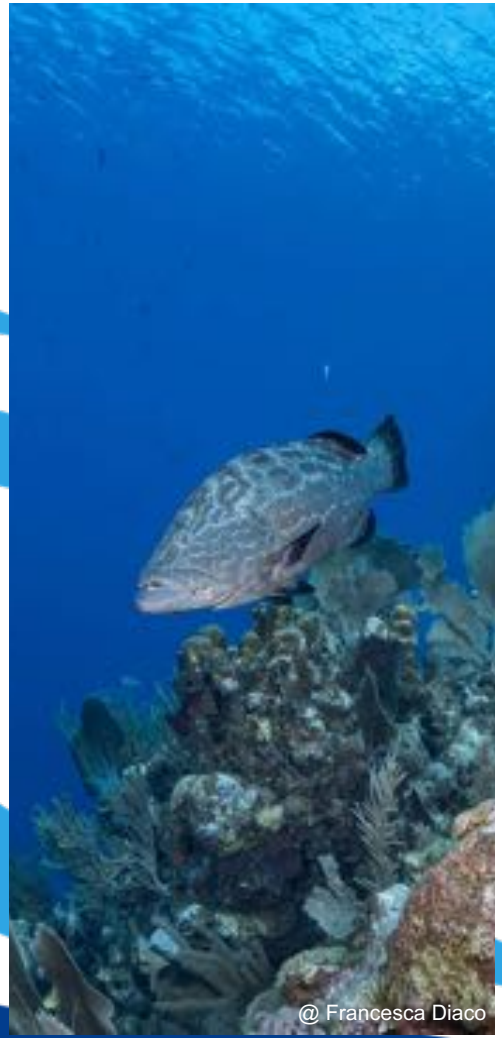


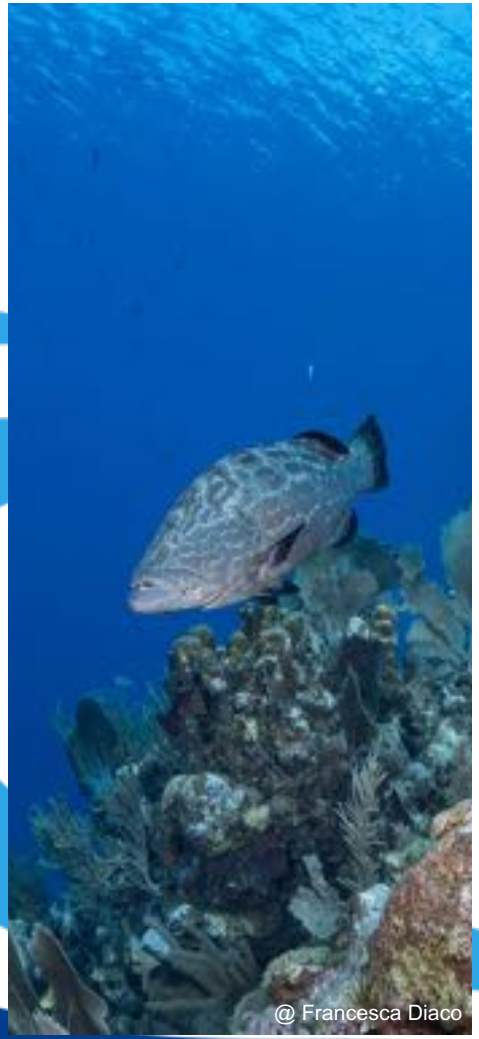
2021 Eco-Audit Of the Mesoamerican Reef Countries
March 10, 2020

10:00 Welcome and Introductions by HRI Team
With Housekeeping / Agenda /- Marisol Rueda, HRI
10:05 VIDEO overview of 2021 Eco-Audit

10:15 Introduction and Background of the Eco-Audit -
Melanie McField, HRI
10:25 Main Results by theme - HRI Coordinators
11:00 New Interactive Eco-Audit Webpage - Marisol
11:05 Questions & Comments from Participants

11:20 Water Our Right Campaign Announcement -
Alejandra Serrano, ELAW
11:25 Sustainable Financing for the Future -
Maria Jose Gonzalez, MARFund
11:30 Thanks & Closing - Melanie and the HRI Team


THE SUMMIT FOUNDATION
Smithsonian Institution
OAK FOUNDATION
AGRRA
MAR FUND
Perigee
WORLD RESOURCES INSTITUTE
CONSERVATION INTERNATIONAL
MISSION BLUE
Wildlife Conservation Society
Hydroheart
EDF ENVIRONMENTAL DEFENSE FUND
Finding the ways that work
WWF
BELIZE FISHERIES DEPARTMENT
Sustainable Fisheries For Our Future
The Nature Conservancy
Protecting nature. Preserving life.
AIDA
marti
the MesoAmerican Reef Tourism Initiative
LIDERAZGO SAM
Programa de Liderazgo en el Sistema Arrecifal Mesoamericano
iLCP
INTERNATIONAL LEAGUE OF CONSERVATION PHOTOGRAPHERS
invmar
BELIZE AUDUBON SOCIETY
blue ventures
beyond conservation
OCEANA
USAC TRICENTENARIA
GUATEMALA
MINISTERIO DE AMBIENTE Y RECURSOS NATURALES
GUATEMALA
CONSEJO NACIONAL DE ÁREAS PROTEGIDAS
CONAP
ecomar
"Conservation through Education"
University of Belize
UB
ERI
Environmental Research Institute
BELIZE COASTAL ZONE MANAGEMENT AUTHORITY & INSTITUTE
FRAGMENTS of HOPE
Semillas del Océano
GUATEMALA
MINISTERIO DE AGRICULTURA GANADERÍA Y ALIMENTACIÓN
Alianza de Derecho Ambiental y Agua ADA2
Abogando por el Derecho Humano al Agua
SEA
Turneffe Atoll
Sustainability Association
BELPO
Belize Institute of Environmental Law & Policy
TIDE
CUERPOS DE CONSERVACION OMOA
Fundación Islas de la Bahía
GOBIERNO DE LA REPÚBLICA DE HONDURAS
SAG-DIGEPESCA
DIRECCIÓN GENERAL DE PESCA Y ACUICULTURA
ROATAN MARINE PARK
pixan'ja
FUNDAECO
Mundo Azul
FUNDACIÓN
ABIMA
Asociación de Biología Marina Guatemala
MANCOMUNIDAD DE MUNICIPIOS DEL GOLFO DE HONDURAS
GOBIERNO DE LA REPÚBLICA DE HONDURAS
INSTITUTO NACIONAL DE CONSERVACIÓN Y DESARROLLO FORESTAL, ÁREAS PROTEGIDAS Y VIDA SILVESTRE
Fundación Cerro Cochinos
BICA
Bay Islands Conservation Association
Healthy Reefs
for healthy people
colectividad RAZONATURA
CENTRO ECOLÓGICO AKUMAL
CONANP
COMISIÓN NACIONAL DE ÁREAS NATURALES PROTEGIDAS
CINDAQ
Centro Investigador del Sistema Acuífero de Quintana Roo
GOBIERNO DE LA REPÚBLICA DE HONDURAS
SECRETARÍA DE ENERGÍA, RECURSOS NATURALES, AMBIENTE Y MINAS
MiAmbiente+
TELA MARINE RESEARCH CENTER
CSFI
COROZAL SUSTAINABLE FUTURE INITIATIVE
CORAL REEF ALLIANCE
COBI
ECOSUR
ARKIPELAGO conceptos
BARCO LAB
TAKATA
RESEARCH CENTER
Sustentabilidad Turística
SECRETARIA DE TURISMO
INSTITUTO HONDUREÑO DE TURISMO
gef
FUCAGUA
PROLANSATE
Fundación Ambientalista
MARALLIANCE
Centinelas del Agua A.C.
CORALIUM
Cinvestav
CEM
Centro de Estudios Marinos
DIBIO
Dirección General de Biodiversidad
gvi
Amigos de Isla Contoy
asociación civil
FMCN
FONDO MEXICANO PARA LA CONSERVACIÓN DE LA NATURALEZA, A.C.
25 AÑOS
INSTITUCIÓN PRIVADA
CORAL HERO
LUCEM ASPICIO
UNIVERSIDAD NACIONAL AUTÓNOMA DE HONDURAS
1847
amatela
WSORC
Operation Wallacea
UNDP
PARQUE NACIONAL MARINO
ISLAS DE LA BAHÍA
Marino Costero
CEMDA
QUINTANA ROO
GOBIERNO DEL ESTADO
ASOCIACION DE HOTELES RIVIERA MAYA
OCEANUS A.C.
amigos de Sian Ka'an
ACCIONES POR LA NATURALEZA



Taking a closer look at that pace of implementation (rate of increase in score)

EA Year	Score	Rate Change
2011	54%	_
2014	58%	1.3% / yr
2016	62%	2.0% / yr
2021	66%	0.8% / yr

This most recent Eco-Audit assessment period showed a change for the worse, as did our 2020 Report Card – measuring the first decline in reef health in over a decade.

