APPENDIX 1. Summary of Abundance of Benthic Organisms from the Survey Reefs.

Reefs are grouped into NE, NW, SW and SE sectors of Shoalwater Bay. Figures show mean percentage cover for each benthic group from two groups of five 20 m line intersect transects on each reef, along with standard deviations in italics, and the grand mean from each group of reefs. Reef abbreviations are from table 1.

A. NE Sector Reefs.

Reef:	NR		Ho		Un		Mu		TP		Grand mean	
Encrusting group	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*
Sargassum spp.	17.3	*7.4*	12.9	*7.1*	12.1	*6.6*	16.1	*8.3*	19.1	*5.3*	15.5	*7.2*
Turfing algae	20.9	*6.2*	22.7	*5.9*	21.1	*6.9*	23.4	*3.4*	28.5	*8.5*	23.3	*6.7*
Seagrasses	0.0	*0.0*	0.0	*0.0*	0.0	*0.0*	0.0	*0.0*	0.0	*0.0*	0.0	*0.0*
Sponges	0.2	*0.6*	0.6	*1.0*	0.2	*0.5*	1.4	*2.2*	0.3	*0.5*	0.6	*1.2*
Total hard coral	46.2	*18.5*	53.8	*12.2*	60.7	*13.4*	41.2	*10.9*	24.0	*7.1*	45.2	*17.7*
Pocilloporidae	2.4	*2.0*	3.0	*2.6*	0.6	*1.0*	11.4	*4.5*	2.4	*1.6*	2.2	*2.4*
Acroporidae	35.3	*20.5*	31.2	*9.2*	55.0	*15.2*	6.1	*6.0*	8.7	*5.4*	29.5	*20.2*
Montipora	17.6	*13.8*	17.7	*6.3*	20.4	*7.3*	2.6	*3.6*	5.2	*2.6*	14.5	*9.4*
Acropora	17.7	*11.7*	13.5	*7.1*	34.6	*17.6*	17.5	*7.1*	3.4	*2.6*	15.1	*15.0*
Poritidae	1.4	*1.6*	1.5	*1.4*	0.6	*1.3*	2.5	*1.4*	0.5	*0.5*	1.3	*1.4*
Siderastreidae	0.9	*1.6*	2.1	*1.8*	0.1	*0.2*	0.5	*0.7*	0.8	*1.7*	0.8	*1.5*
Mussidae	0.4	*0.6*	0.3	*0.7*	0.2	*0.3*	1.1	*2.5*	0.5	*0.5*	0.5	*1.2*
Faviidae	3.8	*3.2*	3.5	*2.8*	2.6	*2.1*	6.7	*2.8*	4.0	*2.9*	4.1	*3.0*
Dendrophylliidae	1.4	*1.7*	11.8	*13.5*	1.3	*1.4*	9.3	*6.5*	5.3	*5.4*	5.8	*8.1*
Total soft coral	4.2	*4.0*	4.1	*3.9*	2.2	*2.5*	2.1	*2.1*	1.7	*1.4*	2.9	*3.0*

B. NW Sector Reefs.

Reef:	Co		FT		Li		WR		Grand mean	
Encrusting group	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*
Sargassum spp.	24.8	*5.7*	24.0	*8.4*	31.3	*4.1*	19.8	*6.4*	25.0	*7.4*
Turfing algae	16.3	*4.0*	17.5	*5.5*	14.0	*2.2*	22.6	*5.5*	17.6	*5.4*
Seagrasses	0.7	*1.4*	0.0	*0.0*	7.1	*8.1*	0.6	*1.7*	2.1	*5.0*
Sponges	1.2	*1.2*	0.8	*1.6*	0.3	*0.4*	0.5	*0.7*	0.7	*1.1*
Total hard coral	16.1	*6.4*	23.2	*9.6*	21.6	*6.8*	43.1	*11.2*	26.0	*13.3*
Pocilloporidae	0.5	*0.7*	2.3	*1.7*	2.1	*1.2*	1.4	*1.9*	1.6	*1.6*
Acroporidae	5.9	*5.7*	9.1	*6.6*	9.7	*5.1*	21.0	*9.7*	11.4	*8.9*
Montipora	4.7	*4.3*	6.3	*6.7*	6.5	*3.7*	8.2	*5.3*	6.4	*5.1*
Acropora	1.2	*2.3*	2.8	*2.7*	3.2	*3.9*	12.8	*8.1*	5.0	*6.5*
Poritidae	2.1	*2.5*	1.0	*1.1*	2.4	*1.7*	0.7	*1.0*	1.6	*1.8*
Siderastreidae	0.2	*0.5*	0.7	*1.0*	1.1	*1.2*	1.4	*1.5*	0.9	*1.2*
Mussidae	0.0	*0.0*	0.4	*0.7*	0.1	*0.2*	0.9	*1.5*	0.3	*0.9*
Faviidae	2.4	*1.7*	3.3	*2.2*	3.4	*2.0*	5.3	*2.4*	3.6	*2.3*
Dendrophylliidae	4.7	*3.1*	5.7	*3.2*	2.0	*2.3*	11.0	*6.4*	5.8	*5.1*
Total soft coral	2.6	*2.0*	1.8	*1.4*	1.2	*1.0*	2.2	*2.2*	2.0	*1.7*

