

A NEW ECOCENTRIC FORMULA FOR REEFS

Leveraging Market-based and Rights of Nature Management

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Why Do Reefs Matter?

Social Value

- 500 million people dependent on reefs for livelihood and food
- Coastal zone supports >40% of the global population; high density; increasing growth rates
- Spiritual, cultural and recreational values, beyond tourism

Economic Value

- Shoreline stabilization, beaches, risk reduction for coastal investments and infrastructure
- Resource base for livelihoods + industries

Environmental Value

- Life support system and climate regulation
- Biodiversity home to 1-10 million species, 25% of fish

Traditional Approaches

- Marine Protected Areas (MPAs): locally and regionally to provide greater protection and limit activities with restrictions and zoning
- UN Convention on the Law of the Sea (UNCLOS): international to provide for sovereignty (rights to the Ocean) and create obligation for States to protect and preserve the marine environment
- ~5 percent of the Ocean is protected, limits on fishing and other activities typically higher than scientifically recommended

Coral Reefs: Globally in Crisis

“Coral reefs continue to deteriorate in all areas where human activities are concentrated... in addition... increase in sea surface temperatures resulted in extensive coral bleaching and mortality over large parts...” Wilkinson, C., Ed., Status of Coral Reefs of the World



Agenda

- Current non-traditional protection frameworks and limitations
 - Market-based conservation
 - Rights of Nature
 - Insurance
- An Ecocentric formula for Reefs
- Discussion

Market-Based Strategies

- Improving environmental quality through property rights and markets
 - Experimental in marine ecosystems because of “open access” nature of oceans as “common pool resources”
- Three core components:
Access, Tenure Security and Enforcement
- How to create economic incentives for private investment in marine conservation?

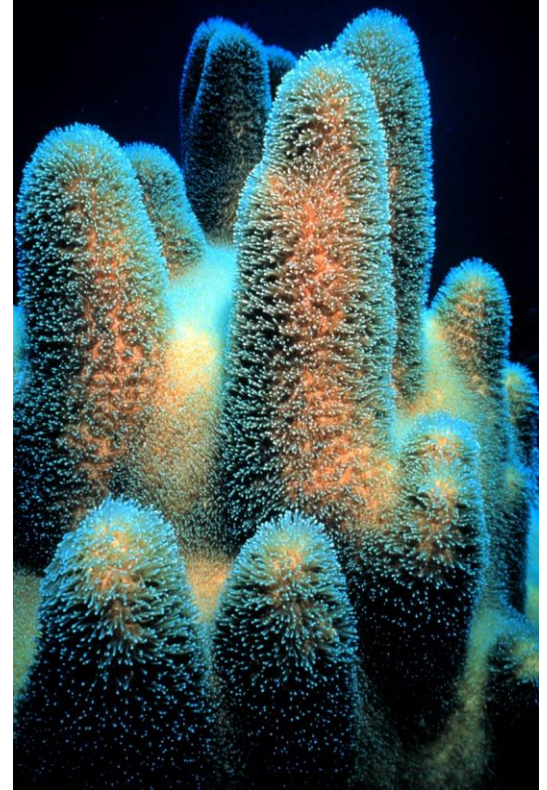


Challenges with Market-Based

- Environmental "goods" and "services" are not like typical market goods
- Market goods are:
 - Excludable: I can keep you from breathing the air in my tank
 - Rivalrous: And I need to because your consumption precludes mine
 - Certain: I know when the tank is filled and when I can use it
- By contrast, environmental resources may be:
 - Non-excludable: Can't keep non-payers out (free rider)
 - Non-rivalrous: Consumption by one doesn't preclude consumption by others
 - Uncertain: Not sure when and if consumption will occur

Reef Property Rights – U.S.