Healthy Reefs Collaborative Conservation

73 partner groups

Reef Monitoring & Database
Standardized Protocols, trainings, online database

Report Cards
Evaluate Reef Conditions
Make Recommendations

Eco Audits
Evaluate Implementation of Recommendations

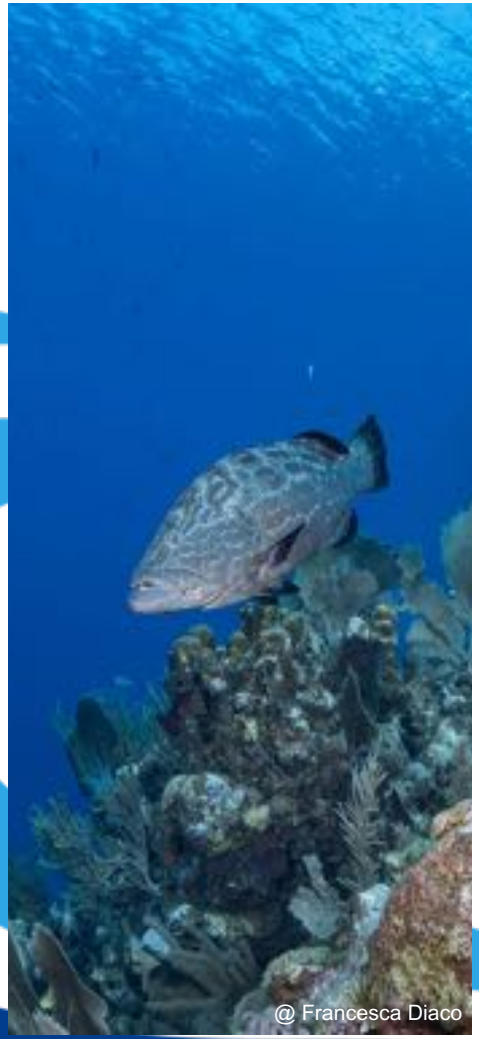
Media
Wise and frecuent use of media

Improved Policies and Management = Healthy Reefs

19 week-long training courses & > 250 trained field biologists and database users

Healthy Reefs
for healthy people

16 years of science & collaborative conservation



What is an Eco-Audit?

- Evaluation of Implementation of Report Card Recommendations
- Specific and verifiable criteria
- All Countries are held to the same bar
- All rankings are verified with documentation
- Transparent and inclusive processs

What is the Objective?

- Catalyze faster more effective management to improve reef health
- Evaluate each country's actual implementation of recomendations
- Assess each country's effort with comparable accountablity

- **All Documets are Available at www.healthyreefs.org**

- Unprecedented in scale and scope
- Four countries
- Over 50 organizations
- Over 100 individuals
- Over 300 supporting documents collected
- Serves as basis for measuring future progress

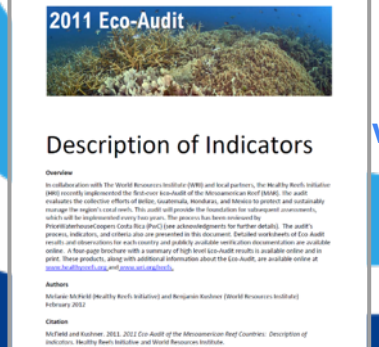
28 indicators evaluated x 4 countries
112 Result scores for indicators
140 Results with regional averages
175 Results with theme averages per assessment period
~ 700 Results Overall

pwc

WORLD RESOURCES INSTITUTE

Four Eco-Audits Over the Last Decade

2011



2014

2016

2021

all available at
www.healthyreefs.org

Example of the Criteria Page for Each of the 28 Indicators

2b. Special regulations for grouper / spawning sites

Justification: The reef food web is highly complex. The removal of just one group of fish from the food web can have widespread effects throughout the reef ecosystem, ultimately weakening and destabilizing it. The reproductive behavior of groupers makes them particularly vulnerable during spawning, and many spawning aggregation sites (SPAGs) have already been overfished and depleted of grouper. This indicator measures efforts to protect these sites and species.

Ranking Criteria
5 – At least 90 percent of known grouper SPAGs are fully protected (year-round in MPAs) with legal regulations and at least 50 percent of these have good enforcement. [3]
4 – At least 75 percent of known grouper SPAGs are fully protected (inside MPAs) and at least 20 percent have at least moderate enforcement. [3]
3 – There are closed seasons, size limits, or catch limits specific for grouper
2 – There has been some effort at drafting regulations, research, or a public campaign on the topic
1 – No documentation of actions that meet the criteria to achieve a higher score is available

Means of Verification: list and location of grouper SPAG sites by country, official MPA list, copy or draft of fishery or MPA legislation, copy of consultation reports, number of enforcement actions, MPA original data collection as to the degree of enforcement at each SPAG site, and campaign strategies for conservation.

Calculation: Grouper SPAGs fully protected=((Total # of fully protected SPAGs/Total # of SPAGs) X 100); percentage with at least good enforcement=((Total # of SPAGs with good enforcement/Total # of fully protected SPAGs) X 100) and percentage with at least moderate enforcement=((Total # of SPAGs with good enforcement + moderate enforcement)/Total # of fully protected SPAGs) X 100).

2021 CRITERIA UPDATE: to Indicators 1b and 1c

The Actual TARGET for fully protected Replenishment Zones was 20% since the first Report Card in 2008

The original 2011 “Description of Indicators” Eco-Audit document says:

1b. Percent of a country’s territorial sea included in fully protected zones

The longer-term target is 20% of territorial sea under full protection/fisheries replenishment zones. Future Eco-Audits will gradually increase the level of protection to meet this target.

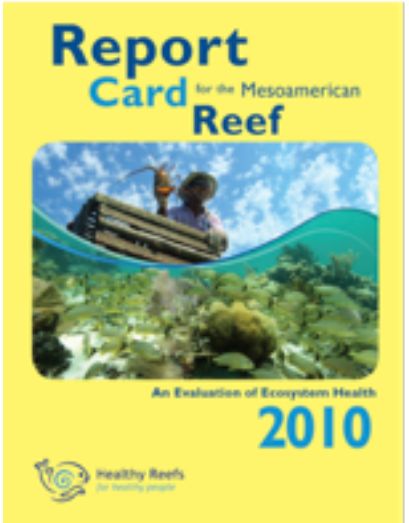
PREVIOUS TARGETS OF 5% OF TS IN RZ (1b)
AND 10% OF CORAL REEF AREA IN RZ (1c)
WERE INTERIM TARGETS AS BENCHMARKS

