Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

Plate 2.4 Underwater photograph taken at the Long-Term Study (LTS) reef at 6 m depth on the West Fore Reef at Discovery Bay, Jamaica, in March 2004. Recovery of the herbivorous sea urchin *Diadema antillarum* has reduced macroalgal cover from >60% to <5%, while increasing the cover of crustose coralline algae and the abundance of coral recruits on a substratum of *Acropora* rubble. In the last few years there has been a conspicuous increase in recruits of *A. palmata*, one of which appears in the centre of the photograph.

Plate 2.5 Underwater photograph of *Acropora cervicornis* thickets filling in the voids between large, century-old colonies of *Montastraea annularis* at ~6 m depth at Dairy Bull Reef, Jamaica, in July 2003. The view in this photograph is reminiscent of the coral assemblage of the north coast of Jamaica in the 1960s and 1970s. This reef has shown dramatic increases in coral cover and reductions in macroalgae in the past few years, coincident with the recovery of *Diadema antillarum* and in the near-absence of herbivorous fish.

Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

Plate 3.1 Ikonos satellite image of Andros (Bahamas) showing a mangrove-lined coastal creek (left inset), a lagoon with seagrass beds (right inset) and patch reefs, and an outer reef crest with *Montastraea* reef to the seaward edge of the image (middle inset).

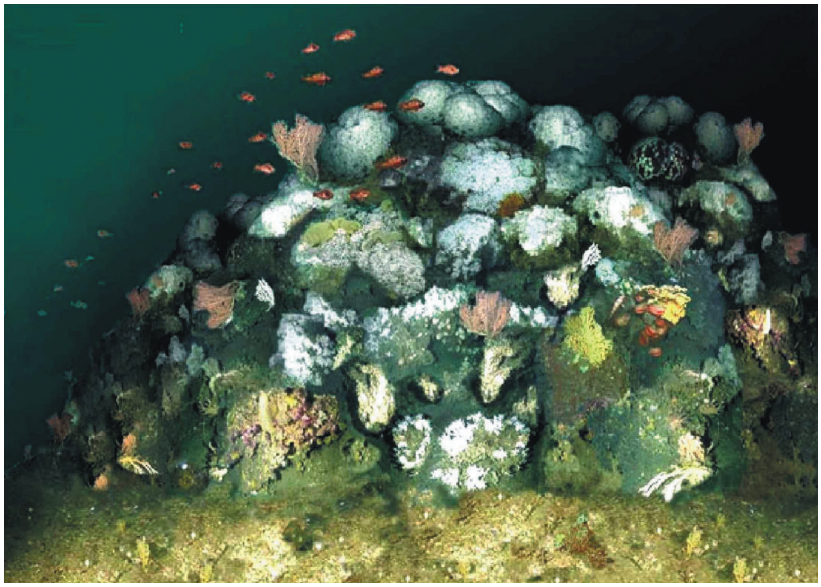

Plate 4.1 Model of a cold-water reef, composed of various underwater photos taken on Norwegian *Lophelia* reefs. (Courtesy of Fosså *et al.*, 2000.)

Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

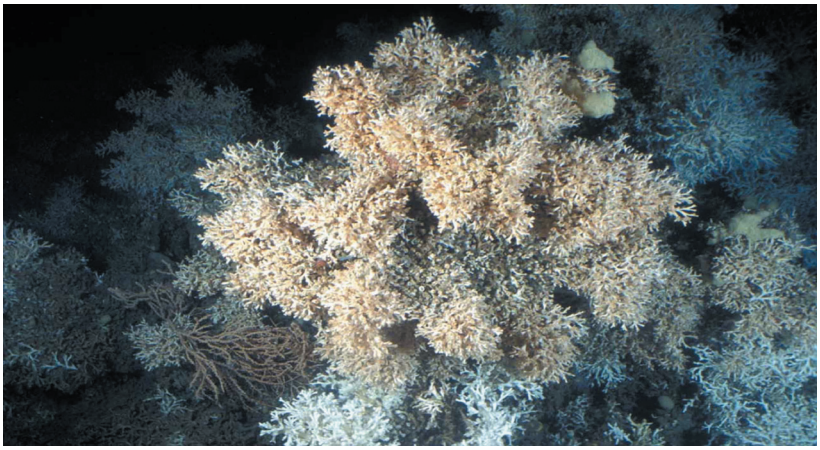

Plate 4.2 Living *Lophelia pertusa* colonies on top of a Norwegian reef. (Courtesy of André Freiwald, IPAL-Erlangen.)

