



# Coral Restoration in Fiji

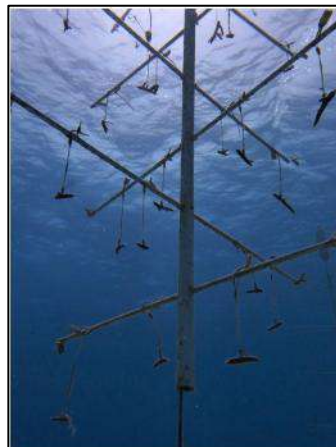
- Most restoration projects in Fiji involve fragmentation and replanting of corals
- Most use branching *Acropora* and similar fast-growing “weedy” coral species



Coral fragments grown on tray tables and artificial reef substrate in Fiji  
Rope and metal frame floating nurseries



Corals of several species growing in a rope nursery near Bolinao in the Philippines. Each colony started as small fragment (G. Levy).



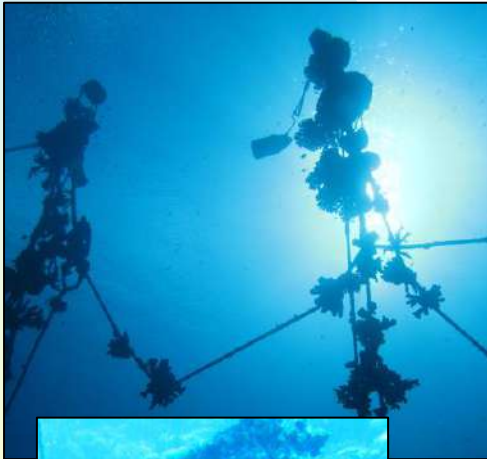
A coral tree nursery in the Commonwealth of the Northern Mariana Islands. Credit: Pheons David, Division of Coastal Resources Management, CNMI.