Replenishment Zone Targets for Indicators 1b &1c

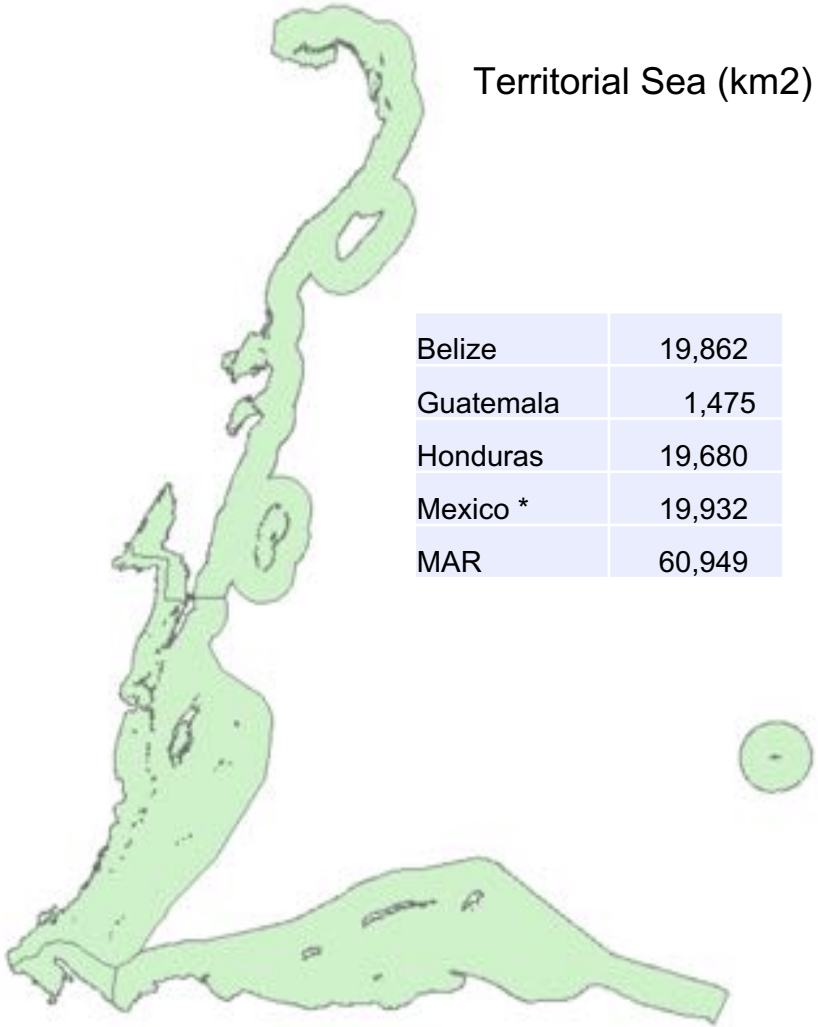
2008 Report Card Recommendations:
"Create and implement coastal zone management plans that include at least 20% of marine and coastal areas under full protection"

2010 Report Card Recommendations:
"Achieve 20% territorial sea under full protection (no-take) within MPAs.

In two years (by 2012) achieve at least 5% on a regional scale"

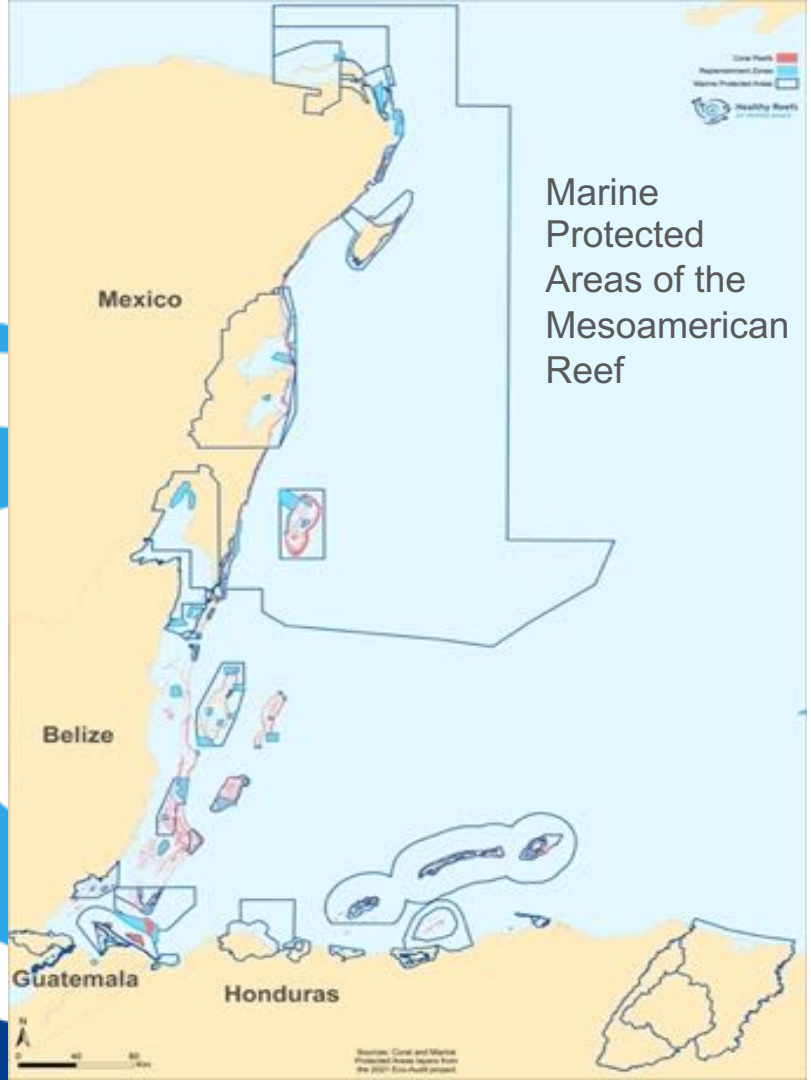


Marine Protected Areas of the Mesoamerican Reef

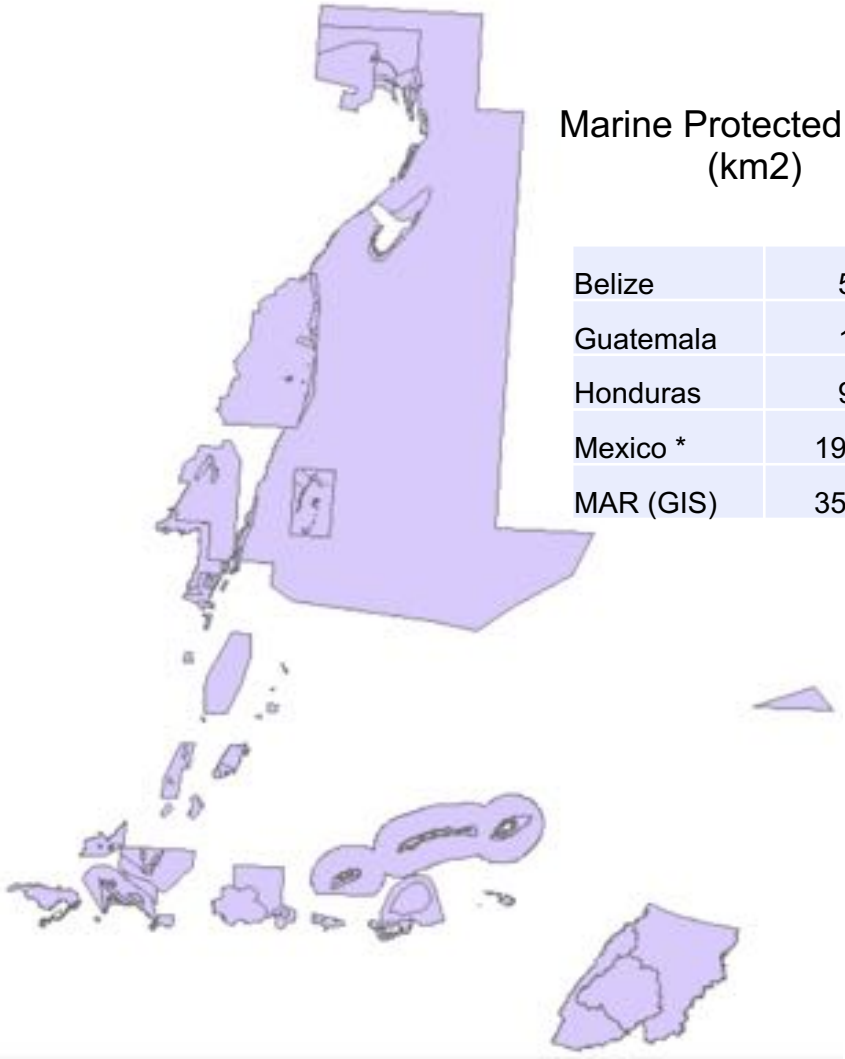


Territorial Sea (km2)

