



Kim Hum
Hawai'i Marine
Program Director

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Reef Insurance

Building Resilient Reefs and Coastlines
in a Changing Climate



TNC is conserving the lands and waters on which all life depends

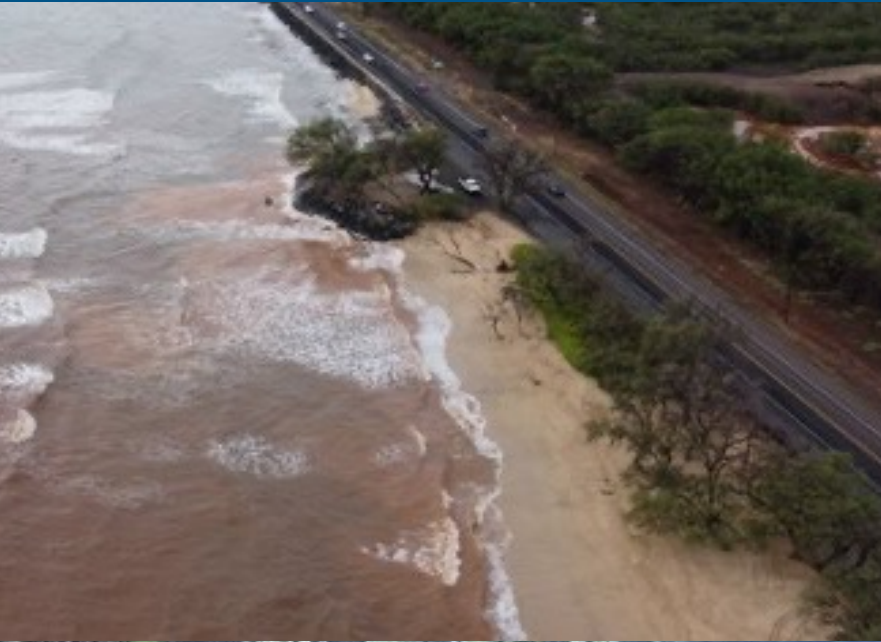




Reefs are the backbone of our island economy

- Reduce 97% of wave energy
- \$831 million coastal protection value
- \$13.4 million local fisheries value
- \$1.2 billion tourism value
- Cultural and recreational resource

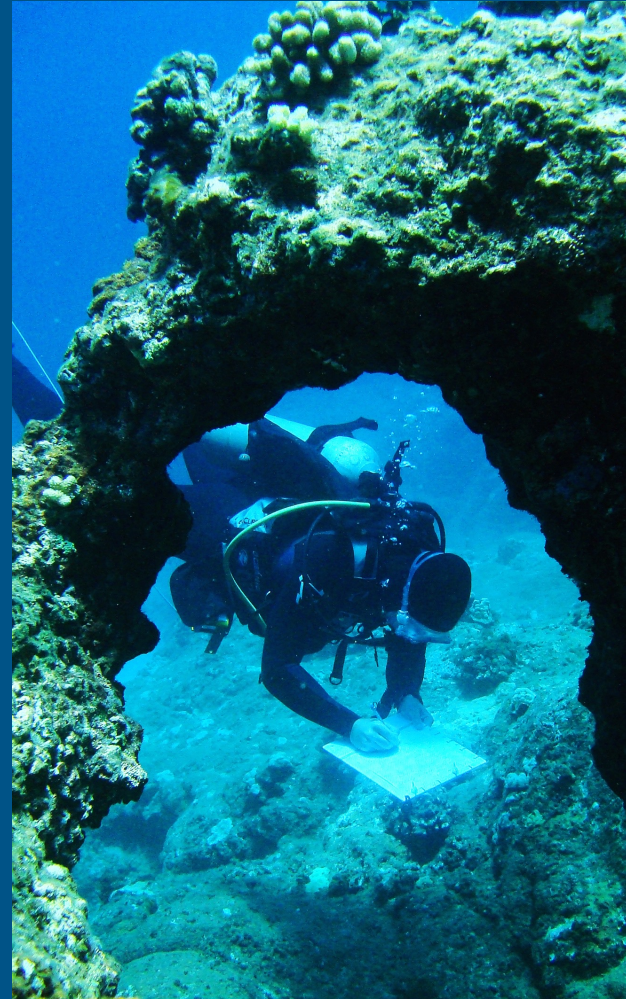
72% of residents are concerned about the loss of coral reefs



