

LAUNCH OF THE **COASTAL ZONE MANAGEMENT TRUST**

QUINTANA ROO, MEXICO

A 60km stretch of coastline on the Yucatan Peninsula of Mexico is the testing ground for an idea that could protect fragile environments around the world: insuring coral reefs.

The Economist World Ocean Summit sees the official announcement of a new trust fund, contributed to by municipal governments and the tourism industry on the Mexican Caribbean coast, which will also fund maintenance projects to protect the reef before and after storm surges. A key element of the financial strategy will be to buy coral reef insurance – to protect the reef that protects and adds value to their businesses and communities. Once established, the insurance will pay out if the policy is triggered by a storm event, rebuilding and regenerating the reef, and protecting it for the future. In this International Year of the Reef, this is a crucial step in helping secure a better future for coral reefs.

The summit is being held in Riviera Maya, located on the Mexican Caribbean coast; its properties and beaches, along with those in Cancún, Puerto Morelos and Tulum, are protected by the Mesoamerican Reef.

The Nature Conservancy (TNC) – a global organization with expertise in ecosystem conservation, restoration, coastal engineering and natural infrastructure financing – has worked with insurance company Swiss Re and local partners and experts to design the first-ever insurance mechanism for protecting reefs. Managing the increasing risk of environmental damage from adverse weather events, it forms a model for insuring nature on a wider basis.

HEADLINE POINTS

THE GLOBAL PROBLEM

- Hurricanes are a natural part of our climate system, but research suggests that climate change may result in more intense hurricanes in the future.
- In 2017 alone, natural disasters cost us approximately US\$300 billion globally.
- Climate change is displacing 68,000 people every single day.
- Rising sea levels make the risk of storm surges and high tides greater.
- Healthy coral reefs protect nearby coasts from storm surges and can absorb up to 97% of wave energy.
- Strong storms damage corals, which are fragile due to anthropic threats.
- If the intensity of hurricanes increases under climate change, corals will have less ability to repair themselves sufficiently to provide their historic protection of coastal areas.

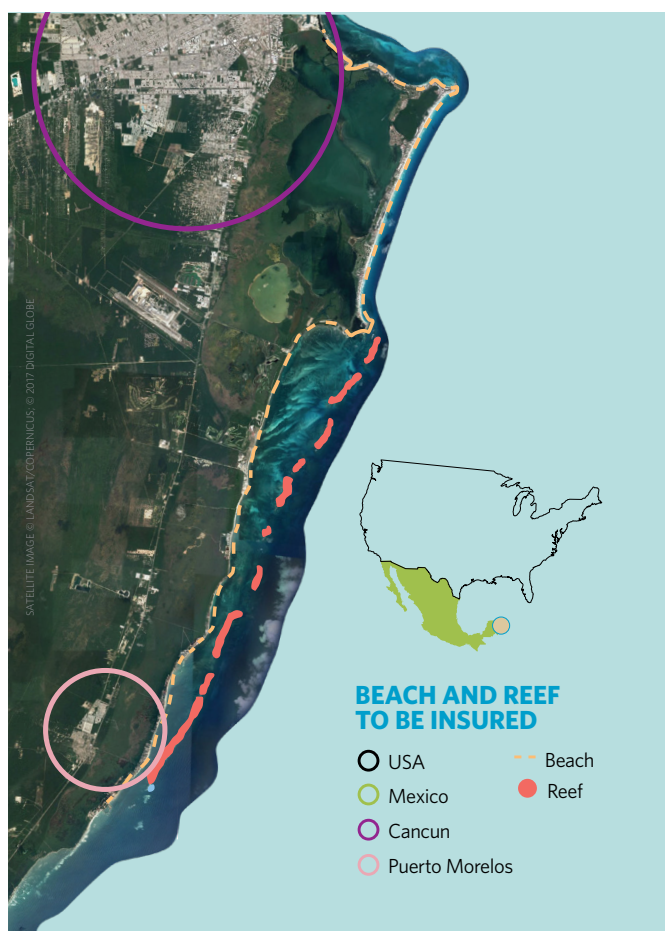
THE PROBLEM IN MEXICO

- Tourism along the Mexican Caribbean coast is worth US\$9 billion, with over 300 hotels offering more than 100,000 rooms.
- Beach erosion is a mounting problem for the tourism industry. Coral reefs protecting the Mexican Caribbean coastline have degraded because of pollution, disease, overfishing – in addition to storms and hurricanes.
- There is evidence of coastline damage and beach erosion corresponding to areas of reef loss.
- Past storm events have closed hotels and businesses for long periods, cutting off income and employment until they can be repaired and reopened.
- Global research suggests that a one-meter loss on reef height may double the cost of damage when severe weather impacts the coastline.