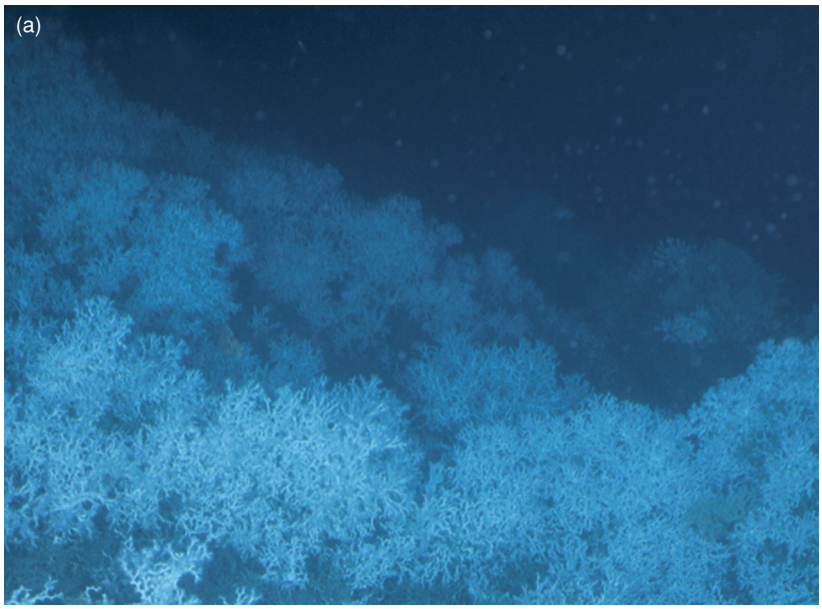

Plate 4.4 (a) Intact reef. (Courtesy of the JAGO-Team.) (b) Reef after a trawl has passed. (Courtesy of Fossså *et al.*, 2002.) (c) Coral caught in trawl gear. (Courtesy of Jim Reid, DFO-Canada.) (d) Lost net on reef. (Courtesy of IFREMER, ARK-19/3a, 2003.)

Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

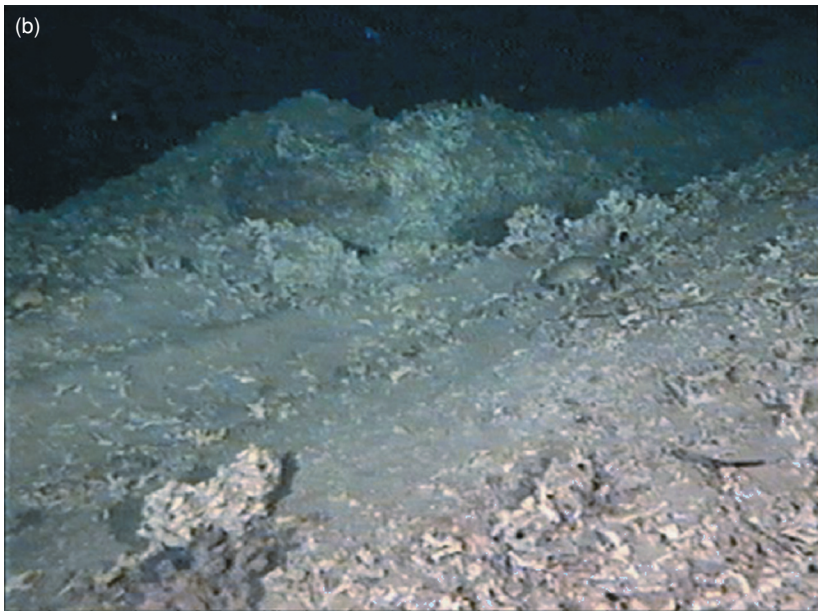

Plate 4.4 (*cont.*)

