Type	Scale	Aerial Surveyor	Source
1941	E of Ross R mouth - Crocodile Ck	B & W	1:36,945	RAAF	D. Hopley, James Cook University
c1942	S Rowes Bay - E of Ross R mouth	B & W	enlarge-ments	RAAF	Townsville City Council
1-7.6.59	Magnetic Is,Shelly Beach-Alligator Ck	B & W	1:11,520	Adastra	Townsville City Council
11-18.6.61	Magnetic Is, Shelly Beach-Cocoa Ck	B & W	1:86,502	CAB	Geograpy Department James Cook University
18.6.61	Magnetic Is, Shelly Beach - Cape Cleveland	B & W	1:86,502	CAB	AIMS
11.8.61	Magnetic Is, Shelly Beach, T'ville Harbour - E Cleveland Bay	B & W	1:24,049	Adastra	Geography Department James Cook University
7&8.71	Magnetic Is, Shelly Beach - E Cleveland Bay	B & W	1:31,680	Mapmakers	Townsville City Council
5-11.10.73	Magnetic Is, Cape Pallarenda-Cape Cleveland	B & W	1:12,066	AAM	Townsville Port Authority
30.5.74 & 14.6.74	Magnetic Is, Cape Pallarenda-Cape Cleveland	Colour	1:12,000	Beach Protection Authority	Geography Department James Cook University
28.11.78	Magnetic Is, Cape Pallarenda-Cape Cleveland	Colour	1:12,000	BPA	Sunmap
14-15.7.81	Magnetic Is, Cape Pallarenda-Cape Cleveland	Colour	1:12,000	BPA	Sunmap
15&24.6.85 28.6.85 & 15.7.85	Magnetic Is, Cape Pallarenda-Cape Cleveland	Colour	1:12,000	BPA	Sunmap
11.7.85	Magnetic Is - Cleveland Bay area	Colour	1:50,000	BPA	Sunmap
28.5.88	S Magnetic Is, Cape Pallarenda-Sandfly Ck (mosaic)	Colour	1:10,000	AAM	Townsville City Council
30.6.88	Magnetic Is, Pallarenda-E Cleveland Bay	Colour	1:28,575	D Hopley	Sir G Fisher Centre James Cook University

TABLE 6

Beach Protection Authority Cross Profiles - Summary of Changes

Townsville Harbour to W of Shelly Beach

Profile No Town	No of Surveys	Dates	Cross Profile Changes (distances in m from landward end)
19	1	Feb 1982	
20	1	"	
20.4	1	Jan 1983	
20.5	1	"	
20.6	1	"	
20.7	1	"	
20.8	1	"	
20.9	1	"	
21	2	2/1982 & 1/1983	Small change to upper beach swash bars - almost no change to 2,000 seaward of coast.
22	2	" "	Swash bar on upper beach slightly seaward in 1983. Slight erosion to 2,000.
23	2	" "	Slight change throughout 2,000.
24	2	" "	Small accretion throughout most of 2,000.
25	2	" "	Slight accretion to c 270, slight erosion in places to 1650.
26	2	" "	Small accretion at top of upper beach, small accretion at intervals to 1950.
27	2	2/1982 & 2/1983	Small accretion at top of upper beach. Slight accretion & erosion to large sand bars 200-750. Slight accretion seaward of 1300.
28	2	" "	Small accretion throughout, sand bars more developed especially landward of 1000.
29	2	" "	Slight accretion throughout most of profile, sand bars more developed landward of 750.
30	2	" "	Slight accretion landward of 750. Very slight erosion at intervals between 750 & 2000.
31	2	" "	Slight accretion & erosion landward of 500 as bars became more pronounced. Slight overall accretion 500 to 2000.
		" "	Bars well developed landward of 750.
32	2	" "	Small scale erosion & accretion as small bars moved slightly landward of 1250. Slight erosion seaward to 2000.
33	2	" "	Slight erosion & accretion as bars moved slightly along whole profile 0-2000.
34	2	" "	Slight erosion & accretion throughout with bar movement.
25	2	" "	Slight erosion & accretion throughout with subdued bar movement.
36	2	" "	Slight accretion along almost whole profile.
37	2	" "	Slight accretion & erosion along profile including Virago shoal. Erosion of seaward dune slope.
38	2	" "	Slight erosion with bar development 0-350. Slight accretion in places 850-1600.
39	2	" "	Slight accretion throughout, with little erosion in places.
40	2	" "	Slight accretion 0-250, slight erosion 250-2000.
41	2	" "	Slight erosion throughout, erosion of dune face.
42	2	" "	Slight erosion throughout, except small accretion on upper beach.
43	2	" "	Slight accretion throughout to 2250.
44	2	" "	Slight accretion throughout to 2000.
46	2	" "	Slight erosion in places, especially 100-500, slight accretion landward of 100.
48	2	" "	Very slight erosion & accretion at intervals.
50	2	" "	Very slight erosion at intervals.

TABLE 7

Townsville Port Authority Cross Profiles - Summary of Changes

Townsville Harbour to Cape Pallarenda

		Cross Profile Changes (distances in m from landward end)
26.1.78-3.11.78	Run 1	Little change
	Run 2	Little change
	Run 3	Little change
	Run 4	Slight variations (= erosion & accretion) in sand bars & troughs 0-850
	Run 5	Slight variations in upper part of profile 0-200
3.11.78-11.6.79	Run 1	Little change
	Run 2	Slight upper beach erosion, no change otherwise
	Run 3	Little change
	Run 4	Slight variations in sand bars & troughs 0-850
	Run 5	Slight variations in upper beach & low sand ridges to 1000
11.6.79-27.3.80	Run 1	Little change
	Run 2	Slight upper beach accretion, slight accretion in places seaward
	Run 3	Slight upper beach variations, slight accretion in places seaward
	Run 4	Slight variation (mainly erosion) in sand ridges to c.850
	Run 5	Slight variation in upper beach, mainly to 200
27.3.80-9.3.82		(Landward part of profiles not surveyed, 0-47 to 0-87 on different runs, on 9.3.82)
	Run 1	Slight erosion to 850, almost no change seaward
	Run 2	Slight erosion in places
	Run 3	Slight erosion & accretion places
	Run 4	Slight variations in sand bars & troughs 47-850
	Run 5	Slight variations in low sand ridges throughout profile
9.3.82-28.3.83		(Landward part of profiles 0-87 not surveyed on 28.3.83)
	Run 1	Little change
	Run 2	Little change, slight accretion 87-450
	Run 3	Little change

Notes: 1 Locality of profiles shown in Figure 15
2 The small scale vertical erosional and accretional changes described in this Table are of the order of 0.1m to 0.2m.