A few sculpture parks have been proposed

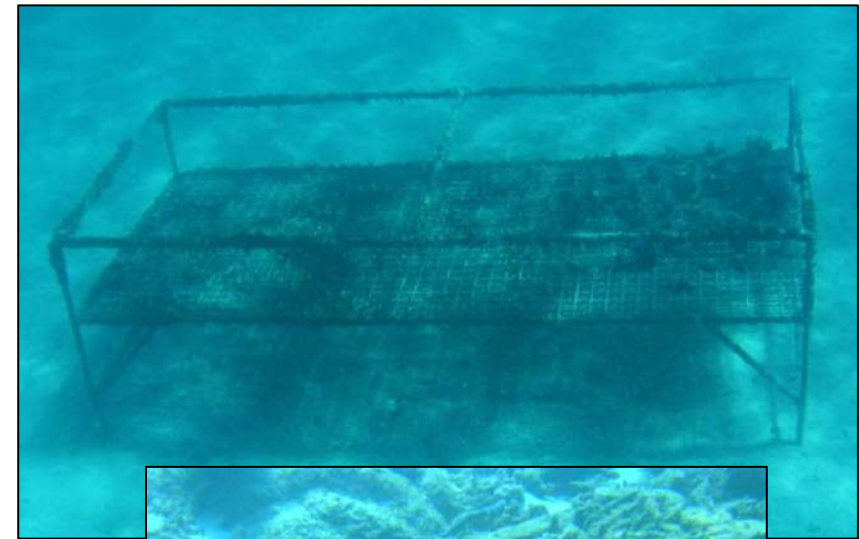


## Why some projects fail

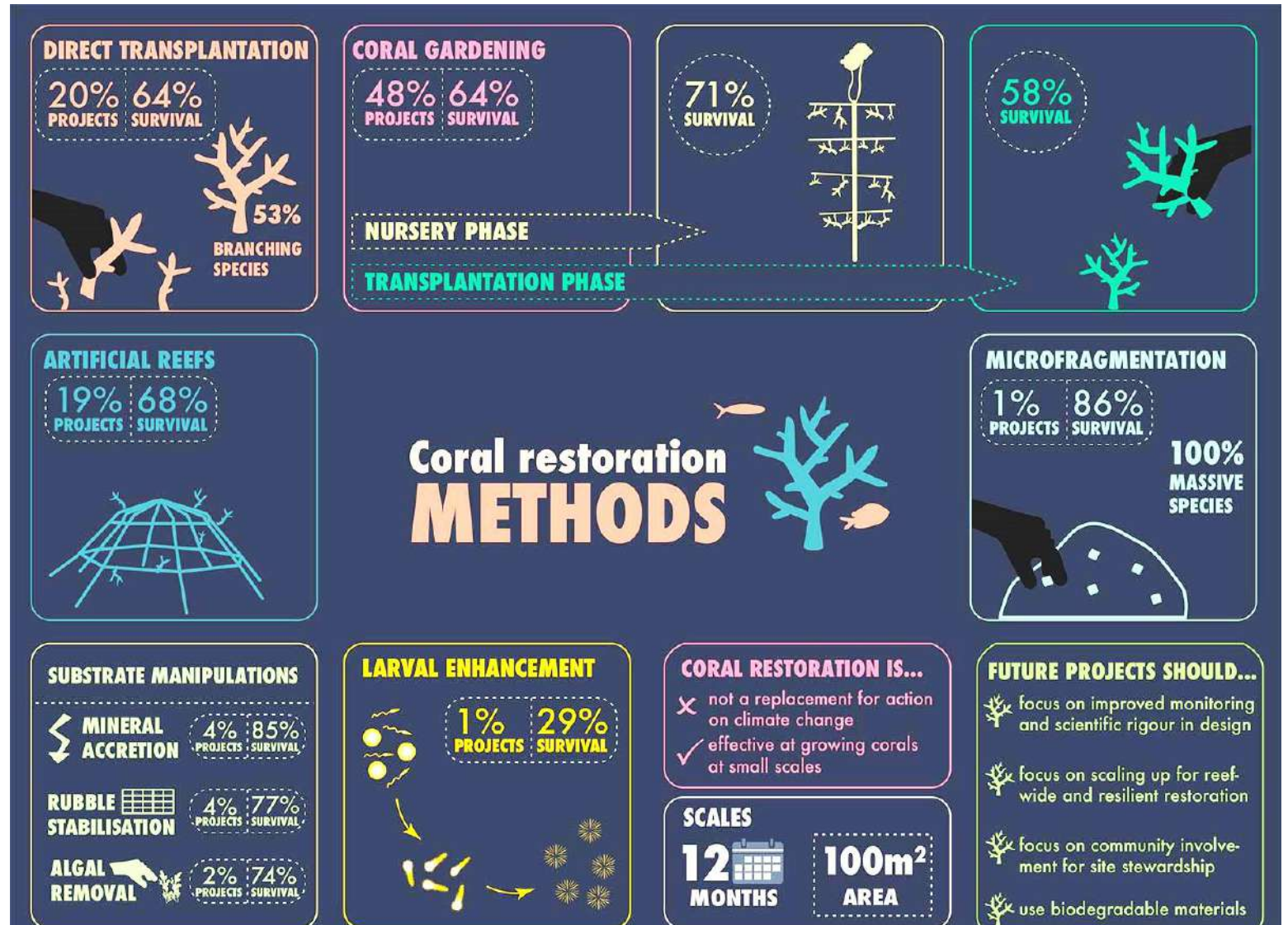
- Breaking up healthy corals and planting them in areas where corals die
- Not addressing reasons why corals did not grow, or died in the first place
- Planting a low diversity of species
- No plan to remove nursery gear if projects fail



Yasawa Islands,  
Viti Levu & Taveuni



# Coral Restoration success rates



# Small scale restoration is not going to “save the reefs”

## CORAL RESTORATION IS...

- ✗ not a replacement for action on climate change
- ✓ effective at growing corals at small scales

## FUTURE PROJECTS SHOULD...

- ✗ focus on improved monitoring and scientific rigour in design
- ✗ focus on scaling up for reef-wide and resilient restoration
- ✗ focus on community involvement for site stewardship
- ✗ use biodegradable materials

Coral restoration is a speculative, feel-good science that won't save our reefs

<https://doi.org/10.1038/s41558-024-02063-6>

## Coral reefs deserve evidence-based management not heroic interference

Robert P. Streit, Tiffany H. Morrison & David R. Bellwood

 Check for updates


## nature ecology & evolution

Article

<https://doi.org/10.1038/s41559-025-02667-x>

## Restoration cannot be scaled up globally to save reefs from loss and degradation

Received: 25 June 2024

Clelia Mulà<sup>1</sup>, Corey J. A. Bradshaw<sup>2,3,4</sup>, Mar Cabeza<sup>1</sup>, Federica Manca<sup>1</sup>, Simone Montano<sup>5,6</sup> & Giovanni Strona<sup>7</sup> 

Accepted: 18 February 2025

# Coral Restoration future

A project being piloted across the Pacific and projected for Fiji in the near future:



## ReefSeed: portable aquaculture system

- Collection of coral larva at time of spawning and aquaculturing in near-site tanks before planting out.
- Increased biodiversity
- No broken “parent” corals
- Too high-tech for outer islands?
- Possibly located in tourism areas