Belize	19,862
Guatemala	1,475
Honduras	19,680
Mexico *	19,932
MAR	60,949



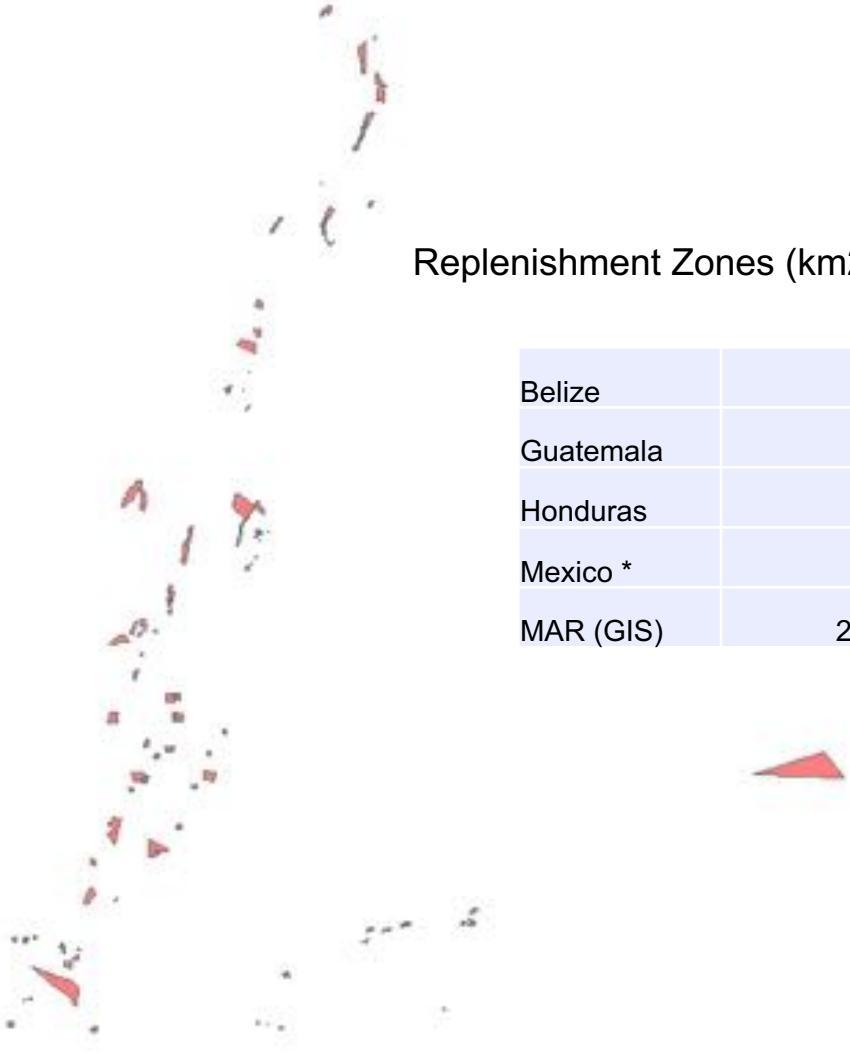
Marine Protected Areas of the Mesoamerican Reef



Marine Protected Areas (km2)

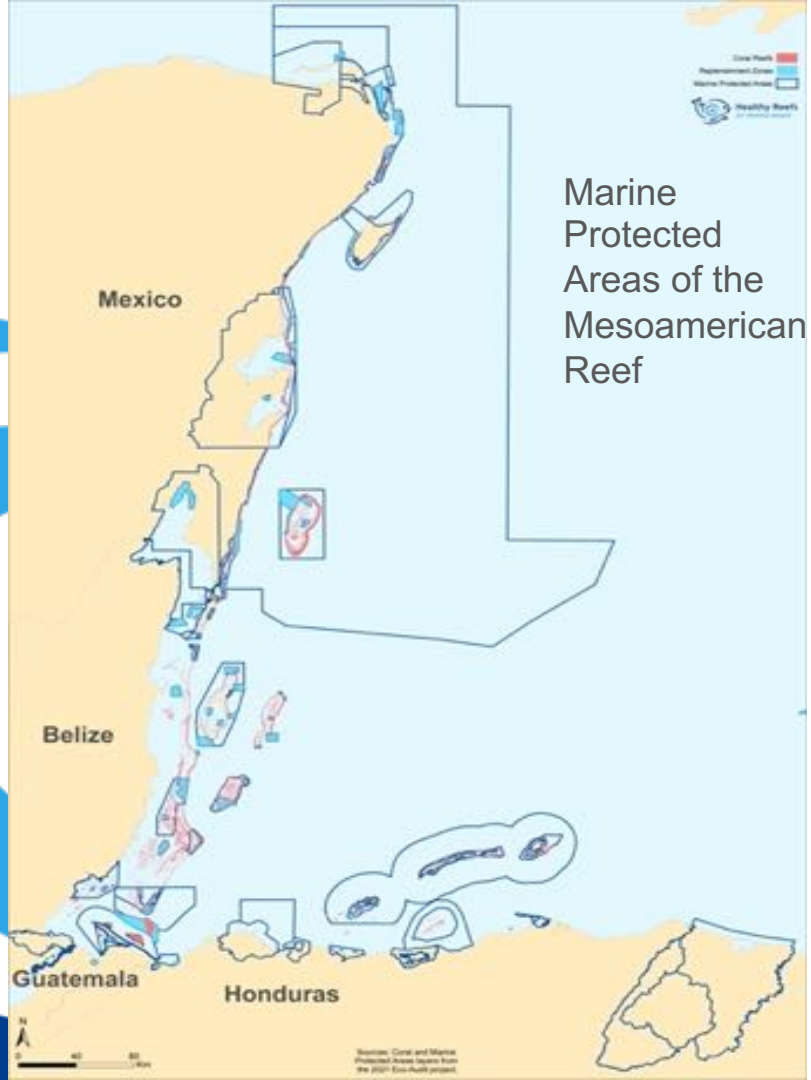
Belize	5,015
Guatemala	1,093
Honduras	9,633
Mexico *	19,505
MAR (GIS)	35,245

Marine Protected Areas of the Mesoamerican Reef



Replenishment Zones (km2)

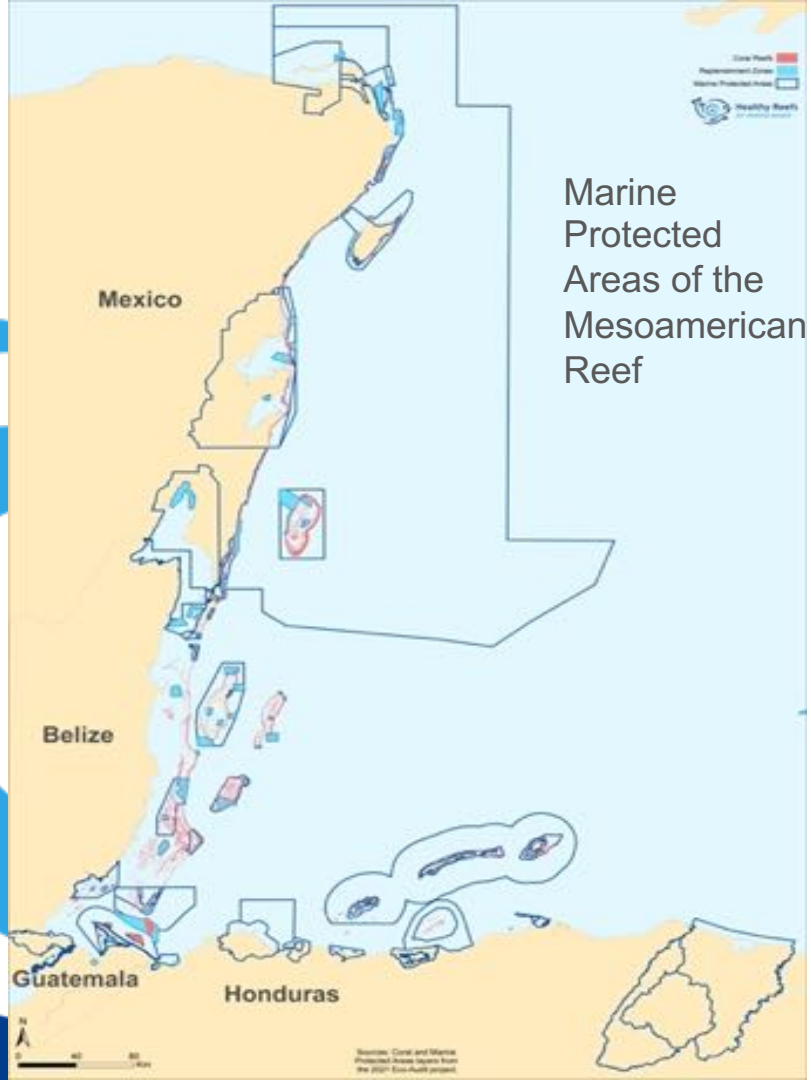
Belize	607
Guatemala	180
Honduras	510
Mexico *	723
MAR (GIS)	2020



2021 MPA Statistics

	% TS in MPA	% TS in RZ	% Reefs in RZ
Belize	25%	3%	12%
Guatemala	74%	12%	32%
Honduras	49%	3%	12%
Mexico *	98%	4%	18%
MAR	58%	3%	15%

	RZ area (km2)	
	2021	2011
Belize	607	399
Guatemala	180	0
Honduras	510	522
Mexico *	723	261
MAR	2020	1182



