

REPORT ON THE
CO-OPERATIVE INVESTIGATION OF THE SEAWEED
RESOURCES ALONG THE TAMIL NADU COAST

PHASE - I

Jointly conducted by

THE DEPARTMENT OF FISHERIES, GOVT. OF TAMIL NADU
THE CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
THE CENTRAL SALT AND MARINE CHEMICALS RESEARCH INSTITUTE

PREPARED BY

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)

REPORT OF THE FIRST PHASE OF THE SUMMARY OF THE
SEAWEED RESOURCES ALONG THE TAMIL NADU COAST

Kilakkarai to Athankarai (Gulf of Mannar and Palk Bay), Rameswaram and The Gulf of Mannar Islands.

Jointly conducted by

1. The Department of Fisheries, Govt. of Tamil Nadu
2. The Central Marine Fisheries Research Institute.
3. The Central Salt and Marine Chemicals Research Institute.

(Prepared by)

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE.
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)

Report on the First Phase of the Survey of the Resources
Along the Tamil Nadu Coast

As a sequel to the recommendation made by Group 9 - Fisheries, of the Indian Council of Agricultural Research for fostering inter-organisational co-operation in research, a programme was initiated between the Department of Fisheries, Tamil Nadu, Central Marine Fisheries Research Institute and Central Salt and Marine Chemicals Research Institute to conduct a survey of seaweed resources of Tamil Nadu.

The Survey was started on 20th April, 1971. The following persons participated in the survey.

CMFRI

1. Dr. M. Umamaheswararao, Asst. Fisheries Scientist
2. Shri P.S. Kuriyakose, Research Assistant
3. " Kaliaperumal, "
44. " S. Kalimuthu, J.S.A.
5. " Narayanaswamy, " } Three persons
6. " Dhanaraj, Laboratory-cum-field Asst. } on field work
7. " Md.Mohideen, Fieldman } at each trip

State Fisheries

1. Shri S.T. Chari/Shri B.Krishnamurthy,
Dy. Director
2. " M.Paramasivam, Research Asst. } Four persons
3. " Dhanavelu, Bearer } excluding the
4. " Loss Man, Driver } crew on field
5. " Chusan, " } work at
6. " Anthony Pitchai " } each trip
7. " Susimanikam, "
8. " Anthony, Boat crew

9. Shri Shanmugam, Boat crew
10. " Karim "
11. " Thangavelu "

CSMCRI

1. Dr. V. Krishnamurthy, Asst. Director Ø
2. " K. Subbaramaiah, Scientist 'C' Ø Six
3. Shri M.R.P. Nair, J'S:Æ: Ø persons
4. " M. Sakthivel, P.C. Ø on field
5. " S.M.N. Jainulabdeen, Lab. bearer Ø work at
6. " M. Anthony Rayappan, " Ø each trip
7. " A.M. Abdul Majeed "
8. " M. Nandagopal "

The Statistical analysis was carried out by Shri A.K. Kesavan Nair of Central Marine Fisheries Research Institute.

Area covered:

Each Section was divided into 3 km zones serially numbered in Map 1 and stations were fixed in each zone. At each station 3 transects at intervals of 100 metres were established and seaweed samples were collected along each transect at different depths - intertidal, 0.0, 0.5, 1.0, 1.5, 2.0 and 4.0 metres.

Methods of Survey

Each section was divided into 3 km zones (serially numbered in Map I) and stations were fixed in each zone. At each station 3 transects at intervals of 100 metres were established and seaweed samples were collected along each transect at different depths - intertidal, 0.0, 0.5, 1.0, 1.5, 2.0 and 4.0 metres. The distance between the sampling points on the transects and the base line near the shore were calculated by taking bearings with the help of a sextant. The bearings taken and the total length of the coastline measured were used in estimating

and mapping the area surveyed. Each 3 km zone was sampled 2 times following the above method at 1 km. distance. Seaweed samples were collected from 1 square metre area by diving and for this purpose a metal quadrat of one square metre was used. Data on the nature of the substratum and area covered by seaweeds and seagrasses within the quadrat were recorded. Samples collected from the quadrat were sorted, identified and fresh weight of individual species were noted. Names of algae found in trace amounts were also noted. 3 sets of herbaria were prepared for all the seaweeds and seagrasses occurring different depths of the central transect and / at also for the new species in other transects which had not come across in the central transect. Unidentified algae were fixed in 5% formalin for later identification in the laboratory.