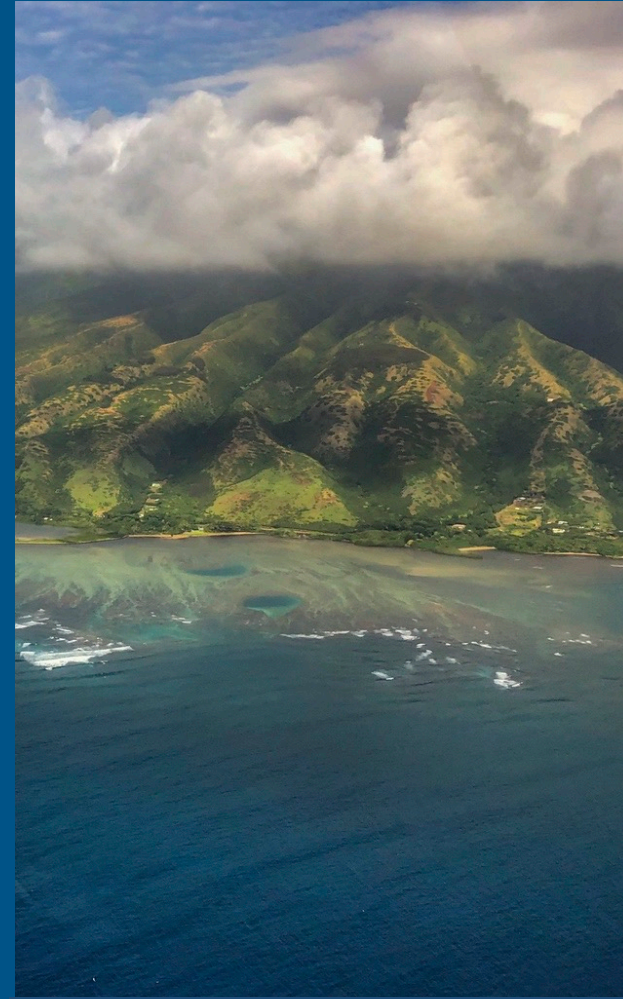
Building a More Resilient Future for Hawai'i's Local, Coastal, and Reef Communities



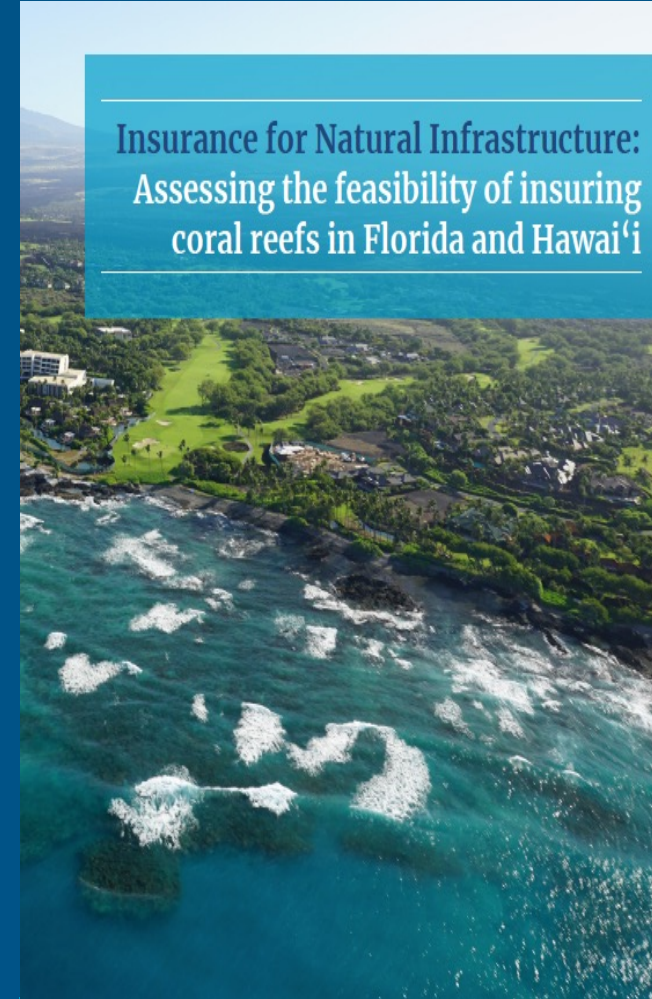
EMPOWER LOCAL
COMMUNITIES



PROVIDE SCIENCE



MANAGE MAUKA TO
MAKAI



Insurance for Natural Infrastructure:
Assessing the feasibility of insuring
coral reefs in Florida and Hawai'i