Marine Protected Areas of the Mesoamerican Reef

	Coral Reefs (km2)	Reefs within RZ (km2)
Belize	673	79
Guatemala	95	30
Honduras	145	17
Mexico *	317	56
MAR (GIS)	1,230	183

coral reef habitat mapping efforts now underway will update these numbers later this year

2021 Eco-Audit Resources include:

- 2021 Eco-Audit Interactive website
- 10 min video
- Results Summary Table for all Years, Indicators & Themes
- 4 Country-specific Results Workbooks (PDF)
- Country folders with supporting documentation (MOV's)
- Description of Indicators Document (revised in 2021)
- GIS Shape files and Metadata Appendix
- Presentation of Results (PowerPoint)

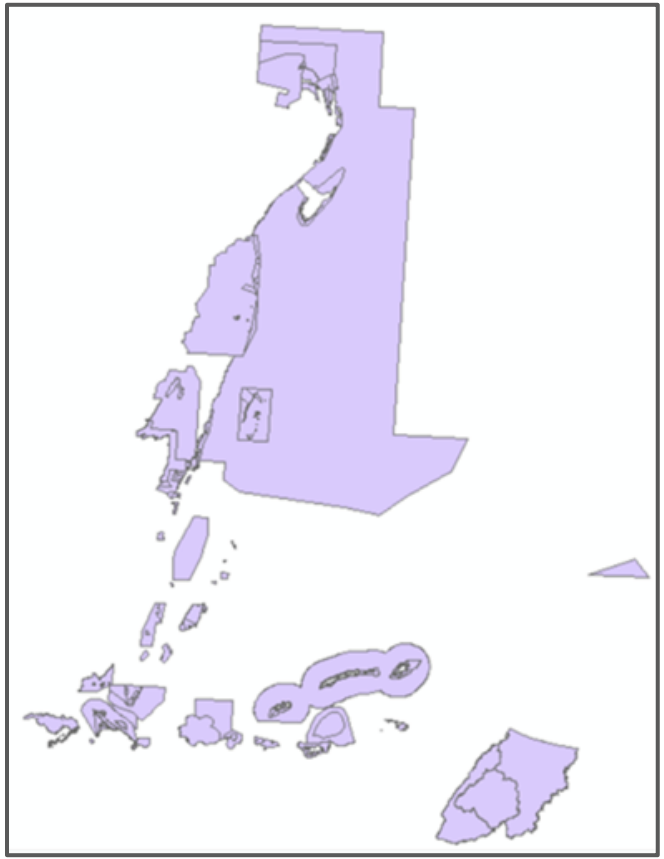
all available at www.healthyreefs.org - in March 2021

Theme 1
Marine Protected Areas

"Any area of intertidal or subtidal terrain, together with its overlying waters and associated flora, fauna, historical and cultural features, which has been reserved by legislation or other effective means to protect part or all of the enclosed environment".

- IUCN, 2011

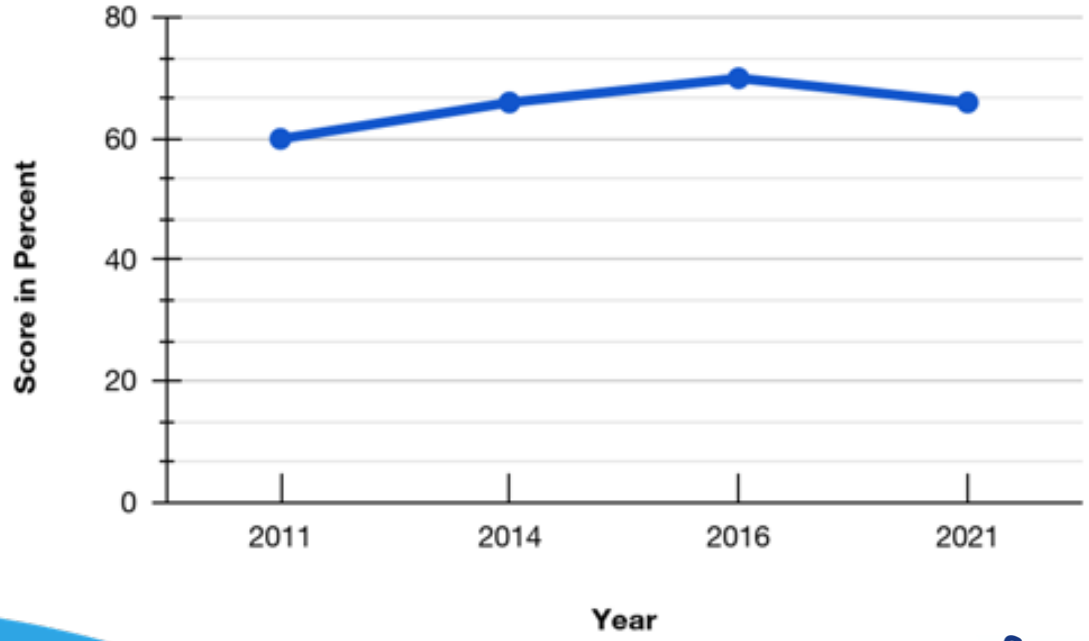
1a. Percent of a country's territorial sea included in gazetted MPAs
1b. Percent of a country's territorial sea included in fully protected zones
1c. Percent of mapped coral reef area included in fully protected zones
1d. Percent of MPAs with good management
1e. Percent of MPAs with good enforcement
1f. Generation of alternatives for fishers within the network of MPAs



MPAs of the MAR

Theme 1 - Marine Protected Areas

MAR Score Over Time



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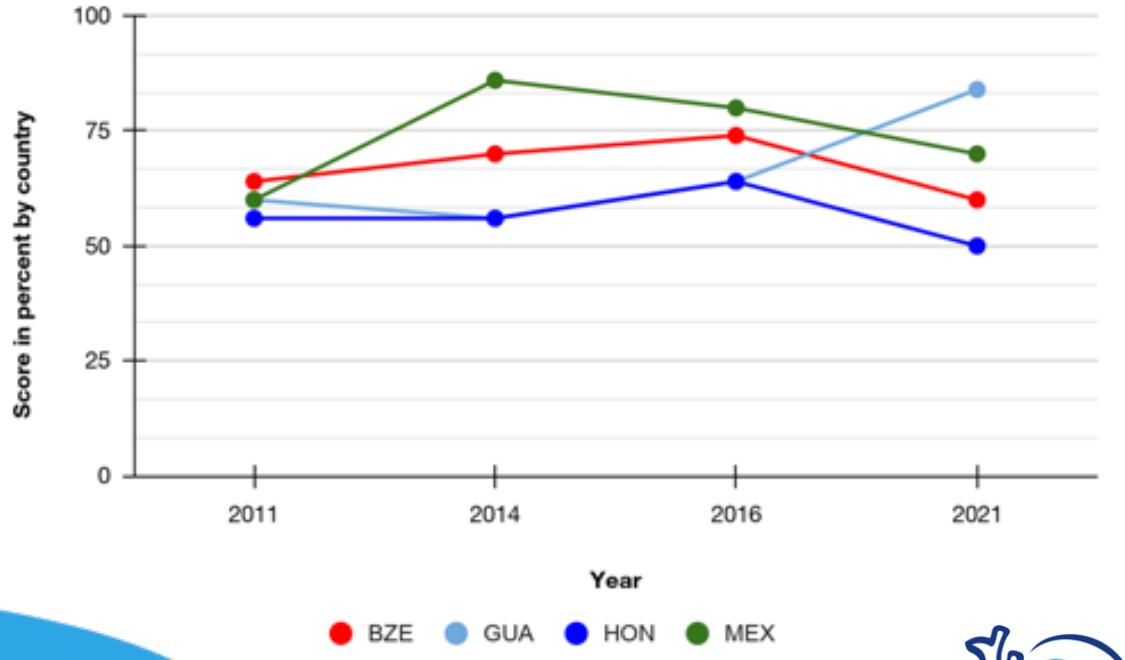
for healthy people

Theme 1 - Marine Protected Areas

Scores Per Country Over Time



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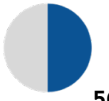
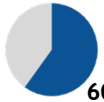
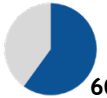
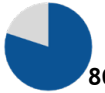
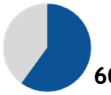
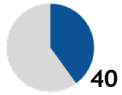
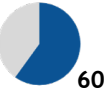
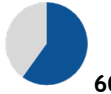
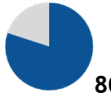
Theme 1 - Marine Protected Areas

	MAR				
	 66%	 60%	 84%	 50%	 66%
1a. %TS in MPA	 100	 100	 100	 100	 100
1b. %TS in Replenishment Zones	 30	 20	 60	 20	 20
1c. % Coral Reefs in Replenishment Zones	 80	 60	 100	 60	 80
1d. MPAs w/ Good Management	 55	 60	 100	 20	 40
1e. MPAs w/ Good Enforcement	 55	 60	 80	 20	 60
1f. Economic Alternatives within MPAs	 75	 60	 60	 80	 100

Theme 2 - Ecosystem Based Fisheries Management

Overfishing and destructive fishing are the most widespread threats to coral reefs. More than 80 % of the world's fisheries are overexploited or have collapsed. Recovery of fisheries requires the appropriate management of fishing areas and practices, as well as efforts to identify and address underlying social and economic factors leading to overharvesting.