THE SOLUTION

- A healthier reef will protect beaches from coastal erosion and reduce damage to coastal infrastructure.
- The Quintana Roo government and TNC are committed to restore the Mesoamerican Reef, and have allied with the tourism industry, academia and local partners to scope out innovative methods and financial instruments.
- A pioneering multi-sector partnership involving state government, local hotel owners and TNC has announced the Coastal Zone Management Trust: a trust fund that receives taxes from the tourism industry and local governments so it can protect coral reefs through continuous maintenance and the buying of reef insurance.
- The money paid out by the insurance policy after strong storm surges will be used to reduce and repair reef damage - removing debris, nurturing broken corals and replanting.
- The trust fund will also support ongoing maintenance of the reef and beaches, both before and after storm events.
- There is much to be gained by the local and national economy, individual businesses, the community, the insurance industry, environmental organizations - and coral reef ecosystems.
- Coral reefs and coasts around the world are highly threatened and need both short and long-term measures to reverse decline.
- This model of public-private partnership and insuring nature is replicable around the world, providing a means to preserve coral reefs and other natural features that protect people and infrastructure from adverse events.

BACKGROUND



The Mesoamerican Reef is the second-longest barrier reef system in the world. It is a diverse ecosystem, offering the Mexican Caribbean coastline protection from storm surge and sea-level rise and bringing significant economic benefits to Mexico's most important tourism center and its communities.

However, storms hitting the Mexican coastline damage the reef and reduce its ability to protect. During hurricanes Wilma, Emily (2005) and Dean (2007), hotels and beaches with reefs in Puerto Morelos suffered far less damage than those without intact reefs, such as in Cancun. Yet the hurricanes also severely damaged coral cover, reducing its ability to protect the coast.

The Quintana Roo government and its tourism sector recognized the role the reef plays in protecting the coastline and hence its importance to the economy and decided to launch an initiative to conserve and restore the reef: a trust fund called the Coastal Zone Management Trust.



HOW THE TRUST FUND WORKS

The Coastal Zone Management Trust is a trust fund (Fideicomiso in Spanish) that receives taxes collected by the government from local hotel owners and the tourism industry.

The fund has two roles. It aims to continuously maintain the coral reef and local beaches but also buys an insurance policy. The reef insurance pays out when a certain windspeed crosses the area covered by the insurance to fund the repair and rebuilding of the coral reef, restoring its protective power and hence its financial benefit to the local economy.

Collectively, through the trust fund-purchased insurance, the local community maintains and restores an important asset from storm damage and protects its interests through risk transfer. Yet, the trust fund also supports activities to continuously manage and conserve the coastal area – both before and after a storm event – meaning that the reef is better able to withstand storm damage when a hurricane hits.

The trust fund is governed by a technical committee and includes a scientific committee that oversees spending on conservation projects, aside from the insurance premium.

A proposed initial project encompasses 60km of beaches and reef along the coast of Cancún and Puerto Morelos. However, government and hotel owners are interested in assessing a larger area encompassing Tulum, Solidaridad and Cozumel municipalities.

STAKEHOLDERS

The Nature Conservancy (TNC) partnered with the scientific community and the Natural Protected Areas Commission to demonstrate the protective value of the reef and to identify the actions required to either maintain a healthy reef or to recover and restore it after hurricanes strike the coast.

Over two years, they worked to build understanding and support for the approaches needed – both on-the-ground conservation and financial instruments – with stakeholders including the state government, beneficiaries such as the hotel and tourism industry, and financial, reinsurance, and insurance experts.

Over the past 30 years, TNC has specialized in projects preserving and restoring coral and oyster reefs, floodplains, mangrove forests and marshes. These have demonstrated the value of nature as a cost-effective way of protecting people and property from flood and storm damage related to climate change.

THE INSURANCE POLICY

The proposed reef insurance is a parametric policy, which means that it pays out when a parameter is triggered. In this case, the trigger is windspeed. Research has found that reef cover decreases significantly after category 4 and 5 hurricanes and does not recover quickly.