Hydrobiological data were collected usually at 4.0 metres depth in the central transect of the sampling stations or at the maximum depth available at the particular station. Water samples from surface and bottom were collected by using Nansen water sampler. Data on temperature, pH and time of collection were recorded while collecting water samples. Plankton samples and bottom sediments were collected and bottom fauna were separated from the sediment. In the laboratory water samples were analysed for dissolved oxygen, salinity and nutrients. Mud samples were analysed for dissolved minerals and trace elements. The bottom fauna were identified to the generic level. Plankton samples were analysed both qualitatively and quantitatively.

A total of 83 species of Algae belonging to 50 genera from Gulf of Mannar shoreline and 131 species belonging to 75 genera from Gulf of Mannar Islands and 92 species belonging to 54 genera from the Palk Bay shoreline were identified.

Magnitude of available resources

In the present survey an area of 1944 hectares in the Gulf of Mannar shoreline, 9883 hectares in the Gulf of Mannar Islands and 2860 hectares in the Palk Bay shore line were covered. The estimated species-wise production of seaweeds for both surveys are given in Tables 1-6. The depthwise areas surveyed are given in Table 7. The standing crop of Agarophytes, Alginophytes, edible seaweeds and other algae observed in both surveys are presented in Table 8. The density of distribution of the total algae was on the average ca 1 tonne per hectare with slight variations as shown below:

Production per hectare in Kg

Region	First Survey	Second Survey
Gulf of Mannar shoreline	843	738
Gulf of Mannar Islands	1,025	666
Palk Bay shore line	736	881

Of this the Agarophytes formed about 10% of the total in the Gulf of Mannar shore line, about 9% in the Gulf of Mannar islands and about 4% in the Palk Bay region. The Alginophytes formed the dominant component constituting about 42% in Gulf of Mannar shore line, almost 51% in the Gulf of Mannar islands and about 34% in the Palk Bay shoreline (mean values of the two surveys).

The most productive depth zones were between 0 to 1.25 metres (with a production per hectare of approximately 237 kg) for the agarophytes and between 0 to 3 metres (with an approximate production per hectare of 556 kg) for alginophytes.

The area with 1 metre depth affords the maximum standing crop for exploitation. The total yield from the areas surveyed comprising 14,687 hectares will be about 5,727 tonnes of Alginophytes and about 1,034 tonnes of Agarophytes.

Table 1.
ESTIMATED SPECIES-WISE PRODUCTION OF SEaweEDS (IN KG) ALONG THE BULF OF MANNAR
COAST LINE
FIRST SURVEY

	Depth in metre					Total	
	Intertidal	0.0-0.25	0.25-0.75	0.75-1.25	1.25-1.75		1.75-3.0
<u>RED ALGAE</u>							
<u>Agarophytes</u>							
Gelidiella acerosa	--	--	4820	670	4259	--	9749
Gracilaria edulis	--	--	--	--	--	--	97550
Gracilaria corticata	--	--	507	--	--	--	507
Other Gracilaria spp.	11139	32988	59116	--	37247	--	140490
Hypnea spp.	--	185	1523	--	23945	--	25653
Total	11139	33173	65966	670	4259	158742	273949
<u>OTHER RED ALGAE</u>							
Desmia	--	--	--	--	--	--	887
Amphiroa fragilissima	--	1848	9134	1509	11181	887	59125
Halymenia	--	--	--	--	--	--	4726
Spyridia	--	647	--	--	--	--	4428
Chondria	--	9240	--	--	26622	--	35862
Acanthophera	--	1663	--	--	--	--	1663
Laurencia	521	--	--	--	--	--	521
Total	521	13398	9134	1509	37803	7981	107212
<u>BROWN ALGAE</u>							
<u>Alginophytes</u>							
Sargassum spp.	119	49251	32222	5030	5324	5320	97266
Turbinaeria spp.	--	324	74466	97914	--	7095	180399
Padiha spp.	409	2218	4821	--	--	--	7448
Total	528	52393	111509	102944	5324	12415	285113