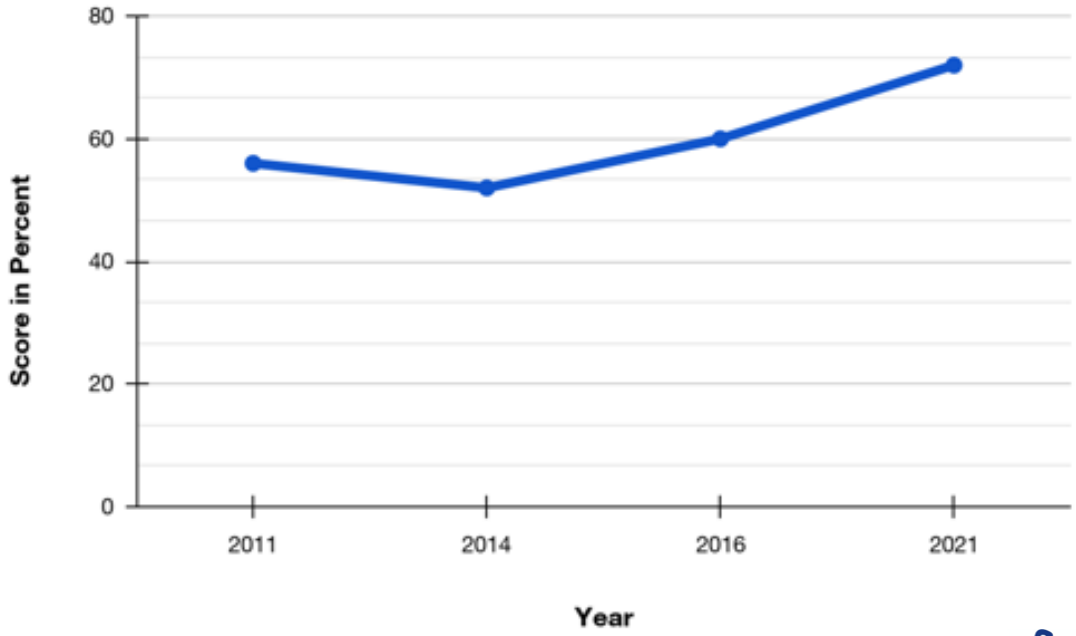
In this indicator we measure:

- 2a. Harmonizing fisheries regulations among countries
- 2b. Grouper regulations/FSAs
- 2c. Protection of key grazers (parrotfish)
- 2d. Transform all open-access fisheries to rights-based sustainable fisheries (added 2014)

ILCP/Contreras Koob

Theme 2 - Ecosystem Based Fisheries Management

MAR Score Over Time



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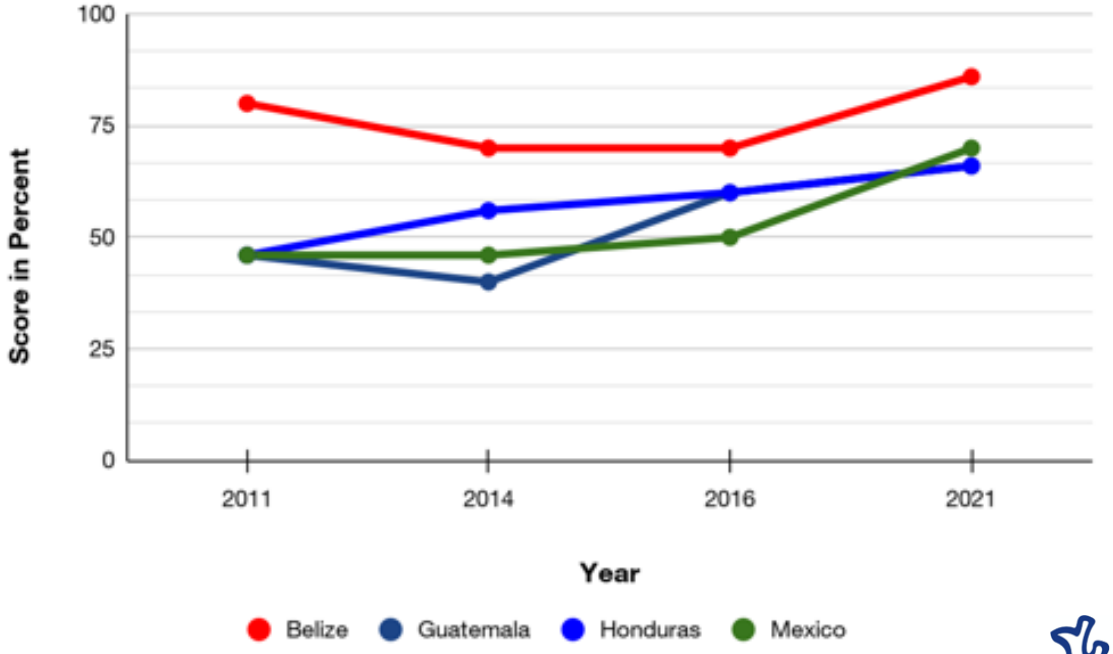
Theme 2 - Ecosystem Based Fisheries Management

Scores Per Country Over Time



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Theme 2 - Ecosystem Based Fisheries Management

Theme 2 average score	MAR	Belize	Guatemala	Honduras	Mexico
	72%	86%	66%	66%	70%
2 a. Harmonizing fisheries regulations among countries	60	60	60	60	60
2 b. Grouper regulations / FSAs	80	80	80	80	80
2 c. Protection of key grazers (parrotfish)	80	100	100	40	80
2 d. Transform all open-access fisheries to rights-based sustainable fisheries	65	100	20	80	60

Theme 3 - Coastal Zone Management

Coastal development—including human settlements, industry, aquaculture, or infrastructure—can dramatically alter nearshore ecosystems. Direct physical damage such as dredging or land filling, or indirect damage through increased runoff of sediment, pollution, and sewage, can greatly impact the health of a reef.

- 3a. Coastal zone planning regulations
- 3b. Watershed management plans related to coastal zone planning (must include water quality monitoring)
- 3c. Mangrove extent as an indicator of the effectiveness of the coastal zone management plan implementation

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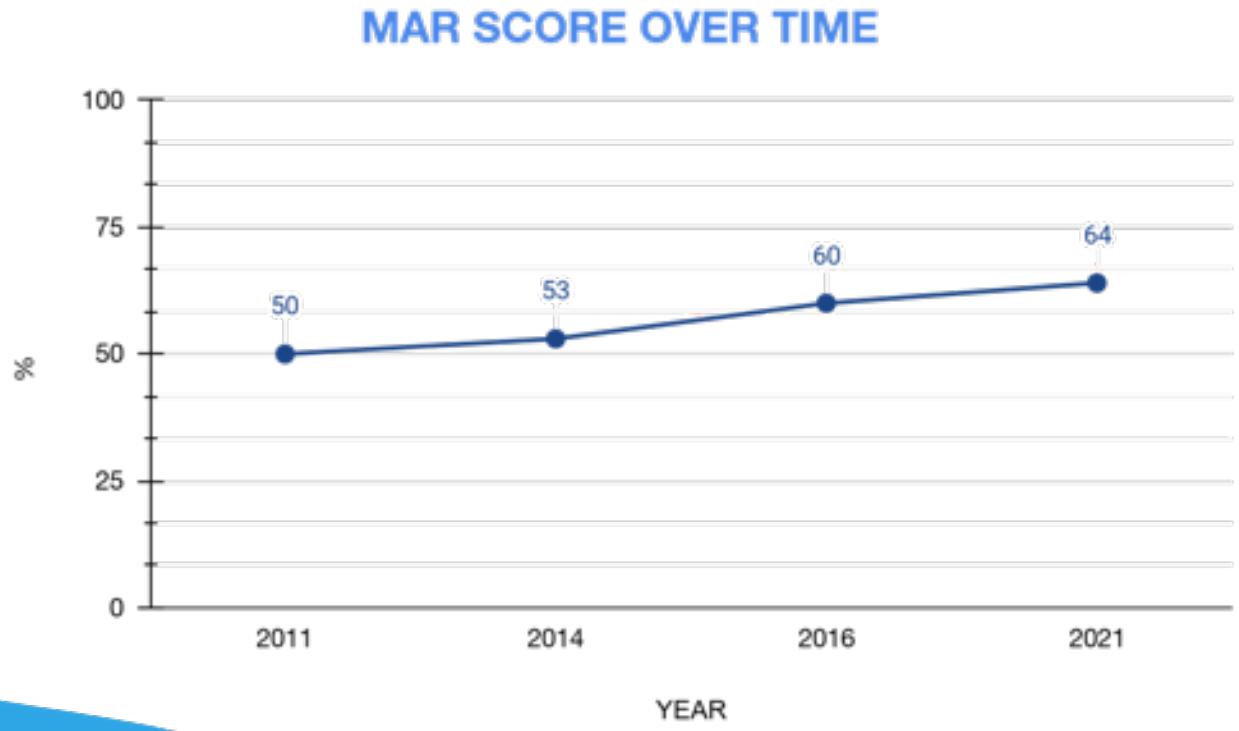
for healthy people