The insurance payout covers short, medium and long-term responses to damage to the reef and beaches, restoring and protecting them.

The policy doesn't pay out for other kinds of reef damage, such as bleaching or algae overgrowth.

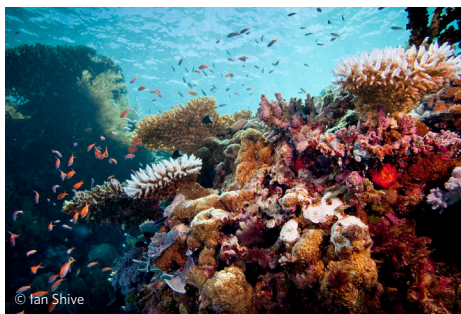
HOW THE REEF IS RESTORED - BUILDING THE CAPACITIES TO DO IT

TNC and its partners developed protocols and guidelines on how to restore reefs for coastal protection and how to first respond after a storm. Together, they are also building the capacities of coastal and reef managers to implement these.

After a storm event, a first responder team will immediately begin cleaning and repairing the coral, assess the damage and design a medium-term restoration plan. Restoration activities on the beach and reef will be implemented over the next two to three years.

These restoration activities encompass restoring the entire ecosystem, including increasing success of natural coral reproduction (capturing larvae and growing them in safe environments), rescuing broken corals, nurturing them and replanting them in the reef, and setting aside no-fishing areas to allow the recovery of herbivore populations.

If the structure and height of the coral is badly damaged – threatening its ability to protect coastal communities and infrastructure – hybrid solutions are proposed: artificial structures upon which coral can grow may need to be built in the reef crest alongside the natural coral colonies. Without such structures, it can take ten years for the reef to regain the height and rugosity (roughness needed for coral to attach and grow) needed to protect a coastline.



HOW STAKEHOLDERS BENEFIT

- The community benefits because reef preservation enables the hotel industry and ecotourism to thrive, and with it the services, income and jobs on which they depend.
- Hotel owners benefit because there is less beach erosion, and reduced risk to income and assets, thereby protecting a US\$10 billion tourism industry.
- Government benefits because increased coastal resilience means fewer costs from infrastructure loss, and more resilient coastal industries.
- Nature conservationists benefit because sustained financing mechanisms for maintenance and restoration result in a valuable natural system being preserved.
- The insurance industry can benefit if it sees that insuring natural systems can be marketable and could open up new markets while improving resilience too.

THE SIGNIFICANCE

The launch of the Coastal Zone Management Trust could mark the beginning of a new, global journey towards climate resilience, demonstrating how both public and private capital can be used to preserve natural assets that protect humanity and its infrastructure. The financial mechanisms being put into place in Mexico can be replicated across the world, in coastal economies dependent on natural features but faced with an increasing risk from storms and sea-level rise.

The need for such innovative approaches to meet the immediate challenges posed by climate change is becoming increasingly apparent, alongside the need for longer-term measures to moderate humanity's impact on the ocean and atmosphere.

TNC hopes this project will boost interest in conserving natural assets for their risk-reduction qualities, and the use of insurance and risk transfer to protect people and property from the increasing costs of severe weather.

A MODEL FOR THE FUTURE

Natural infrastructure such as wetlands and reefs can be a foundational part of how the insurance industry models, manages, transfers and finances the risks brought with climate change. Innovative projects and products that insure nature are likely to gain increasing significance over the coming decades, as sea levels rise and the likelihood of adverse weather events increases.

Beyond Mexico, there is considerable scope for many other financing and scaling opportunities based around nature-based resilience. Other regions where communities are dependent on natural phenomena for coastal protection and tourism revenue include countries from the Caribbean to Asia, representing a range of sizes, populations and coastal economies.

The insurance industry has an interest in increasing resilience, as this reduces risk and losses. However, the industry also has an interest in developing new markets for its products. Protecting nature through innovative insurance coverage achieves both these goals.

KEY FACTS

- Storms and natural disasters have cost the global economy US\$2.5 trillion since 2000.
- US\$6 billion of built capital is protected from flooding by coral reefs globally.
- Healthy coral reefs can absorb up to 97% of wave energy.
- A 1-meter loss of coral height may double damage to the shoreline.

