

## Chapter 38

### Introduction: Conservation and transportation

MIKE BRITTSAN<sup>1</sup> AND RACHEL JONES<sup>2</sup>

<sup>1</sup> Columbus Zoo and Aquarium 9990 Riverside drive, Powell, OH 43065, USA  
[mike.brittsan@columbuszoo.org](mailto:mike.brittsan@columbuszoo.org)

<sup>2</sup> Zoological Society of London, London Zoo, Regents Park, London, NW1 4RY,  
United Kingdom  
[rachel.jones@zsl.org](mailto:rachel.jones@zsl.org)

---

Coral reef ecosystems worldwide have changed dramatically over the past 25 years. Reefs can expect to face natural pressures from impacts such as weather but much of the recent degradation has its origin in anthropogenic activities.

Coral reefs provide goods and services worth about \$375 billion each year (Bryant *et al.*, 1998). This is an immense contribution from an ecosystem which covers less than one percent of the earth's surface. Reef systems provide economic and environmental services to millions of people as shoreline protection from waves and storms, as places for recreation and tourism, and as sources of food, pharmaceuticals, livelihoods, and revenues. If we continue at the present rate of destruction it is likely that we will pass the point of irreversible decline, and the reefs will take with them this suite of vital services. Coral reefs are certainly a resource worth conserving in many respects.

Many hundreds of thousands of coral animals are taken from reef habitats in the tropics every year and shipped to aquariums, both private and public, in countries across the world. The reasons for this mass movement vary from the large and lucrative trade in marine ornamentals for reef tanks, to the smaller numbers taken for research purposes, and in some cases they represent dramatic attempts to safeguard small and highly threatened populations from complete extirpation.

The conservation and transportation section examines this flow of corals between the *in* and *ex-situ* environments, a flow that is not only one-way. It explores a range of projects, techniques and impacts that affect coral conservation. It also explores the many ways that public aquariums are involved in the

international movement of coral animals, and the responsibilities that this involvement confers on the aquarium community.

This section addresses the roles that zoos and public aquariums can play in coral conservation by:

- Liaising with customs authorities and enforcing CITES legislation
- Creating safe populations of highly threatened species and acting as focal points for collaborative conservation
- Aquaculturing corals for restoration projects
- Hosting research projects that could not be conducted *in-situ*
- Encouraging sustainable trade in reef animals
- Acting as a 'window onto the reef' for visitors
- Sharing husbandry, biological and health information (the rest of this volume being an example of such information exchange).

This range of papers explores several aspects of the movement of coral between the wild and captive environments; from describing the shape and scale of the trade in live corals between nations to the details of packing and shipping techniques for individual colonies. Papers also address the issue of reef restoration and of collaborative research projects that draw together varied disciplines to better understand coral biology and conservation.

As the future of coral reefs becomes increasingly threatened by large-scale environmental changes, the collaboration between those working on the reef and those in aquariums becomes ever closer. Examples of collaboration among Aquarium institutions are the American Association of Zoos and Aquaria (AZA; [www1](http://www1))

Coral Reef CAP, and in Europe the European Association of Zoos and Aquaria (EAZA; [www2](#)) and the European Union of Aquarium Curators (EUAC; [www3](#)) Coral Aquatic Sustainability Program (ASP). The EU funded research consortium CORALZOO is a good example of a collaborative research team spanning a range of disciplines, which is discussed in more detail elsewhere in this volume (see chapter 17). A project such as SECORE ([www4](#)) (Sexual Coral Reproduction) demonstrates the flow of expertise and funding between the aquarium industry and field researchers, and again is expanded on in chapter 42 of this volume.

These types of partnerships are necessary for expediting methods of recovery and conducting basic scientific research on coral reef ecosystems. Transport techniques, trade statistics and collaborative research projects all aim to improve our understanding of these animals and contribute to their long-term persistence in the wild.

As the reefs of the world face an increasingly unstable future our efforts to understand and predict the way that corals will respond to these changes become ever more crucial. Co-operative projects that support field conservation programmes, the scientific research that underpins them and the vital education work required to publicise these efforts are all key pillars of this work. Individual public aquariums can have very real impacts on coral conservation by becoming involved in these collaborative efforts.

## REFERENCE

- Bryant, Bryant, D., Burke, L., McManus, J., and M. Spalding, 1998. "Reefs at Risk: A Map Based Indicator of Threats to the World's Coral Reefs." World Resources Institute. Washington D.C., USA: 56 pp.

## INTERNET RESOURCES

- [www1. www.aza.org](#)  
[www2. www.eaza.net](#)  
[www3. www.euac.org](#)  
[www4. www.secore.org](#)