

ADMINISTRATION AND FINANCE

Total annual funding for the COTS Program and budget allocations for projects are given in table 1. All funds have been provided from the Commonwealth Government. Allocations to AIMS appear as a single item in table 1 but are broken down into individual tasks in table 2.

As well as funding from GBRMPA the Australian Institute of Marine Science has put considerable resources into the Study. Notional figures for each project are given in table 2. Most of this support comes in the form of ship-time, computing, staff and stores. The Institute also provides large amounts of specialised equipment (e.g. Remote Operated Vehicle, computers, spectrophotometers, freeze dryers) without charge. As well, it has paid for the visits of several scientists from overseas (e.g. Dr John Lawrence, University of South Florida) under its Visiting Investigator(s) Program.

As figure 5 shows, the total funding for the Program was initially high following the review by Professor Don Anderson but, with declining COTS outbreaks, Program funding also declined. This reduction was consistent with a recommendation of Dr Johannes in his 1992 review (see appendix 4). But as Johannes noted, 'one does not disband the army when the current war is over' and funding for COTS research and monitoring has been maintained (albeit at a lower level) despite waning of the issue. At the current time, the COTS Program funding is at its lowest level for more than ten years.

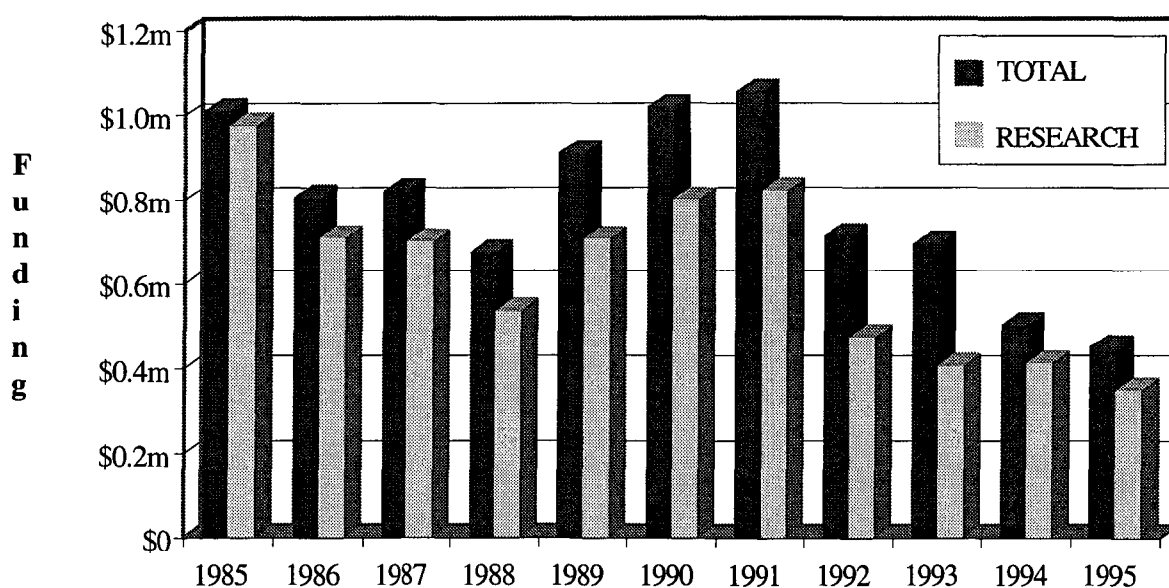


Figure 5. Total (research and monitoring) and research (only) funding for the GBRMPA COTS Program from the 1985-86 to 1995-96 financial years

Despite declining funds, the average cost of projects has remained relatively stable (figure 6). Allocation of funds to the seven priority research areas for the period of the COTSREC Program are shown in figure 7.