Plate 4.4 (*cont.*)

Plate 4.4 (*cont.*)

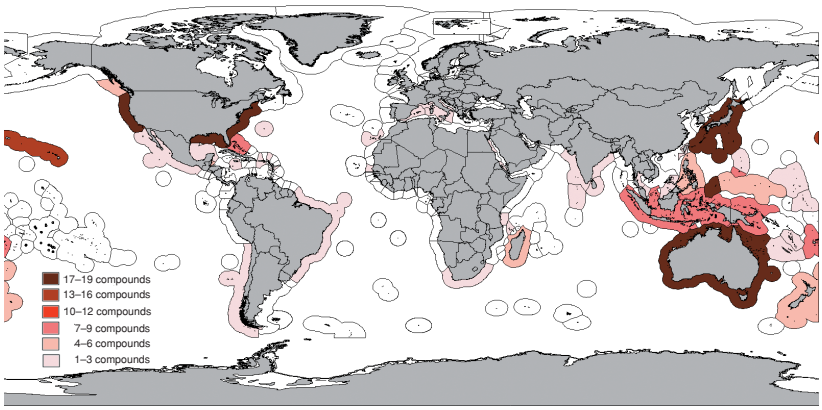

Plate 6.15 Distribution and number of novel marine compounds. The origin (recorded as national exclusive economic zones (EEZs)), and number of novel marine compounds sampled from the literature (American Chemical Society Database) are used as surrogates for location and relative intensity of bioprospecting activity. The data suggest that collection is focused on countries with coral reefs and the national waters of countries that conduct research into marine natural products. (Source: Hunt and Vincent, in press.)

Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

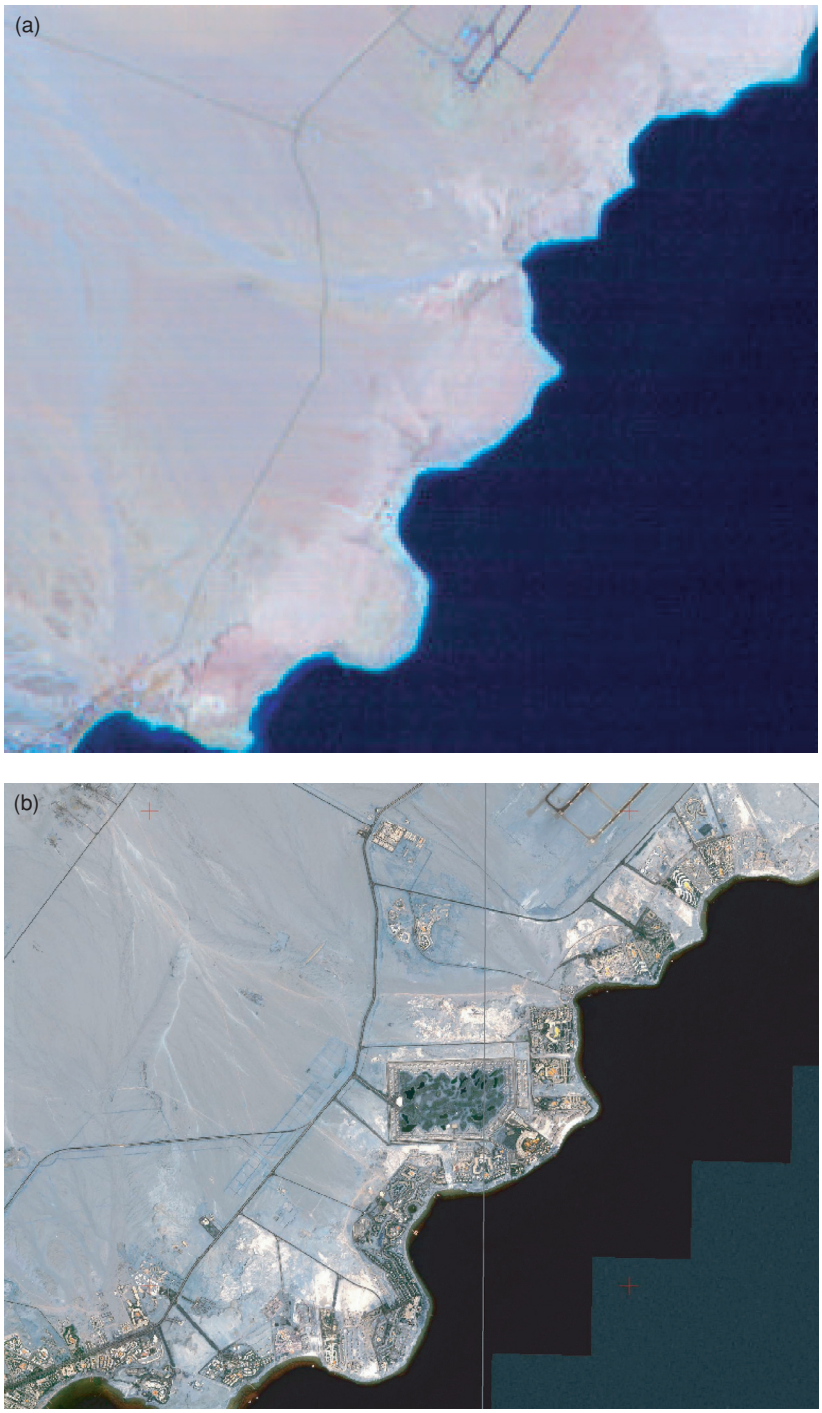

Plate 7.1 Area between Na'ama Bay and Sharm el Sheikh Airport in (a) the late 1980s and (b) 2004. (Sources: (a) Ras Mohamed National Park; (b) Support for Environmental Assessment and Management 2004.)

Plate 7.4 Protectorates and major cities of South Sinai. (Source: Support for Environmental Assessment and Management, 2004.)

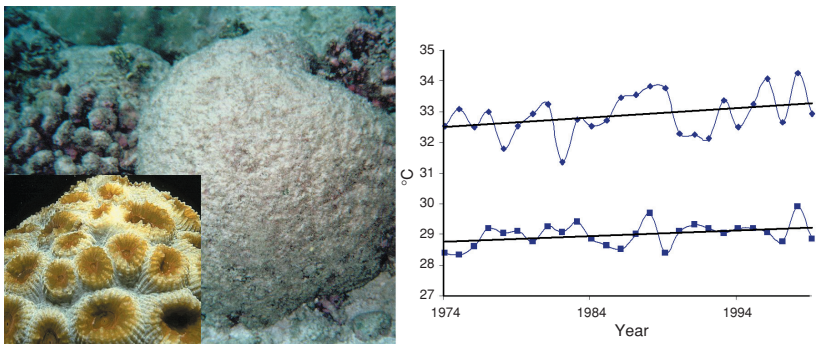

Plate 8.7 Sea surface temperatures for the warmest month of each year in the Arabian Gulf (Bahrain site; top trace) and Indian Ocean (Chagos site; bottom trace) from 1974 to 2000. Note that every year the Gulf values are at least 2.5°C warmer than the values that were lethal in the central Indian Ocean (about 30°C), yet about 50 Indian Ocean coral species thrived in the former for most of this period. Photos: the dead colony is an eroded *Favia pallida* in Chagos (1999); inset is a live coral of same species in Arabian waters.

Plate 8.9 Typical reef flats in the Seychelles, 2004. (a) Beau Vallon, Mahé Island, reef flat 135 m wide on a low tide. (b) Praslin Island, reef flat 205 m wide. (c) La Digue reef flat 225 m wide. (d) The narrow reef flat at Fisherman's Cove, Mahé, 65 m wide. All photos taken on calm days to show waves breaking at the edge of the reef flat. The darker patches under water are seagrasses near shore, and dead coral further out. (Photographs by the author.)