- Public Trust Doctrine – public owns the resource
 - Rights of fishing and navigation included
 - Private rights end at average high water mark
- US Exclusive Economic Zone (EEZ) extends to 200 nautical miles (NM) from the coast

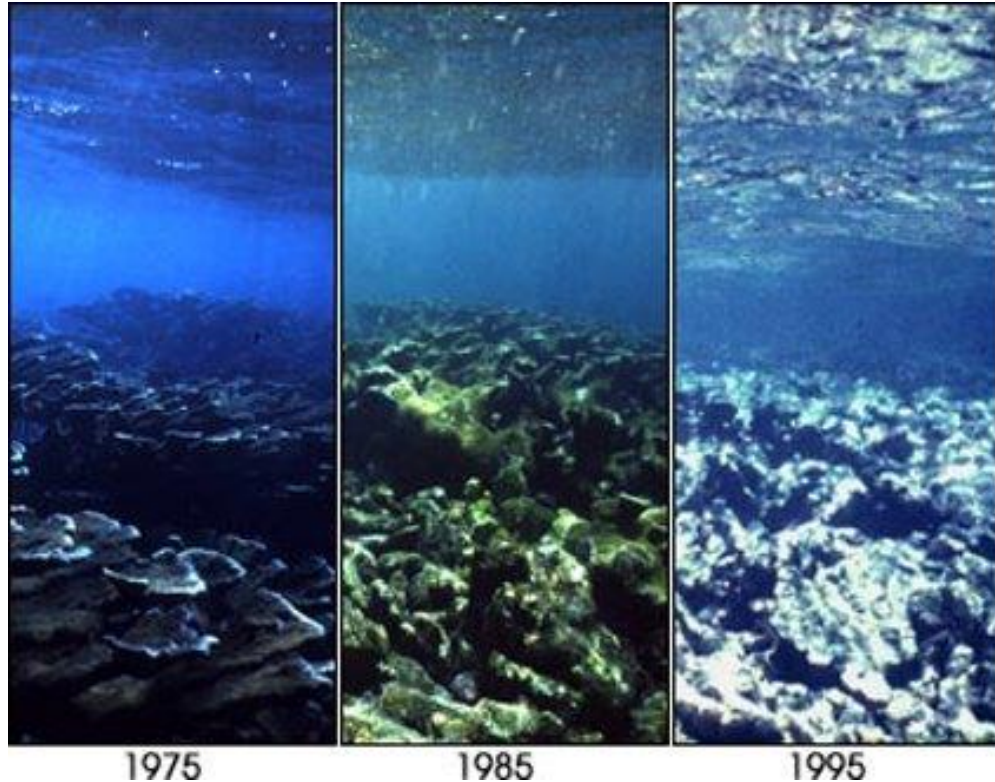


Reef Property Rights – International

- Great Barrier Reef Marine Park Authority
 - Already uses comprehensive ocean zoning
 - Has the right to charge fees to access
 - Early innovator with “reef bonds” to borrow \$ now based on value of future cash flow
- Jamaica
 - Beach Control Act
- Bonaire
 - Government has required fees to access marine park since 1990, pays for management of national parks
- Indonesia, Fiji, Micronesia
 - Historical ownership of submerged lands in some areas; more creativity with marine conservation tools

Policy = Conservation Potential

- Open access – tragedy of commons
- Reef “property rights” + enforcement
- Political process determines optimum reef protection (e.g. where you can/can’t charge fees)



Earth Law Framework

A framework of law that enhances nature's capacity to support all life.