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>OTHER BROWN ALGAE</u>								
Dictyota	--	185	--	--	533	--	--	718
Denaria	--	--	--	--	--	--	1891	1891
Total	--	185	--	--	533	--	1891	2609
<u>GREEN ALGAE</u>								
<u>Edible</u>								
Enteromorpha spp.	--	3231	--	--	--	--	--	3234
Ulva spp.	1175	16910	22708	--	--	--	--	40793
Caulerpa spp.	22	185	38185	17269	533	2662	8508	67364
Total	1197	20329	60893	17269	533	2662	8508	111391
<u>OTHER GREEN ALGAE</u>								
Chaetomorpha	89	--	--	--	--	--	--	89
Halimeda gracilis	2409	4990	76115	35544	--	585305	--	704363
Halimeda macroloba	--	--	19750	5030	2662	46115	67115	140712
Total	2498	4990	95905	40574	2662	631420	67115	845164
<u>BLUE GREEN ALGAE</u>								
Lyngbya	--	739	--	--	--	--	12289	13028

TABLE 2.
ESTIMATED SPECIESWISE PRODUCTION OF SEAWEEDS (IN KG) ALONG THE GULF OF MANNAR COASTLINE

	SECOND SURVEY						Total
	Intertidal	0.0-0.25	0.25-0.75	0.75-1.25	1.25-1.75	1.75-3.0	
	Depth in metres						
<u>RED ALGAE</u>							
<u>Agarophytes</u>							
Gelidiella acerosa	155	--	--	--	--	--	155
Gracilaria edulis	--	160	--	--	--	--	160
Gracilaria corticata	6026	32755	--	--	--	--	38781
Hypnea spp.	193	5526	291	--	--	3277	9287
Total	6374	38441	291	--	--	3277	48383
<u>OTHER RED ALGAE</u>							
Gelidiopsis	180	160	--	--	--	--	340
Gelidium spp.	19	560	--	692	--	--	1271
Amphiroa fragilissima	142	--	--	16612	104527	819	122100
Amphiroa spp.	--	1121	8428	--	--	--	9549
Cheilosporum	309	--	--	--	--	--	309
Jania spp.	780	2322	1162	923	7686	--	19139
Grateloupia	515	--	--	--	--	--	515
Champia	393	961	--	--	--	--	1354
Centrocers clavulatum	64	--	--	--	--	--	64
Leveillea	64	--	--	--	--	--	64
Acanthophera	2617	28029	--	--	--	--	30646
Laurencia	3351	1281	--	461	--	--	5093
Other filamentous red algae	--	--	--	923	--	--	923
Total	8434	34434	9560	19611	112213	819	191367
<u>BROWN ALGAE</u>							
<u>Alginophytes</u>							
Sargassum spp.	8508	133178	71905	236491	189072	--	889515
Turbinaria spp.	--	--	27487	--	--	--	27487
Padina spp.	103	25226	9015	7383	46884	--	98491
Total	8611	158404	108407	243874	235956	--	1015493

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>OTHER BROWN ALGAE</u>								
Dicotyota sp.	26	641	110	582	82138	--	--	83497
Stoechospermum	103	1762	1099	5812	416	--	--	9237
Pocockiella variegata	--	81	--	--	2307	--	--	2388
Total	129	2484	1209	6394	84906	--	--	95122
<u>GREEN ALGAE</u>								
<u>EDIBLE</u>								
Caulerpa sp.	39	240	--	291	2768	3074	--	6412
<u>OTHER GREEN ALGAE</u>								
Chaetomorpha	--	721	--	--	--	--	--	721
Cladophora	77	--	--	--	--	6917	--	6994
Valoniopsis	--	4004	--	--	--	--	--	4004
Microdictyon	--	--	--	--	3692	13066	--	16758
Udotea flabellum	--	--	--	2325	3592	10760	19622	36399
Halimeda macroloba	6	641	1539	--	3922	7686	--	13794
Total	83	5366	1539	2325	11306	38429	19622	78670

TABLE 3.