C. SW Sector Reefs.

Reef:	Os		Cl		Sw		Sn		Ed		Grand mean	
Encrusting group	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*
Sargassum spp.	20.0	*8.0*	42.0	*7.9*	22.0	*5.9*	17.0	*12.3*	20.6	*7.8*	24.3	*12.3*
Turfing algae	17.9	*3.2*	16.0	*8.4*	7.4	*3.0*	7.9	*1.9*	19.6	*5.6*	13.7	*7.0*
Seagrasses	0.0	*0.0*	17.7	*20.1*	0.0	*0.0*	0.0	*0.0*	0.0	*0.0*	3.5	*11.2*
Sponges	0.6	*0.5*	0.2	*0.3*	0.3	*0.5*	0.1	*0.3*	0.2	*0.4*	0.3	*0.4*
Total hard coral	44.8	*8.6*	7.3	*4.9*	51.2	*9.6*	66.2	*21.1*	38.2	*10.1*	41.5	*22.9*
Pocilloporidae	1.1	*1.0*	0.3	*0.7*	0.9	*1.2*	0.8	*1.0*	0.8	*0.6*	0.8	*0.9*
Acroporidae	25.1	*9.8*	1.7	*2.7*	38.1	*11.7*	51.4	*21.3*	18.1	*7.7*	26.9	*20.8*
Montipora	16.4	*6.1*	1.7	*2.7*	33.1	*11.2*	44.1	*25.1*	14.4	*6.7*	21.9	*19.5*
Acropora	8.6	*6.9*	0.0	*0.0*	5.0	*6.8*	7.4	*7.2*	3.7	*3.4*	4.9	*6.2*
Poritidae	1.6	*1.4*	1.1	*1.4*	2.3	*2.8*	1.2	*1.2*	2.0	*2.3*	1.6	*1.9*
Siderastreidae	1.3	*0.9*	0.1	*0.2*	1.1	*1.3*	0.6	*1.0*	1.1	*1.5*	0.8	*1.1*
Mussidae	1.2	*2.0*	0.1	*0.3*	0.2	*0.4*	0.0	*0.0*	0.0	*0.0*	0.3	*1.0*
Faviidae	3.8	*3.6*	1.3	*1.4*	2.4	*1.4*	3.2	*2.5*	5.1	*3.3*	3.2	*2.8*
Dendrophylliidae	9.7	*5.4*	2.7	*1.9*	5.8	*3.0*	8.4	*9.1*	9.7	*5.4*	7.3	*5.9*
Total soft coral	5.3	*2.7*	3.5	*2.8*	1.8	*1.2*	0.8	*1.2*	8.2	*4.6*	3.9	*3.8*

D. SE Sector Reefs.

Reef:	Ba		Cn		Bl		Grand mean		PB	
Encrusting gp.	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*	mean	*sd*
Sargassum spp.	17.3	*6.1*	11.1	*4.5*	0.0	*0.0*	11.4	*8.6*	28.3	*14.1*
Turfing algae	14.4	*2.5*	23.6	*5.5*	8.8	*1.6*	15.3	*6.3*	17.7	*4.1*
Seagrasses	0.0	*0.0*	0.0	*0.0*	0.0	*0.0*	0.0	*0.0*	0.0	*0.0*
Sponges	0.3	*0.8*	0.4	*0.5*	1.6	*1.0*	0.6	*0.9*	1.3	*1.8*
Total hard coral	32.7	*13.1*	34.3	*12.9*	54.8	*14.6*	38.6	*15.9*	16.5	*10.8*
Pocilloporidae	1.1	*1.1*	1.1	*1.1*	0.2	*0.2*	0.9	*1.0*	2.8	*4.6*
Acroporidae	16.1	*6.3*	10.6	*11.6*	25.8	*13.3*	17.1	*10.8*	2.9	*3.8*
Montipora	13.8	*5.3*	6.9	*6.7*	18.4	*9.5*	13.2	*7.7*	2.9	*3.8*
Acropora	2.3	*3.2*	3.7	*5.2*	7.4	*11.4*	3.9	*4.4*	0.0	*0.0*
Poritidae	2.0	*1.6*	1.6	*2.0*	2.8	*3.7*	2.1	*2.3*	2.6	*4.3*
Siderastreidae	1.6	*1.9*	2.5	*1.6*	3.9	*1.9*	2.4	*2.0*	0.7	*1.2*
Mussidae	0.1	*0.1*	0.8	*0.8*	0.7	*1.0*	0.4	*0.7*	0.1	*0.3*
Faviidae	3.9	*3.3*	6.7	*3.0*	10.4	*3.6*	6.2	*4.1*	1.6	*2.4*
Dendrophylliidae	6.9	*8.8*	9.0	*3.3*	9.7	*4.8*	8.1	*6.7*	5.7	*3.0*
Total soft coral	9.1	*5.0*	15.3	*4.4*	24.4	*6.6*	14.5	*8.1*	0.9	*2.6*

APPENDIX 2. Shoalwater Bay Fringing Reef Hard Coral Species Lists.