PIONEER NEW TOOLS

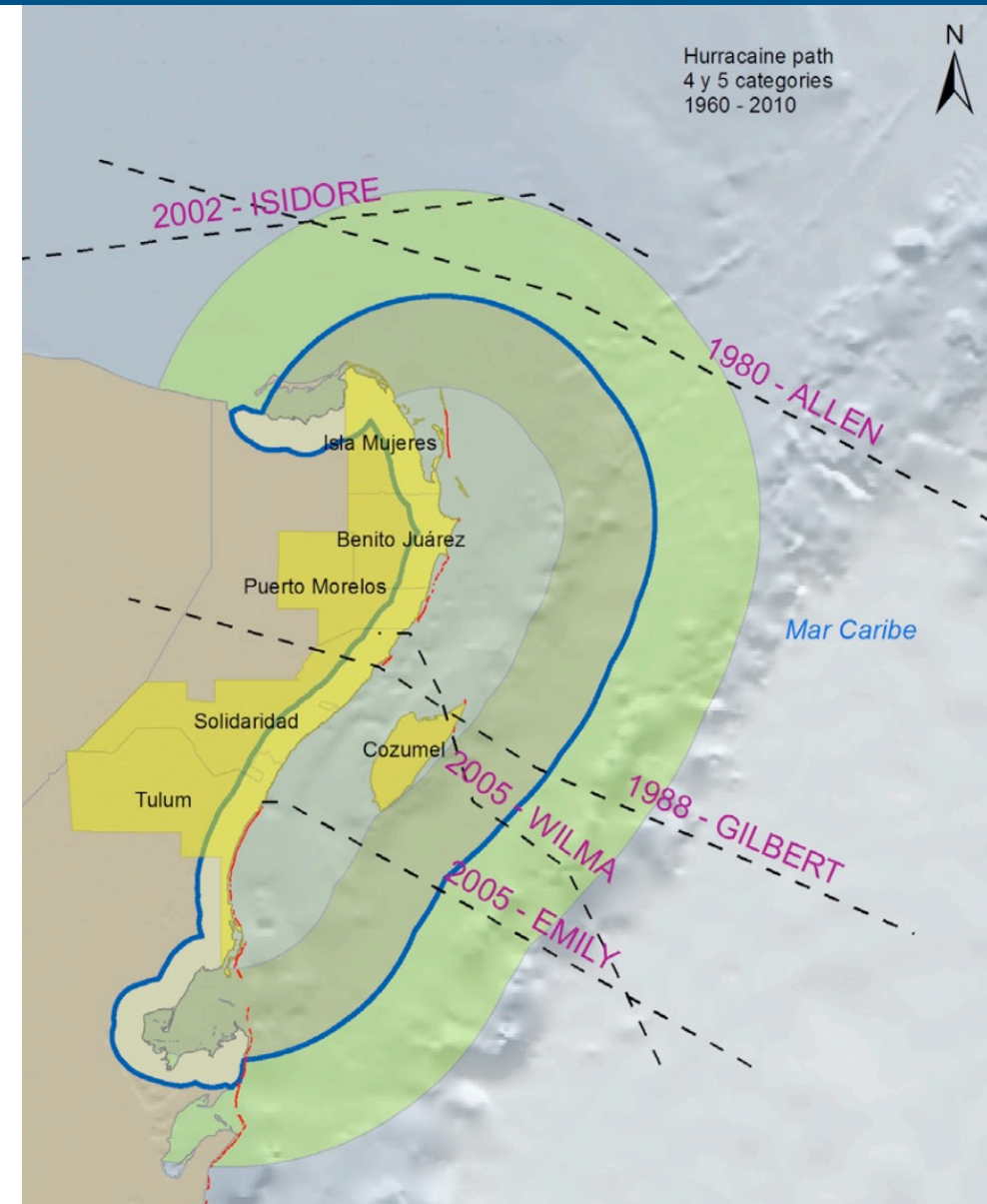
IS THIS INSURABLE?