ESTIMATED SPECIES-WISE PRODUCTION OF SEAWEEDS (IN KG) ALONG GULF OF MANNAR ISLANDS

FIRST SURVEY

	Intertidal	0.0-0.25	0.25-0.75	Depth in metres 0.75-1.25	1.25-1.75	1.75-3.0	3.0-4.0	Total
<u>RED ALGAE</u>								
<u>Agarophytes</u>								
<i>Gelidium acerosa</i>	43	2525	34797	--	--	--	--	37365
<i>Gracilaria edulis</i>	--	30305	127588	8180	26550	18789	--	211411
<i>Gracilaria corticata</i>	--	--	1365	--	--	6263	--	7628
Other <i>Gracilaria</i> spp.	--	72817	42302	43968	1154	37577	--	197818
<i>Clypea</i> spp.	7	35356	110531	37833	93505	43839	--	321071
Total	50	141003	316583	89981	121209	106467	--	775293
<u>OTHER RED ALGAE</u>								
<i>Chondrococcus hornemannii</i>	--	--	1365	--	--	--	--	1365
<i>Gelidium fragillissima</i>	--	--	47760	8180	25396	43839	--	125175
<i>Gelidium</i> spp.	--	--	2047	--	--	--	--	2047
<i>Galania</i>	--	51771	--	--	--	--	--	51771
<i>Galymenia</i> spp.	--	--	--	2045	--	--	--	2045
<i>Scateleupia</i> spp.	--	--	--	--	--	6263	--	6263
<i>Agardhiella</i>	--	--	--	--	--	125255	--	125255
<i>Champia</i>	--	9260	--	6135	--	--	--	16077
<i>Centroceros</i> spp.	--	1684	682	--	--	--	--	3049
<i>Vanvooratia spectabilis</i>	--	--	1365	--	--	--	--	4094
<i>Roschera glemerulata</i>	--	--	4094	--	--	--	--	8187
<i>Acanthophora</i>	--	12627	8187	--	--	--	--	16038
<i>Laurencia</i>	--	842	3411	15338	42712	--	--	73220
Total	--	76184	83239	31698	68108	175357	--	434586
<u>BROWN ALGAE</u>								
<u>Alginophytes</u>								
<i>Sargassum</i> spp.	--	180992	4593176	128836	1212083	284956	--	6400043
<i>Gelidium</i> spp.	--	--	204688	--	--	--	--	204688
<i>Padina</i> spp.	503	61453	105754	31698	62335	12526	--	274269
Total	503	242445	4903618	160534	1274418	297482	--	6879000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>RED BROWN ALGAE</u>								
Dictyota	--	--	2047	3067	8080	3131	--	16325
Stecchospermum	--	--	--	4090	1154	--	--	5244
Anthoglossum asperum	--	--	--	--	--	50102	--	50102
Desmakiella variegata	--	421	1365	5112	1154	--	--	8052
Total	--	421	3412	12269	10388	53233	--	79723
<u>RED ALGAE</u>								
Agble	--	4630	--	--	--	--	--	4630
Enteromorpha spp.	--	5051	50489	17383	5772	31314	--	110009
Gelidium spp.	--	2526	258591	223930	39248	--	--	524295
Gracilaria	--	6314	62771	14315	1154	31314	--	115868
Total	--	18521	371851	255628	46174	62628	--	754802
<u>OTHER GREEN ALGAE</u>								
Chaetomorpha	28	--	2729	--	--	--	--	28
Cladophora	--	421	--	10225	1154	--	--	14529
Cladoniopsis	--	2946	--	--	--	--	--	2946
Dictyosphaeria	--	421	--	1023	1154	--	--	2598
Gracilaria	--	842	8187	--	--	--	--	9029
Gracilaria flabellum	--	--	682	--	30013	112730	--	143425
Gracilaria gracilis	--	66504	441442	161557	49638	12525	--	731666
Gracilaria macroloba	--	842	10917	59306	15007	194145	--	280217
Total	28	71976	463957	232111	96966	319400	--	1184438
<u>BLUE GREEN ALGAE</u>								
Cyanothrix	14	842	17057	--	--	--	--	17913

TABLE 4
ESTIMATED SPECIES-WISE PRODUCTION OF SEAWEEDS (IN KG) ALONG GULF OF MANNAR ISLANDS.