Cost Code	Description	89-90 (\$)	90-91 (\$)	91-92 (\$)	92-93 (\$)	93-94 (\$)	94-95 (\$)	TOTAL (\$)
0612057	GBRMPA staff salaries	95 500	110 000	115 000	92 000	90 000	90 000	592 500
0612077	Travel & subsistence	20 000	20 000	18 179	18 000	9 525	9 500	85 704
0612094	COTSREC chair expenses	5 000	5 000	5 000	3 000	500	500	19 000
0612199	Incidentals	8 000	10 000	8 089	5 000	4 625	3 500	39 714
0612202	AIMS component	459 000	574 685	659 167	489 500	439 975	151 240*	2 773 567
0612204	Fiji COTS population dynamics	5 000	4 000		1 000	1 000	1 000	12 000
F10105	Remote sensing	3 032*						3 032
F10106	Pacific databases	5 000	4 000					9 000
F10108	COTS diseases	7 595*						7 595
0612210	Green Island COTS & Corals	23 000	27 430		23 000			73 430
F10111	North GBR sediments	8 500*						8 500
0612219	Mainland runoff	10 000						10 000
0612225	Aerial survey	3 000*						3 000
F10127	Survey comparisons	500*						500
F10128	Fish predators-catch	2 500*						2 500
F10130	Green Island pilot study	6 287*						6 287
F10133	Surface sediments	3 855*						3 855
F10134	Heron sediments	5 890*						5 890
F10136	South GBR sediments	1 860*						1 860
0612237	Massive corals	18 000	5 000	4 000				26 000
F10138	Predation anecdotes	2 000						2 000
F10139	Manta tow bias	11 500	27 889					39 389
F10140	Cairns survey	45 000						45 000
F10141	COTS & coral trout surveys	6 090						6 090
0612242	Age determination	33 750	41 000	21 200	6 900			102 850
F10143	Large scale models	36 000	30 000					66 000
0612244	Predation by fish	50 000	50 000	115 000	79 925	11 969		306 894
F10145	Tritons	10 000	5 000					15 000
0612246	Predation models	23 037	22 000					45 037
F10147	Fund raising	10 000						10 000
0612248	Bioerosion		15 000	18 000	15 000	6 850		54 850
0612249	Oceanography review		13 500	8 500				22 000
F10150	Geology Working Group		20 000					20 000
0612252	Monoclonal antibodies			6 000	7 000	16 375	14 500	43 875
0612253	1980s outbreak models			45 000				45 000
0612504	Hydrodynamic model test			20 000		20 000		40 000
F10155	Connectedness testing			5 500				5 500
0612301	COTS survey database					2 000		2 000
0612501	Backup rearing facility					42 250	64 000	106 250
	Education/Extension	6 000	11 000	7 000		8 000	11 000*	43 000
0612302	Local controls				4 000	12 000	12 750*	28 750
0612507	Green Island shoals survey					2 000		2 000
	GBRMPA Library					2 000		2 000
	Model standards					15 000	15 000	30 000
	Unallocated		34 893	408		5 500		40 801
0612513	Fine-scale surveys						90 000*	90 000
0612510	COTS population dynamics						36 645*	36 645
	Committed for next year			11 750				11 750
	TOTAL	910 531	1 020 897	1 056 200	712 400	693 194	502 135	4 879 156

Table 1. Funds allocated to projects under the Authority's COTSREC Program between the 1989-90 and 1994-95 fiscal periods

Footnotes:

- # final payments for projects initiated under the COTSARC Program
- * funding from the CRC Reef Research Centre
- + includes \$30 000 from the CRC Reef Research Centre

Task No.	1989-90		1990-91		1991-92		1992-93		1993-94		1994-95		TOTAL
	GBRMPA	AIMS	GBRMPA	AIMS	GBRMPA	AIMS	GBRMPA	AIMS	GBRMPA	AIMS	GBRMPA	AIMS	
6.1.1	\$203 123	\$72 000	\$220 221	\$80 000	\$233 425	\$90 000	\$239 000	\$317 600	\$286 553	\$844 352			\$2 586 274
6.1.2		\$9 600											\$9 600
6.1.3	\$20 000	\$35 690											\$55 690
6.1.4	\$4 000	\$4 051		\$4 216	\$4 000	\$4 207							\$20 474
6.1.5	\$67 271	\$10 500	\$93 639	\$19 500	\$94 800	\$119 800	\$89 000	\$128 400					\$622 910
6.1.6	\$40 417		\$105 727	\$19 500	\$116 850	\$139 350	\$33 000	\$53 000					\$507 844
6.1.7	\$146 764	\$39 871	\$155 098	\$51 717	\$173 752	\$57 495	\$98 000	\$24 615			\$5 000		\$752 312
6.2.1			\$13 500	\$115 394	\$16 000	\$115 078	\$15 000	\$119 322	\$20 200	\$16 500			\$430 994
6.2.2			\$10 000										\$10 000
6.3.1					\$20 500		\$23 515		\$32 841	\$13 300	\$28 920	\$19 690	\$138 760
6.3.2					\$19 840	\$35 300							\$55 140
6.4.1							\$6 000						\$6 000
6.4.2							\$9 250		\$30 000	\$7 200			\$46 450
6.5.1									\$61 833	\$27 300	\$87 320	\$27 510	\$203 963
6.5.2									\$8 548	\$14 800			\$29 348
TOTAL	\$481 575	\$171 712	\$598 185	\$290 327	\$679 167	\$561 230	\$512 765	\$642 937	\$439 975	\$923 452	\$121 240	\$47 200	\$5 469 759