- The law reflects and reinforces social norms
- Earth law is derived from and respects Earth's natural limits
- Earth law unites human rights and rights of future generations with biodiversity and rights of nature
- Earth law considers factors such as population, resource use, the allocation of greenhouse gas sources and sinks, and aggregate limits of production and consumption

Rights of Nature Framework

Nature has rights:



- To exist, thrive, and evolve
- Because it exists
- A recognition not a granting

Changing the paradigm:



- From human centric to Earth centric
- From resource and property to an entity to be respected
- Balances human and environmental needs

Addressing root cause of environmental destruction:



- Economic system > Human systems > Natural systems
- Humans as separate from nature

Rights of Nature Laws

- Over 2 dozen communities across the U.S. and over 20 countries
- Rights for Nature: Nature as a whole with inherent rights
- Legal Personhood/Entity status: Rivers, National Parks and Mountains as subject of rights
- Holistic law that balances human and ecological wellbeing



Rights and Responsibilities

- “Strengthening rights is dependent on strengthening the connections, conceptually and behaviorally, between rights and responsibilities.” Arthur J. Dyck
- Every human being is responsible for respecting and living in harmony with Mother Earth
- Focus on moral and social *responsibilities* rather than lack of rights; i.e. future generations

Challenges with Rights of Nature

- Balancing with other rights
- Economic system and traditional cost benefit analysis hard to overcome
- What rights does Nature have and how do we implement?
- Rights of Nature means new standards, but those have largely been created judicially



Emerging Approach: Insurance

Mesoamerican Reef Insurance with Swiss Re, the Nature Conservancy, and the Government of Quintana Roo

Damage from hurricanes; 17% live coral cover lost

Parametric Insurance: pre-agreed amount paid out on triggers (category 4 hurricane) and risk transfer

Trust manages insurance and restoration projects

Builds capacity to repair and restore

Challenges with Insurance

- Healthier reefs have more to lose; degraded reefs not as useful (less risk)
- Most other risks are not insurable, e.g. water pollution and climate change
- "Free-riding"
- Insurance for loss to human use and benefit



Investigating the Viability

Leveraging both market-based and Rights of Nature allows us to:

- Designate Coral Reef as a legal entity; clear ownership and rids of property rights constraints
- Limit access based on higher standards
- Reinforces our responsibilities towards Coral Reefs
- Creates incentives for proactive stewardship activities and fills the gap between noninsurable risks, such as GHG emissions and land-based pollution

Pathways to Explore

A

Rights for
Reefs

B

Reef as Legal
Entity

C

Guardianship
Model

Codify Rights of Reefs

- Create new law that recognizes the Rights of Coral Reefs
- Ecuadorian Constitution: Nature... has the right to the maintenance and regeneration of its life cycles...
- Special Law: Nature=society=economy and the "respect for the Rights of Nature"
- Rights of Reefs can be invoked to limit destructive activity



Reef as a Legal Entity

- New law, insurance, judicial decision
- 2011: Action brought on behalf of Government as “the owner, custodian and guardian” of the Belize Barrier Reef
- The “living reef ecosystem [is] not the ‘property’ of anyone”
- Higher award for damages; \$11 million



Guardianship Model

- 2000: Hauraki Marine Gulf “Rather than thinking of the environment and its bounty as an entitlement, considering it as a being in its own right will help us to rethink our reciprocal responsibilities and work toward a better balance.”
- The guardians or “Kaitiaki” have the “discretion and judgment over the issuing of permits.”



Solution to Address the Root Cause

- If countries implement could there be a possibility to sue large GHG emitters, or countries not meeting the Paris Climate Agreement?
 - Awards for damages towards restoration activities
- Palau: a leader in ocean conservation exploring opportunities within new legislation

Discussion

- Do you think such an Eco-centric approach can be possible? And why?
- What approach or pathway do you think could work where you are?
- Are you convinced? Interest in learning more or piloting together?



Thank you



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Photo credit

- Growing Coral in aquariums, Brian Snelson
- Pillar coral in the Florida Keys NMS, William Harrigan, NOAA
- Elfinstone Reef, [Alexander Vasenin](#)
- Whanganui River, Radio NZ 2017
- Belize Barrier Reef, [Tourism on the Edge](#)
- Mesoamerican Reef, Kyle Coffin
- Palmyra Atoll National Wildlife Refuge, Jim Maragos, U.S. Fish and Wildlife Service