Table lists species recorded during surveys of ten 20 m transects, plus those seen during a 30 min haphazard swim covering the depth range present in the survey areas. X - indicates species present at that location; a number indicates number of species recorded in a genus or group. For location abbreviations see table 1. Note: R indicates species that are rare in the GBR region.

Location:	PB	NR	Ho	Un	Mu	TP	FT	Co	Li	WR	Os	Cl	Sw	Sn	Ed	Ba	Cn	Bl
Total No. Species	**41**	**55**	**55**	**44**	**53**	**53**	**37**	**42**	**56**	**49**	**58**	**23**	**52**	**51**	**48**	**56**	**36**	**50**
FAMILY - Species:																		
POCILLOPORIDAE																		
Pocillopora damicornis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Seriatopora hystrix		X	X	X	X	X	X	X	X					X				X
Stylophora pistillata		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
ACROPORIDAE																		
Montipora (no. species) 2R	3	8	6	5	5	6	4	4	6	5	6	3	6	7	6	6	4	6
Acropora palifera		X	X	X	X	X												
A. brueggemanni						X			X									
A. samoensis R			X			X			X		X			X				
A. digitifera			X															
A. glauca R		X	X	X	X	X	X	X		X	X	X		X	X		X	X
A. nobilis		X	X	X						X						X		
A. formosa			X	X		X			X		X		X	X		X		
A. microclados			X	X		X								X				
A. latistella			X		X			X	X	X	X							X
A. millepora											X							
A. tenuis					X													
A. cytherea		X	X	X	X	X				X	X				X		X	X
A. hyacinthus		X	X	X		X												
A. subulata			X		X	X			X	X	X					X		X
A. cerialis														X	X	X		
A. nasuta		X		X	X	X				X	X							
A. valida	X	X	X	X	X	X			X	X	X		X	X	X	X		
A. divaricata	X	X	X	X	X	X			X	X				X	X			X
A. secale			X															
A. paniculata R		X	X		X	X												
A. solitaryensis R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
A.streopora myriophthalma		X			X	X	X	X	X	X	X				X		X	X
PORITIDAE																		
Porites massive (no. species)	2	1	1		1		1	1	2	2	2	2	2	2	1	2	1	1
P. lichen		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Goniopora (no. species)	2	3	2	2	3	2	3	4	3	3	3	2	3	3	2	3	3	4
Alveopora (no. species)					1				1	1	2		2	1	1	2		
SIDERASTREIDAE																		
Psammocora contigua		X	X										X			X		
P. superficialis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Coscinarea columna	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AGARICIIDAE																		
Pachyseris speciosa					X	X					X		X	X	X	X		
FUNGIIDAE																		
Podabacia crustacea									X		X			X				
OCULINIDAE																		
G. fascicularis	X		X					X					X	X	X	X		
PECTINIIDAE																		
Echinophyllia aspera	X				X				X					X	X			
E. orpheensis									X				X			X		
Mycedium elephantotus		X	X	X	X	X			X	X	X		X	X	X	X	X	X

Location:	PB	NR	Ho	Un	Mu	TP	FT	Co	Li	WR	Os	Cl	Sw	Sn	Ed	Ba	Cn	Bl
FAMILY - Species:																		
MUSSIDAE																		
Acanthastrea echinata		X	X								X							
A. hillae R	X	X	X	X	X	X	X		X	X	X				X	X		X
A. bowerbanki R	X	X	X	X	X	X	X		X	X	X		X			X		X
Lobophyllia hemprichii	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L. corymbosa													X					
MERULINIDAE																		
Hydnophora exesa	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
H. microconus	X	X		X						X								
FAVIIDAE																		
Favia (no. species) 1R	3	3	3	3	2	3	3	3	5	5	4	2	3	3	3	4	3	5
Favites (no. species)	2	3	2	2	2	2	3	2	2	2	3		1	1	2	3	2	3
Goniastrea (no. species)	2	2	2	1	2	2	2	2	1	1	2		1	1	3	2	1	1
Platygyra (no. species)	3	3	2	2	3	2	2	3	2	2	2	2	3	3	2	2	2	2
Leptoria phrygia	X																	
Plesiastrea versipora R	X		X		X	X		X	X		X	X	X		X	X	X	X
Leptastrea transversa	X			X	X	X		X	X		X	X	X	X	X	X		X
Cyphastrea serailia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Moseleya latistellata	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X
CARYOPHYLLIIDAE																		
Euphyllia ancora	X	X				X		X	X		X		X			X		X
E. glabrescens		X	X		X								X			X		
E. divisa									X	X	X		X	X		X		
E. cristata													X	X				
DENDROPHYLLIIDAE																		
Turbinaria peltata	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T. patula R	X								X		X		X		X	X	X	X
T. frondens	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T. mesenterina	X							X					X					
T. stellulata	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
T. bifrons R				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X