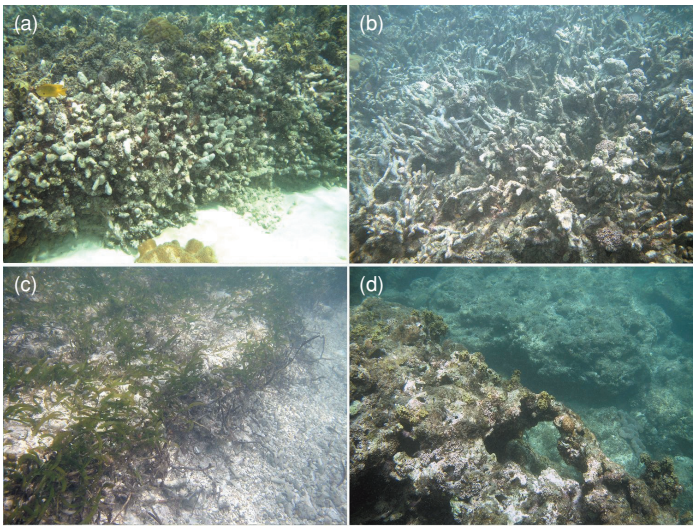

Plate 8.10 Dead reefs of the Seychelles, 2004. (a) Edge of expanse of dead branching *Porites* coral on a Seychelles reef flat. Some tips are living, mainly new recruits but possibly with some older survivors; most of the top is now covered with the alga *Turbinaria*. The packed branches extend about 0.6 m above the sand-covered platform. (b) Edge of expanse of dead branching *Acropora* staghorn coral on a Seychelles reef flat. These packed branches extend about 0.5 m above the platform. (c) Seagrass bed on reef flat. Seagrass is assumed in this model to be able to keep up with sea-level rise and appears to be doing so. (d) Fringing reef crest, showing lack of live coral and eroding surface with a rounded reef crest. Prior to the coral mortality of 1998, reef crests supported live coral which grew to approximately the low-tide level where they formed a steep slope and sharp angle.

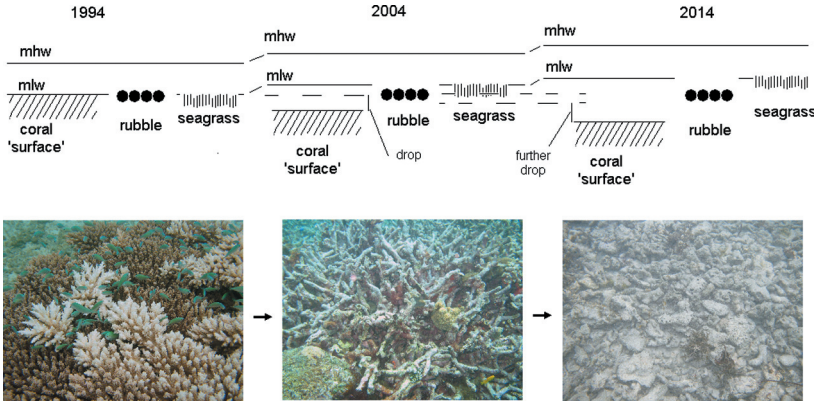

Plate 8.11 Top: Schematic of progression of change on reef flats as a result of bleaching-induced coral mortality (mhw, mean high water; mlw, mean low water). Bottom: examples of conditions seen (corals only) at each step of the degradation process.