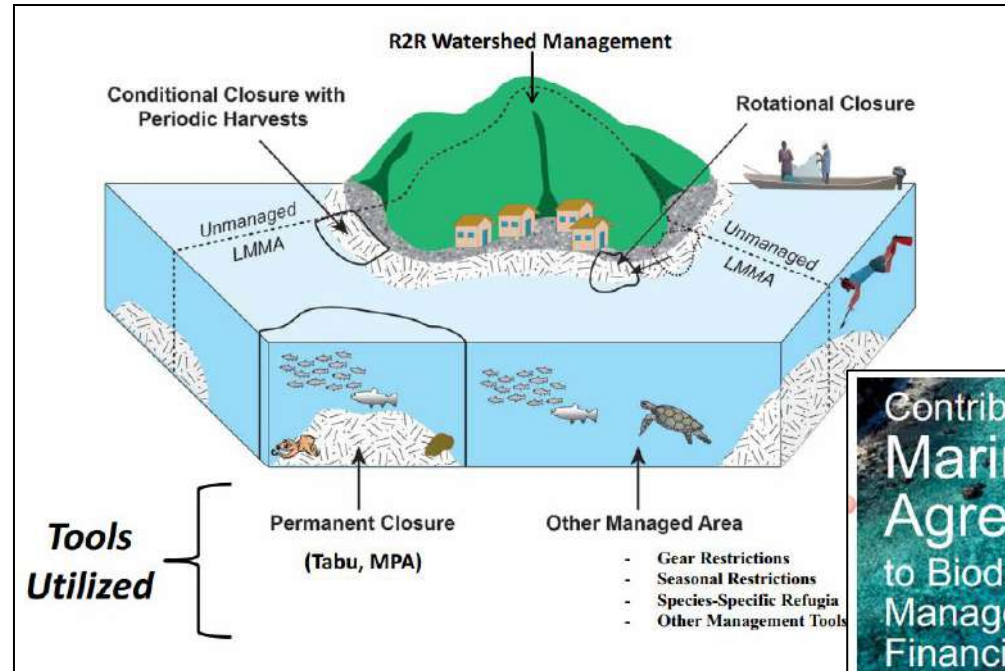


Great Barrier  
Reef Foundation



# Alternatives: Reef Protection

- Traditional resource owners can create “Tabu” marine protected and locally managed areas by mutual agreement. More than 440 in Fiji, many over 20 years old.
- Tourism operators work with local resource owners to partner on marine conservation. More than 50 current agreements.
- Government can create legally recognised statutory marine reserves under the Fisheries Act. Fewer than 5 at present



[LEGAL NOTICE NO. 41]

FISHERIES ACT  
(CAP. 158)

**Fisheries (Shark Reef Marine Reserve) (Serua)  
Regulations 2014**



Sykes H, Mangubhai S, Manley M (2018) Contribution of Marine Conservation Agreements to Biodiversity Protection, Fisheries Management and Sustainable Financing in Fiji. Report No. 02/18. Wildlife Conservation Society, Suva, Fiji. 98 pp.



<https://fiji.wcs.org/Resources/Reports.aspx>

<https://www.marineecologyfiji.com/category/publications/>

# Reef Protection and

# Coral Recovery

- Protection from fishing → more herbivores
- More herbivores → Less algae → More coral settlement
- Bright corals adapting to heat stress
- More settlement → higher survival of adapted corals