Theme 3 - Coastal Zone Management



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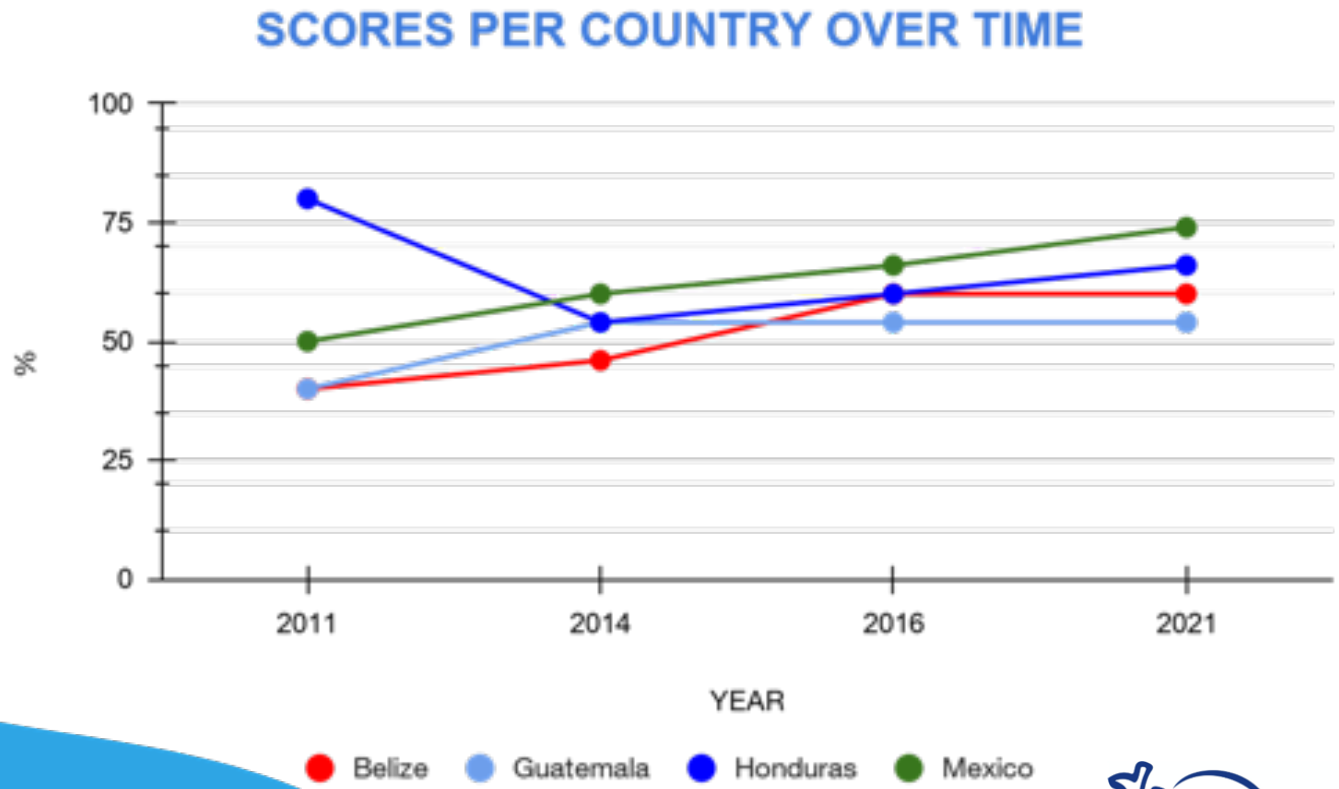
Theme 3 - Coastal Zone Management



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Theme 3 - Coastal Zone Management

Theme 3 Average Score

	MAR				
	 66%	 66%	 54%	 66%	 74%
3a. Status of coastal zone plan or zoning regulations and enforcement	 75	 80	 40	 80	 100
3b. Watershed management plans related to coastal zone planning	 65	 60	 60	 60	 80
3c. Mangrove extent as an indicator of the effectiveness of the coastal zone management plan implementation.	 55	 60	 60	 60	 40
		Belize	Guatemala	Honduras	Mexico

** Belize score 1a pending review*

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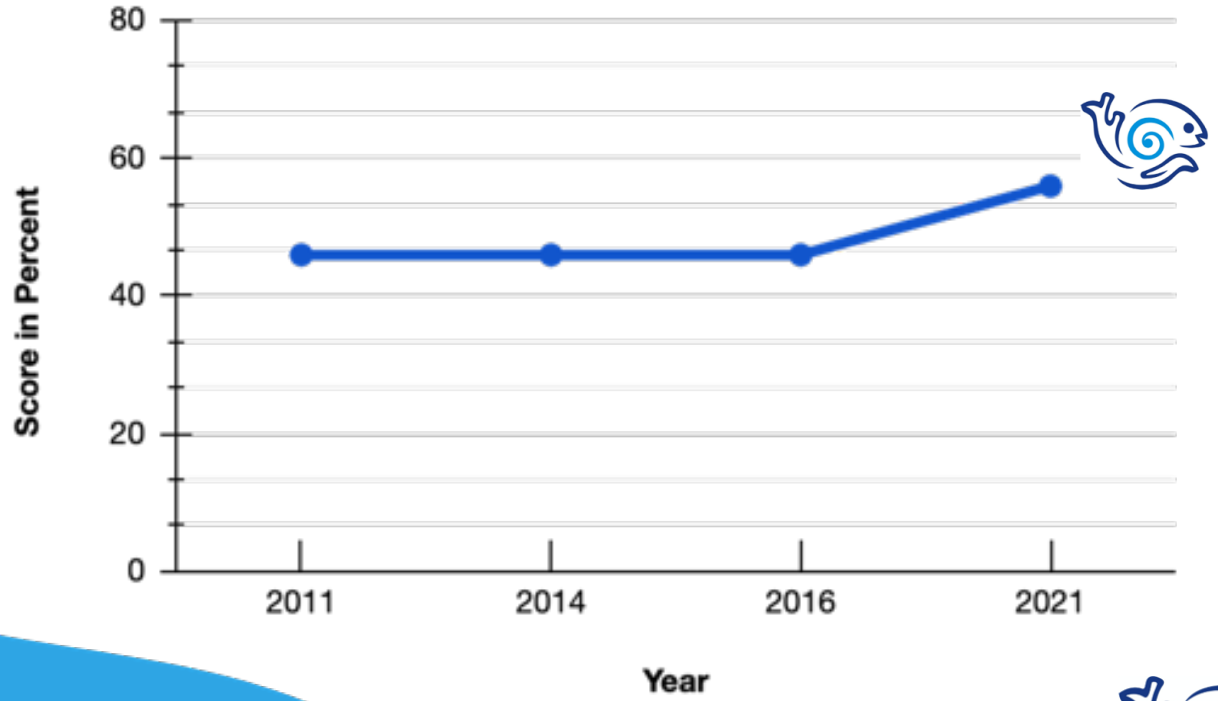
Theme 4 - Sanitation and Sewage Treatment

The high level of nutrients present in sewage can result in proliferation of algae that compete for space on the reef. Sewage also contains bacteria and viruses known to harm marine life, including corals. Wastewater (including sewage and industrial effluent) must be treated and controlled to reduce the nutrients and toxins that reach coral reefs.