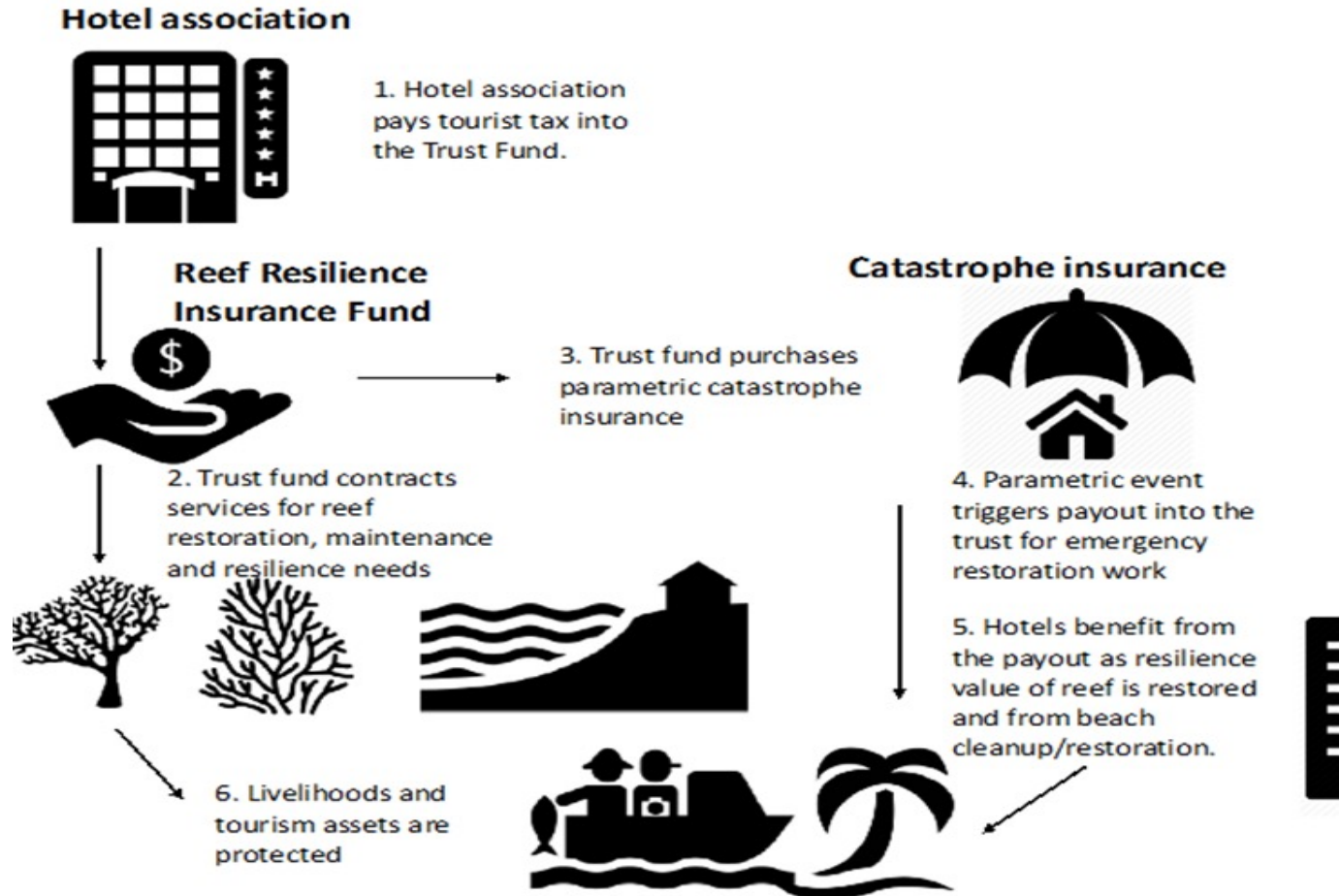
Puerto Morelos, Quintana Roo, México

- Purchaser: Government of the Quintana Roo State via Coastal Zone Management Trust
- Covers beaches and reefs
- 2019: Premium: USD \$500k, cover USD \$4.2 million
- 2020: Premium: USD \$250k, cover USD \$2.1 million

Damage level	Wind speed knots	Payout
Moderate damage	100 to 130	40%
Severe damage	130 to 160	80%
Catastrophic damage	More than 160	100%



a trust fund for nature and insurance



Quintana Roo, México

Reef Brigades: building the capacity to respond



Reef Insurance works



Can We Replicate the Mexico Reef Insurance model in Hawai'i?





- There is interest in reef insurance
- It is legally possible to insure the reef
- There are insurance companies that will sell reef insurance
- Major risks can be insured

- How to finance the premium (\$20-50,000/\$1 million of coverage)
- Lack of capacity for reef repair and restoration
- High cost of restoration (\$10,000-\$1.5 million/hectare)



Hypothetical Hurricane Insurance Policy

- Polygon: 100 km circle centered around sample site
- Parameter = wind speed
- Threshold = category 1 hurricane (>74 miles/hour)
- Cost = ~\$40,000 per \$1 million of coverage

Proposed payout amounts as percentage of maximum insurance cover



Hurricane category	Payout amount (% of limit) at given Circle Radius		
	50 km	75 km	100 km
1	20%	10%	5%
2	40%	20%	10%
3	60%	40%	20%
4	80%	60%	40%
5	100%	80%	60%

- Develop insurance policy
- Identify policy holder/beneficiary
- Create Fund and Advisory Board
- Develop management plan
- Raise funds for additional area/coverage
- Secure sustainable funding source
- Pursue Bleaching and Sediment Insurance