Table 2. Funds and in-kind contributions allocated to tasks within the AIMS Crown-of-thorns Study between the 1989-90 and 1994-95 fiscal periods. Refer to table 3 for Task titles.

Footnotes:

- a Support for Task 6.1.2 covered within Task 6.1.1.
- b Funds for Task 6.1.4 in 1989-90 carried forward into 1990-91 because of delays in research.
- c Funds for Task 6.2.1 in 1990-91 carried forward from previous financial year.
- d Funds for Task 6.2.2 in 1990-91 included \$5000 from previous financial year, and additional \$5000 of GBRMPA unspent funds from previous year.
- e Total allocation by GBRMPA in 1989-90 was \$459 000; additional \$16 000 support for L DeVantier and \$6575 uncommitted funds.
- f Total new allocation by GBRMPA in 1990-91 was \$574 685; additional funds carried over from previous year.
- g Total new allocation by GBRMPA in 1992-93 was \$489 500; additional funds carried over from previous year.

Task Number	Task Title (Investigator)
6.1.1	Broadscale surveys of the crown-of-thorns starfish and its effects on corals along the Great Barrier Reef (P. Moran)
6.1.2	Surveys of juvenile crown-of-thorns starfish (P. Moran)
6.1.3	Analysis of coral colonies, populations and communities: interpretation of outbreak history and projection of recovery (T. Done)
6.1.4	Assessment of the utility of mitochondrial DNA as a genetic marker in crown-of-thorns starfish (<i>Acanthaster planci</i>) (J. Benzie)
6.1.5	The role of predation in factors influencing the survival of small juvenile <i>Acanthaster planci</i> cultured in the laboratory (J. Keesing)
6.1.6	Reproductive biology of the crown-of-thorns starfish (R. Babcock)
6.1.7	Project support and administration
6.2.1	Investigation of the trophodynamic implications of outbreaks of the crown-of-thorns starfish (D Klumpp and T. Hart)
6.2.2	Impact of crown-of-thorns starfish on interactions among space occupants of coral reefs: predictive models of coral reef community structure (C. Johnson)
6.3.1	Feeding ecology of early developmental stages of <i>Acanthaster planci</i> (K. Okaji)
6.3.2	Assessing the role of dissolved organic matter and bacteria in the nutrition and energetics of <i>Acanthaster planci</i> (T. Ayukai)
6.3.3	Assessing the utility of <i>Linckia</i> to test the connectedness of reefs with reference to <i>A. planci</i> dispersal (J. Benzie)
6.4.1	A preliminary study on the availability of dissolved organic matter to the nutrition of crown-of-thorns starfish larvae (T. Ayukai)
6.4.2	Proposal to develop DNA markers for <i>Linckia laevigata</i> and <i>Acanthaster planci</i> to test hydrodynamic models and trace larval dispersal (J. Benzie and S. Williams)
6.5.1	Improvement of the rearing technique for the larvae and juveniles of crown-of-thorns starfish (T. Ayukai and C. Cartwright)
6.5.2	Significance of river runoff to the nutrient and plankton dynamics in the Cairns-Cooktown region: crown-of-thorns starfish perspective (T. Ayukai)

