



22 MAY 2014
INTERNATIONAL DAY
FOR BIOLOGICAL DIVERSITY
ISLAND BIODIVERSITY



Funafuti Marine Protected Areas Tuvalu



Bay of Lekine - New Caledonia

Le Monde de la FICSA



Serious coastal erosion Tepuka Islet Funafuti Tuvalu



Tarawa Atoll Kiribati main areas of settlement oceanside and lagoon

Each year on 22 May it is the International Day for Biological Diversity (IDB). This year, in 2014, the theme is Island Biodiversity, and the Secretariat of the Convention on Biological Diversity is happy to reach out to the readers of the FICSA Magazine to raise awareness about “trouble in paradise”: islands are often portrayed as paradise on Earth; images of sun, sand and sea. In reality, islands are far richer, and their problems far graver than what these simplistic images show. The unique characteristics that make island biodiversity so special also leave it particularly fragile and vulnerable. Many island species have become rare or threatened, and islands have a disproportionate number of recorded species extinctions when compared to continental systems.

Islands host some of the most unique life forms on the planet, with an exceptionally wide range of species, many of which are endemic. Many islands are also home to people with unique cultures, who derive much of their livelihood and well-being directly from their natural environment. They are also key to the livelihood, economy, well-being and cultural identity of 600 million islanders—one tenth of the world’s population. Because island species evolve in competition with relatively few other species, they develop survival strategies based on interdependency, co-evolution and mutualism, rather than defense mechanisms against a broad range of predators and competitors. As a result, biodiversity loss is a particular concern on islands, due to their small size, isolation and fragility.

Over the past century, the biodiversity of island ecosystems has been subject to intense pressure from:

- **Invasive alien species:** Islands have a high proportion of endemic and specialized flora and fauna. The geographic isolation of islands limits immigration of new species, allowing established species to evolve with few strong competitors and predators. Invasive alien species introduced by human activity have some of the most dramatic effects on

isolated ecosystems such as islands and are a leading cause of species extinctions. Islands are more prone to invasion by alien species because of the lack of natural competitors and predators that control populations in their native ecosystems. In addition, islands often have ecological niches that have not been filled because of the distance from colonizing populations, also increasing the probability of successful invasions. Eradication is often sufficient to allow the return of the original native wildlife. However, active management, such as replanting of native flora and reintroduction of fauna is frequently necessary to fully restore a damaged area. Once an area is restored, prevention is also required to keep an invasive species from returning to the island.

- **Tourism development:** Tourism is a principal economic activity in a large majority of Small Island Developing States, however, when development is uncontrolled, it can be a major cause of ecosystem degradation and destruction through destruction of habitats for the development of infrastructure, transportation facilitating the introduction of invasive alien species, degradation of habitats from an increased quantity of waste generated, or damage of habitats as a result of recreational activities.

- **Climate change and variability:** The most significant impacts of climate change are sea-level and sea-surface temperature rise. Because most small islands are low lying and have a large exposure of coasts in relation to landmass, as well as a high concentration of population in coastal zones, islands are extremely vulnerable to sea-level rise. Experts predict that the average sea level could rise by as much as 21 cm by 2025 and 66 cm by 2100, leading to inundation, storm surge or shoreline erosion with the potential to destroy island economies. Sea-level rise will also cause increased salinity due to encroachment of the sea and saltwater intrusion into freshwater lenses, contributing to an increasing shortage of the water supply and loss of agricultural land. The rise in sea temperature also causes coral bleaching, which

negatively affects fishes, sponges, giant clams, mollusks and other sea creatures, whose survival depends on reefs. As a result, the food security and economies of islands, which are largely dependent on marine ecosystems, will be negatively affected.

- **Natural disasters:** Small islands suffer disproportionately from natural disasters, such as cyclones, storm surges, volcanic eruptions, earthquakes, forest fires, landslides, extended droughts and extensive floods. In fact, more than half of the 25 disaster-prone countries in the world are classified as Small Island Developing States (SIDS), and the frequency and severity of such disasters are increasing as a result of climate change and variability. For example, tropical cyclones, also referred to as hurricanes or typhoons, are frequent on islands and are expected to increase due to climate change and environmental degradation. One tends to forget that New York City, for instance, was built on an island and this island was heavily touched by Hurricane Sandy in October 2012 and largely threatened by Hurricane Irene in August 2011 !. The Typhoon Haiyan, that made landfall in the Philippines in November 2013, was the deadliest typhoon that the Philippines ever experienced so far, and also the strongest storm recorded at landfall and in terms of wind speed. Needless to be reminded that these natural catastrophes will happen more often and with greater strength with the climate change trends we are all the witnesses of.

- **Overexploitation and unsustainable uses:** Overexploitation of resources, by over-fishing, over-hunting, overgrazing and over-harvesting, is a major cause of biodiversity loss in island ecosystems. For example, over-fishing has caused a significant decline in the fish populations of coral reefs in many areas, which may have long-lasting negative effects on all aspects of reef ecology. In the Pacific, over-hunting has had a negative impact on coconut crabs, pigeons and fruit bats, as well as other large birds that are traditional food sources.

- **Pollution and waste disposal:** An increase in pollution from liquid and solid waste, as well as from agrochemicals, is causing degradation of river, sub-surface and coastal water quality, compromising island habitats and having adverse effects on recreational and fishing activities. Garbage dumps are often inappropriately sited and poorly managed, with disposal methods that prove to be inadequate leading to coastal habitats encroached upon being slowly destroyed. Waste disposal options, already inadequate, are being overwhelmed by dramatic shifts in the waste stream in the last decade, with solid waste (plastics, cardboard, paper and metals) now more significant than organic waste.

So, next time you spend your vacation on a beautiful island, look around, play and be the responsible tourist, sensitive to the local needs for a sustainable future of island ecosystems.

For more information, you may consult our website at: www.cbd.int/island/about.shtml



Loss of coastal trees Funafuti Atoll Tuvalu

Credit for pictures: Randy Thaman,
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