

7 EFFECTS ON THE COLLECTION SITE

There would be little sense in transplanting coral from one reef or site to another if collection of transplants produced extensive damage to the site from which the corals were collected; in effect this is just transferring the site of the damage. It would be preferable to select sites and corals in such a way as to minimise the impact at the collection site.

The possibility of severe damage to the collection site is reduced by the fact that very few species or colonies meet the prerequisites for suitable transplants. Even if all suitable coral was removed from an area, a fairly high proportion of the coral cover would remain.

At the site from which we collected all coral for our transplantation experiments, we measured coral cover before and after a known collection effort. We collected corals from an area approximately 50 m x 50 m, and over one year we removed 430 branches of staghorn coral, 24 pocilloporid corals and 24 faviid corals. The change in coral cover at the site is shown in table 2.

Table 2. Coral cover at the Middle Cay Reef site before and after collection of coral fragments for transplantation.

Coral category	%cover at 11/8/85	% cover at 19/6/86
Hard coral cover (total)	25.6	14.2
Soft coral cover	13.8	11.2
Number of corals (4x30 m lines)	113.0	75.0
Branching <i>Acropora</i>	18.0	6.1
Other <i>Acropora</i>	1.9	1.7
Pocilloporids	1.1	0.8
<i>Porites</i>	1.9	3.3
Faviids	1.4	1.5

The coral cover changed significantly for the staghorn corals, but cover was still relatively high compared to the other groups. The site still looked like a thriving community and the damage caused by removal of so many branches was not obvious. Where branches had been removed the tips were regrowing rapidly.

We recommend that, in general, corals should be collected over as wide an area as possible. This would reduce the impact at any one site, and depending on the number of corals collected, the change would probably be undetectable. It is certainly possible that in areas of high coral cover, growth of some colonies is limited by competition for space with neighbouring colonies. In such flourishing communities, release from competition by removing some branches or colonies would allow a more rapid growth of other colonies and the space would be quickly occupied.

We also recommend about 50% of each colony of branching coral be left intact at the collection site. The most hazardous life history stage is the recruitment and early growth

phase, and if a substantial part of a colony remains, the chances of its surviving and regrowing are much greater than that of a coral planulae attempting to settle on the vacated space.