Table 3. AIMS Task numbers, titles and investigators

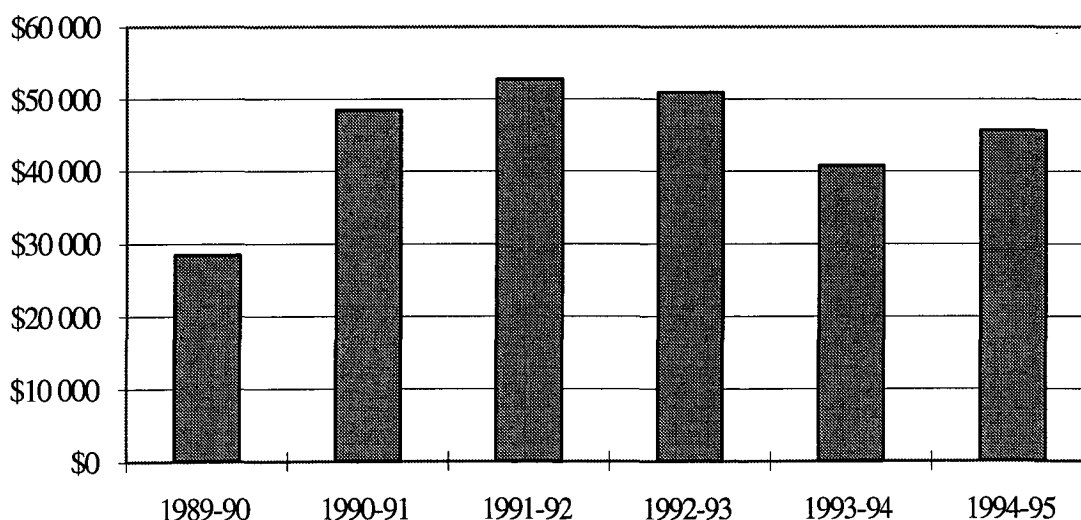


Figure 6. Average project cost over the duration of the COTSREC Program

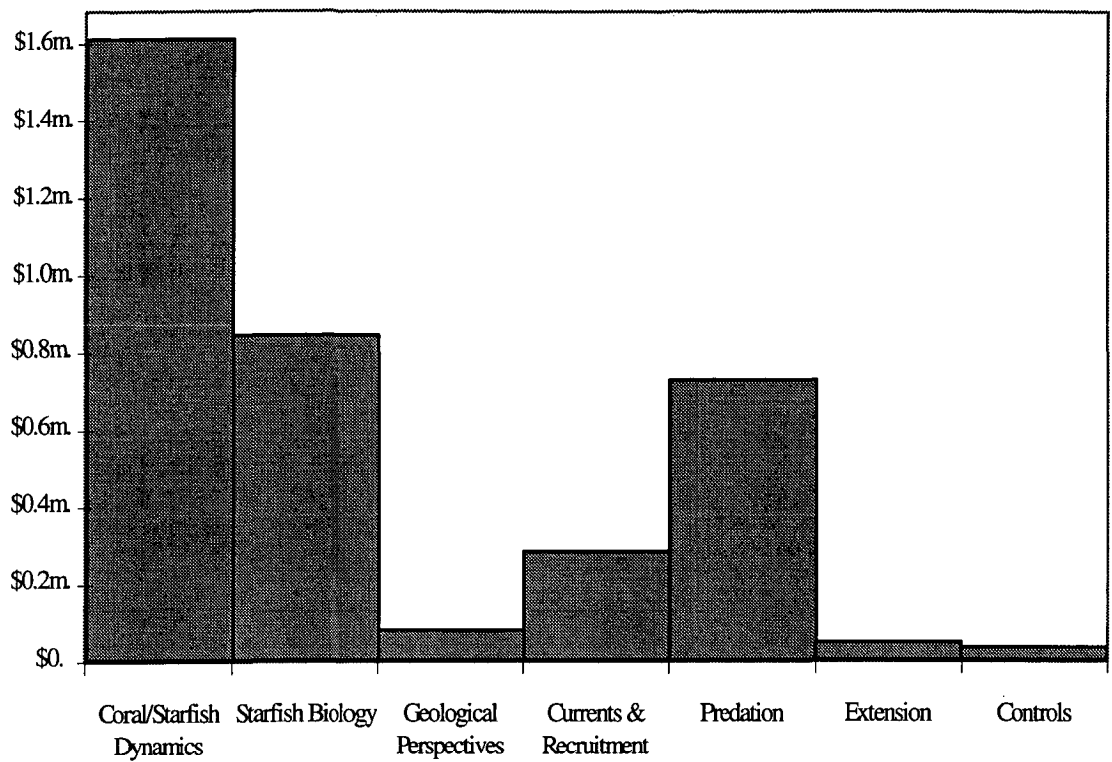


Figure 7. Allocation of funds to Program areas over the period July 1989 to June 1995