27 March 2023 (+7 weeks -->) 14 May 2023



9 June 2023 (+ 1 year -->) 8 June 2024

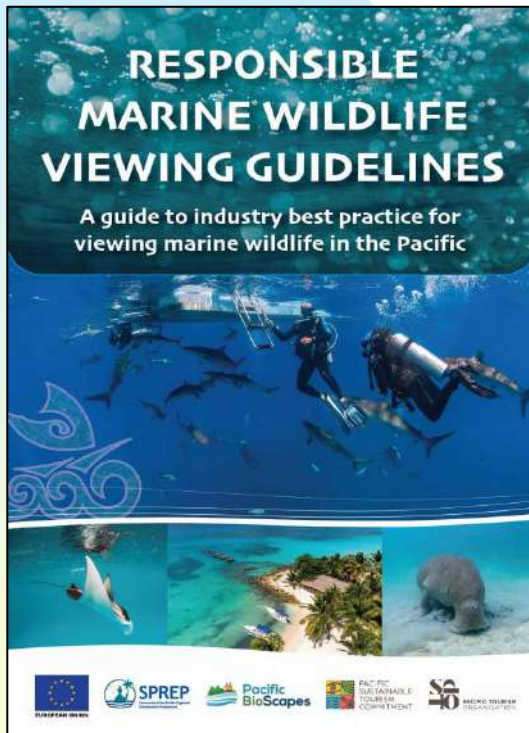


(+1 more year →)  
25 March 2025



# Responsible Diving and Tourism contributes to protection

## Wildlife viewing guidelines



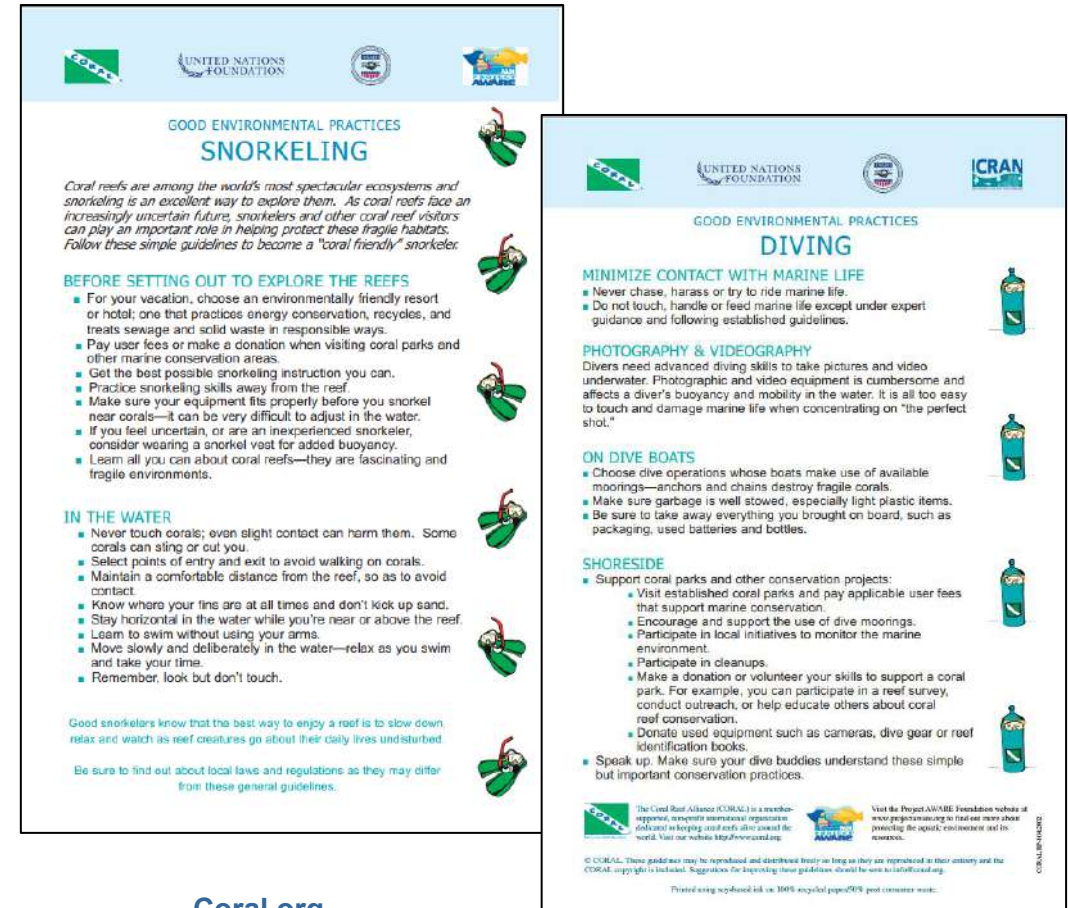
SPREP Library Cataloguing-in-publication data  
Responsible marine wildlife viewing guidelines: a guide to industry best practice for viewing marine wildlife in the Pacific. Apia, Samoa : SPREP, 2024

## Protected area rules and financial support



<https://fiji.wcs.org/Resources.aspx>

## Briefings and principles for water users



Coral.org

# Lessons learned in Fiji

- Small scale coral restoration may not be scalable to the larger environment, and if subject to poor imitation of good practice, can actually contribute to coral mortality
- There is little point in planting coral if initial stress factors are not addressed
- Coral restoration projects must be well designed, well planned, well maintained and well monitored, and should address coral biodiversity as well as the amount of coral
- Measures should be in place to remove failed project structures and avoid “trashing” the reef
- In some areas corals will self-restore if stress factors are removed
- Protected areas are one way of removing certain stress factors, and can contribute to coral adaptation to climate change and to survivability of restored corals
- Education of, and support by, reef users such as divers, snorkellers, kayakers, paddle-boarder etc., can help to maintain protected areas, and is one way tourism can contribute to reef health