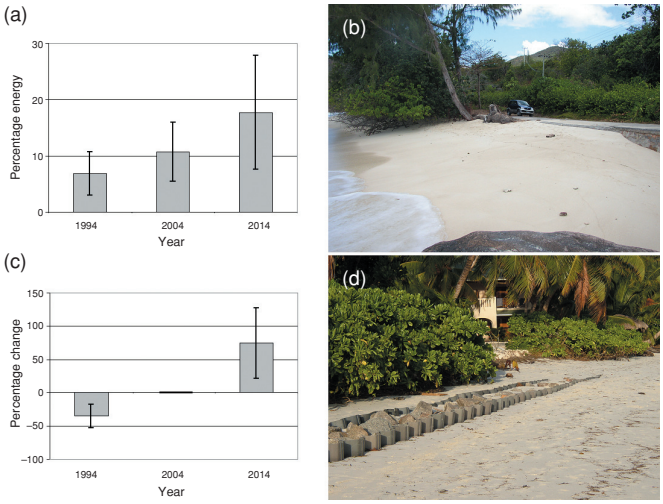

Plate 8.12 (a) Average percentage of offshore wave energy that reaches shores in three different decades. Average values of 14 reefs; bars are standard deviations. (b) Increased energy changes pumping increased sand production onto a road. (c) Percentage changes in wave energy reaching shores compared to the present. The zero on the *y* axis represents 2004. Average of all 14 reefs; bars are standard deviations. The shores behind these reefs are now receiving, on average, 35% more wave energy than 10 years ago. Wave energy is projected to increase by 75% in the next decade, owing to coral mortality and reef degradation. (d) Emergency steel pilings inserted on beach by a hotel to resist erosion. Note elevation of the hotel.

Plate 10.3 Implementation team for assessment of management effectiveness of Malindi Marine Park, Kenya. (Photograph by Sue Wells.)

Plate 10.4 Meeting with fishers at Kisite Marine Park, Kenya to review preliminary results of assessment of MPA management effectiveness. (Photograph by Sue Wells.)

Plate 10.5 Local communities such as this women's group in the village adjacent to Kisite Marine Park, Kenya, were very positive about the assessment of MPA management effectiveness. (Photograph by Sue Wells.)

Plate 10.7 Coral mining at Mnazi Bay-Ruvuma Estuary Marine Park, Tanzania. (Photograph by Sue Wells.)

(a) (b)

Plate 11.2 (a) Land reclamation on inshore coral reefs between the main island of Mahé and Ste Anne's Marine Park, Seychelles in 1999. (b) Coral covered in sediment in the Marine Park. Mitigation measures should have been proposed in the EIA and put in place to prevent sediment from drifting into the Marine Park because of its high tourism value.

(a) (b)

Plate 11.3 The 'environmental attributes' assessed by EIA include (a) coral reef fauna and flora and (b) cultural heritage, such as this temple and arch constructed out of coral. The 'environmental elements' assessed within each attribute include penetration of light and movement of water, essential to reef processes in (a).

Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

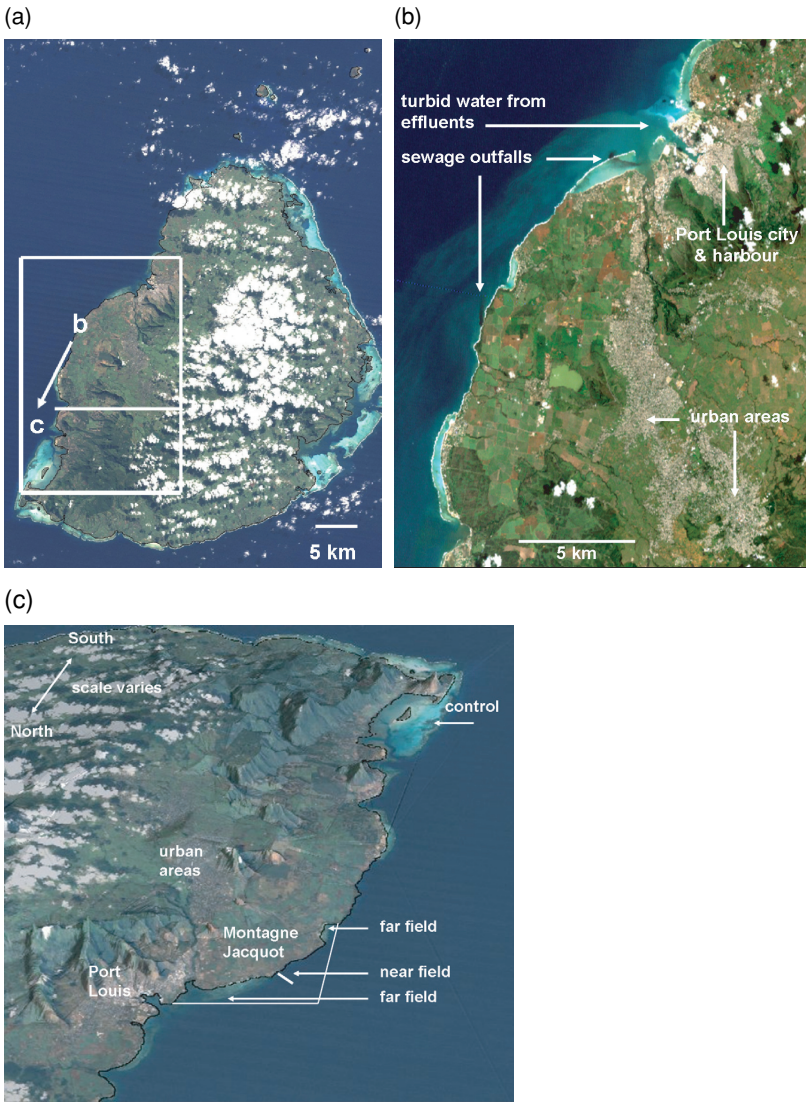

Plate 11.5 (a) Landsat satellite imagery of Mauritius showing coral reefs and lagoon areas. Boxes (b) and (c) (with arrow showing angle of view) are enlarged in the corresponding images. (b) Turbid water extending south along the coastline from Port Louis and existing sewage discharges serving urban areas. (c) Three-dimentional view from north looking south along west coast to show position of the new outfall, predicted mixing zone and near field, far field and control site locations used in the monitoring.

Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

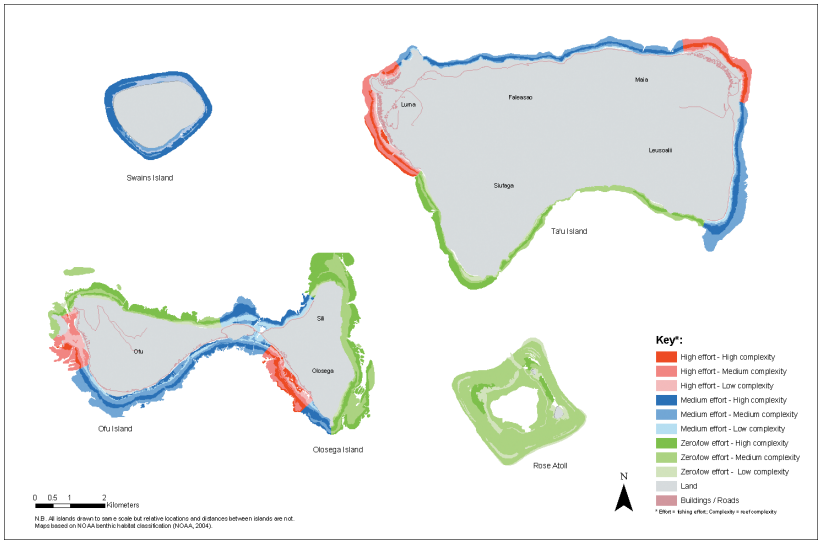

Plate 12.4 Map showing spatial variation in direct use fishery (subsistence and artisanal) values for four islands in American Samoa. (From Spurgeon *et al.*, 2004.)

Plate 16.4 (a) Divers removing rubble debris from a reef and (b) loading debris into metal baskets for transport away from the reef, Broward County, Florida, 2004. (Photographs by Richard Shaul.)

Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

Plate 16.4 (*cont.*)

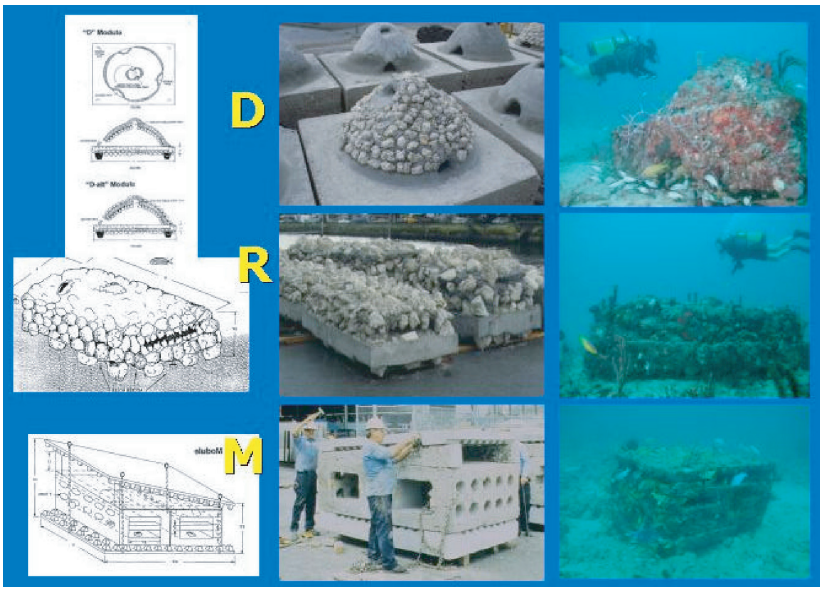

Plate 16.6 Reef restoration modules used to restore an area off Miami Beach, 1991. D, Dome; R, Reef module; M, Motel. D and R designed by Harold Hudson, US Patent #5215406. (Images courtesy of Miami-Dade County, Florida.)

Cambridge University Press
9780521671453 – Coral Reef Conservation
Côté/Reynolds
[Plate Section]

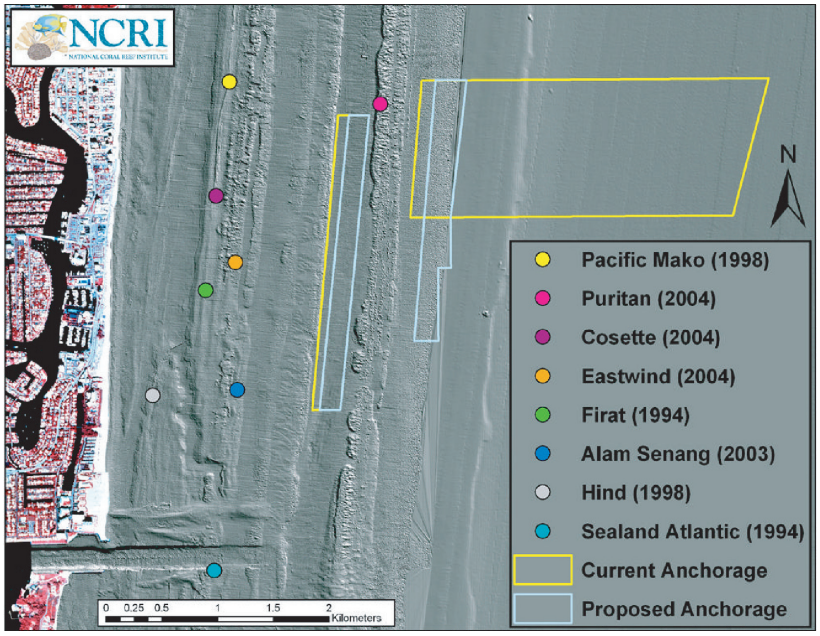

Plate 16.7 Map of coast of Broward County, Florida, identifying multiple ship mishaps, 1994–2004. The symbols indicate the positions of the ships. The anchorage and recommended changes are displayed in yellow and blue lines, respectively.