	SECOND SURVEY							Total
	Depth in metre							
	Intertidal	0.0-0.25	0.25-0.75	0.75-1.25	1.25-1.75	1.75-3.0	3.0-4.0	
<u>BROWN ALGAE</u>								
<u>Gracilaria</u>								
<i>G. acerosa</i>	--	15153	6823	--	2309	--	--	24285
<i>G. edulis</i>	71	126274	77781	--	--	--	--	204126
<i>G. certicata</i>	--	--	--	--	1155	50102	--	50102
Other <i>Gracilaria</i> spp.	--	--	92791	--	27704	25051	--	118997
<i>Gracilaria</i> spp.	85	33673	293384	52148	27704	--	--	406994
Total	156	175100	470779	52148	31168	75153	--	804504
<u>OTHER RED ALGAE</u>								
<i>Gracilaria oblongata</i>	--	--	--	--	5773	3131	--	8904
<i>Gracilaria barnemannii</i>	--	--	3548	6135	--	--	--	9683
<i>Gracilaria fragilissima</i>	--	18520	1366	10225	13852	12525	--	56488
<i>Gracilaria</i> spp.	14	--	--	--	110819	--	--	110833
<i>Gracilaria</i>	85	--	--	4090	--	--	--	4175
<i>Gracilaria</i>	170	--	--	--	--	--	--	170
<i>Gracilaria</i>	--	--	--	2045	--	--	--	2045
<i>Gracilaria</i>	127	34094	40938	--	--	--	--	75159
<i>Gracilaria</i>	--	1263	3411	--	--	--	--	4674
Total	396	53877	49263	22495	130444	15656	--	272131
<u>BROWN ALGAE</u>								
<i>Gracilaria</i>	1062	263068	230613	55216	235490	576175	--	1361624
<i>Gracilaria</i> spp.	71	167523	4094	--	4617	--	--	176305
<i>Gracilaria</i> spp.	--	15995	2729	--	--	--	--	18724
<i>Gracilaria</i>	--	33673	--	--	--	--	--	33673
<i>Gracilaria</i> spp.	170	63137	45714	4090	8081	--	--	121192
Total	1303	543396	283150	59306	248188	576175	--	1711518

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>OTHER BROWN ALGAE</u>								
Dietyota	--	14311	19786	19428	2309	--	--	55834
Steechospermum	--	--	--	4090	--	--	--	4090
Ulothrix asperum	--	1684	--	--	--	--	--	1684
Ulothrix variegata	--	--	4094	17383	93503	65759	--	180739
Ulothrix schimperi	--	37882	28656	--	--	--	--	66538
Ulothrix	--	--	--	23518	16161	--	--	39679
Ulothrix stellata	--	2525	--	--	--	--	--	2525
Ulothrix	--	842	--	--	--	--	--	842
Ulothrix fastigiata	--	1684	27974	--	--	--	--	29658
Total	--	58928	80510	64419	111973	65759	--	381589
<u>GREEN ALGAE</u>								
<u>Edible</u>								
Enteromorpha spp.	56	37882	--	--	--	--	--	37938
Ulva spp.	--	74922	192406	40900	11544	75153	--	394925
Galearpa spp.	--	147319	88697	40900	218173	109598	--	604687
Sodium spp.	--	39566	40937	--	--	--	--	80503
Total	56	299689	322040	81900	229717	184751	--	1118053
<u>OTHER GREEN ALGAE</u>								
Chaetomorpha	--	--	--	--	13852	--	--	13852
Cladophora	184	2525	--	2046	--	--	--	4755
Halimeda gracilis	--	203300	901306	289370	527545	175357	--	2096878
Halimeda macroloba	--	--	--	47055	10389	18789	--	76213
Total	184	205825	901306	338451	551786	194146	--	2191698
<u>BLUE GREEN ALGAE</u>								
Cyngbya	--	--	--	102251	--	--	--	102251
Phormidium	--	1263	--	--	--	--	--	1263
Total	--	1263	--	102251	--	--	--	103514

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>BROWN ALGAE</u>								
<i>Boechosperu</i>	--	1383	--	--	--	--	--	1383
<i>Boeckmanniella variegata</i>	--	615	--	7382	23041	31480	--	62518
<i>Conaria crenata</i>	101	461	--	--	27521	34978	--	63061
Total	101	2459	--	7382	50562	66458	--	126962
<u>GREEN ALGAE</u>								
<i>Ulva</i> spp.	9231	3981	11368	9731	--	--	--	44311
<i>Ulterpa</i> spp.	--	307	3789	2349	42243	121257	16022	185967
Total	9231	4288	15157	12080	42243	121257	16022	230278
<u>OTHER GREEN ALGAE</u>								
<i>Chaetomorpha</i>	--	4609	211	--	--	--	--	4820
<i>Closterium</i>	--	154	--	--	--	--	--	154
<i>Pyrosoma</i>	--	5070	--	--	1280	--	--	6350
<i>Setia flabellum</i>	--	--	--	--	--	111930	28838	140768
<i>Ulmeda gracilis</i>	--	615	211	--	--	--	--	826
<i>Ulmeda macroloba</i>	--	--	--	--	2560	5830	--	8390
Total	--	10448	422	--	3840	117760	28838	161308
<u>BLUE GREEN ALGAE</u>								
Total	--	--	2105	--	--	--	--	2105

TABLE 6
ESTIMATED SPECIES-WISE PRODUCTION OF SEAWEEDS (IN KG) ALONG THE PALK BAY COASTLINE
SECOND SURVEY

	Depth in metre						Total
	Intertidal	0.0-0.25	0.25-0.75	0.75-1.25	1.25-1.75	1.75-3.0	
<u>BROWN ALGAE</u>							
<u>Chlorophytes</u>							
<i>Ulva</i> <i>acerosa</i>	--	894	8718	4777	--	--	14389
<i>Ulva</i> <i>edulis</i>	--	398	--	--	--	--	398
<i>Ulva</i> <i>corticata</i>	--	--	16345	--	--	--	16345
<i>Enteromorpha</i> spp.	--	2386	5448	--	--	--	7834
<i>Enteromorpha</i> spp.	--	2088	6810	--	16566	--	25464
Total	--	5766	37321	4777	16566	--	64430
<u>RED ALGAE</u>							
<i>Gracilaria</i> <i>parvifolia</i>	--	--	5448	--	--	--	5448
<i>Gracilaria</i> <i>parvifolia</i>	--	--	--	--	4527	--	4527
<i>Gracilaria</i> <i>parvifolia</i>	--	--	817	29962	5798	--	36577
<i>Gracilaria</i> <i>parvifolia</i>	--	--	15800	2606	1657	67899	87962
<i>Gracilaria</i> <i>parvifolia</i>	--	199	--	--	--	--	199
<i>Gracilaria</i> <i>parvifolia</i>	--	--	1636	--	1657	--	3293
Total	--	199	23701	32568	9112	72426	138006
<u>GREEN ALGAE</u>							
<u>Chlorophytes</u>							
<i>Enteromorpha</i> spp.	--	--	62111	54713	3313	--	120137
<i>Enteromorpha</i> spp.	--	1392	74097	119412	103535	6036	304472
<i>Enteromorpha</i> spp.	--	5567	26969	868	--	--	33404
Total	--	6959	163177	174993	106848	6036	458013

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>RED BROWN ALGAE</u>								
Botryota spp.	--	--	--	868	--	--	--	868
<u>RED GREEN ALGAE</u>								
<u>Chlorophyta</u>								
Chloromorpha	--	2882	--	--	--	--	--	2882
Cladophora spp.	--	398	45766	63397	59636	--	--	169197
Cladophora spp.	--	5269	8718	37169	19713	12070	--	82939
Total	--	8549	54484	100566	79349	12070	--	255018
<u>RED GREEN ALGAE</u>								
Chlorella gracilis	--	--	21793	294841	954181	253488	--	1524303
Chlorella macroloba	--	--	7355	3040	2485	57377	7265	77522
Total	--	--	29148	297881	956666	310865	7265	1601825
<u>RED GREEN ALGAE</u>								
Chromocidium	--	994	--	--	--	--	--	994

TABLE - 7

REGION-WISE AREA SURVEYED WITH THE DEPTH-WISE BREAK UP
(Area in square metre)

Region	Depth in metre				Total			
	0.0-0.25	0.25-0.75	0.75-1.25	1.25-1.75		1.75-3.0	3.0-4.0	
Gulf of Mannar Shoreline	58000	720750	989500	1307750	2076500	6917250	7373250	19,443,000
Gulf of Mannar	76440	4545845	7368733	11043117	12467130	33818900	29505760	98,825,925
Palk Bay	177750	676000	1852437	2952750	5632320	11026027	7049250	28,600,754

TABLE 8

TOTAL STANDING CROP ESTIMATED (FRESH WEIGHT IN KG)

Group of Algae	Gulf of Mannar Shoreline		Gulf of Mannar Islands		Palk Bay Shoreline	
	Ist Survey	II Survey	I Survey	II Survey	I Survey	II Survey
Diatomophytes	273949	48383	775293	804504	101986	64430
Other Red Algae	107212	191367	434586	272131	379573	138006
Dinophytes	285113	1015493	6879000	1711518	1104171	458013
Other Brown Algae	2609	95122	79723	381589	126962	868
Visible Green Algae	111391	6412	754802	1118053	230278	255018
Other Green Algae	845164	78670	1184438	2191698	161308	1601825
Blue Green Algae	13028	--	17913	103514	2105	994
Total	1638466	1435447	10125755	6583007	2106383	2519154