4a: LBS protocol ratified and implemented
4b: New tertiary wastewater treatment plants
4c: Implementation of best practices for pollution sources reduction

Theme 4 - Sanitation and Sewage Treatment

MAR Score Over Time



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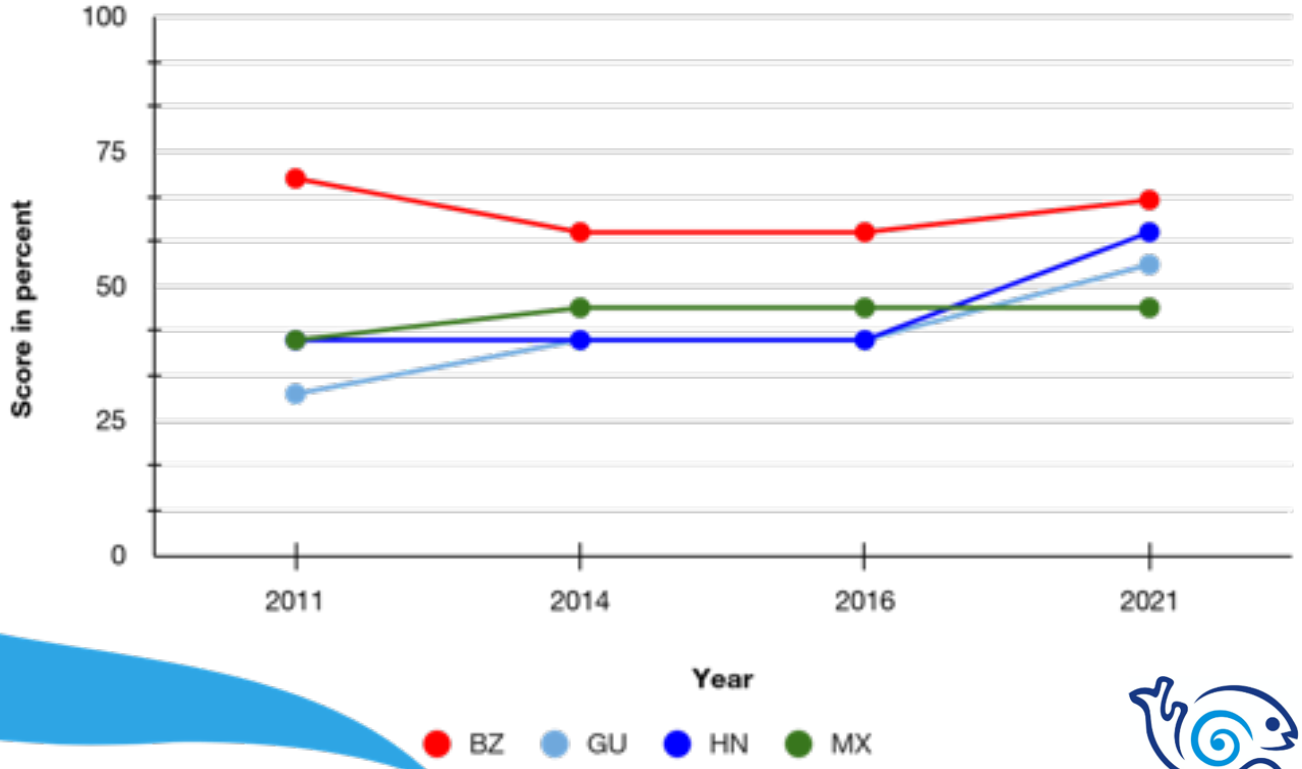
Theme 4 - Sanitation and Sewage Treatment

Countries Score Over Time



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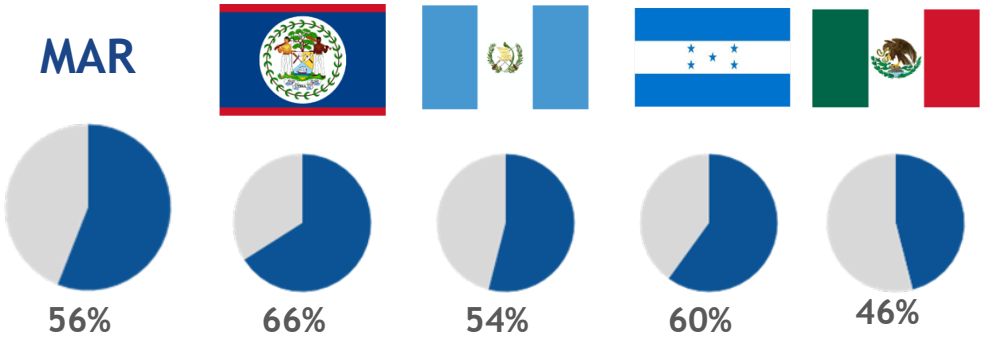
Theme 4 - Sanitation and Sewage Treatment

Theme 4 average score



	MAR	Belize	Guatemala	Honduras	Mexico
4a. Standards for wastewater management / sewage treatment	60	80	40	80	40
4b. New infrastructure for sewage treatment	55	60	60	60	40
4c. Reduce upstream watershed pollution sources	55	60	60	40	60

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Theme 5 - Research, Education and Awareness

Scientific information about the reef ecosystems and creating awareness is important to better recognize problems, address threats, and gain political, financial, and public support for reef management and conservation.

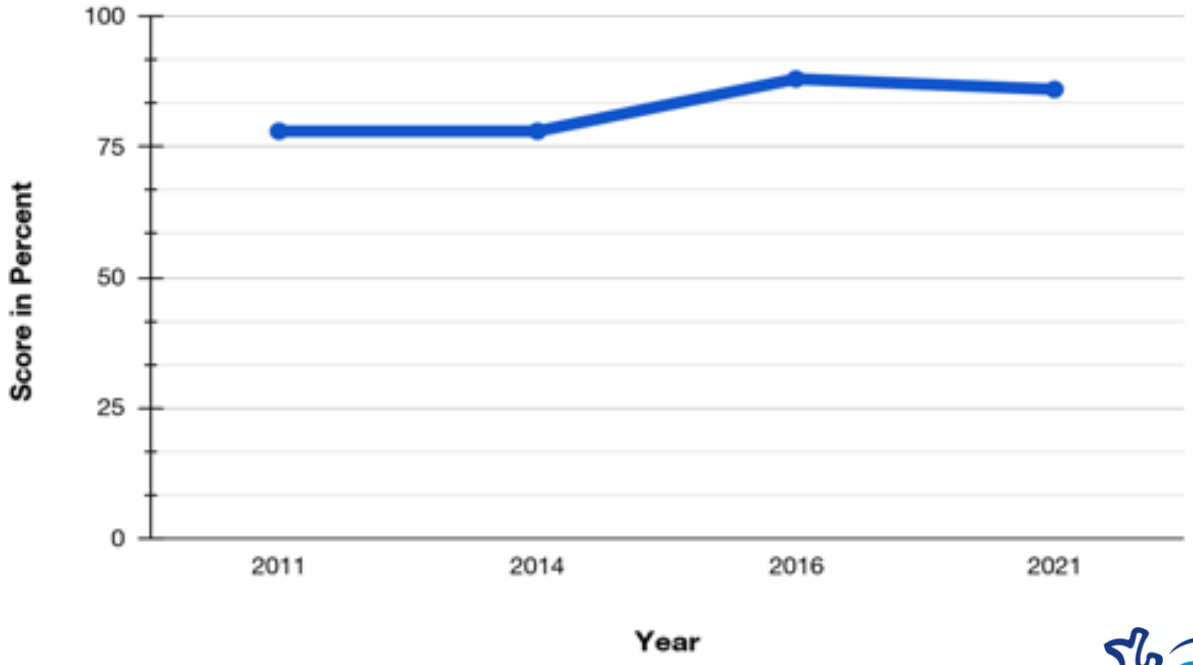
In this indicator we measure:

- 5 a. Effective, standardized, monitoring of coral reef health and management of that information
- 5b. Assessment of coral reef economic values
- 5c. Understandable information on reef condition, threats and values, available to the general public and stakeholders
- 5.d Development of interdisciplinary partnerships that combine social and ecological research

Mario Chow

Theme 5 - Research, Education and Awareness

MAR Score Over Time



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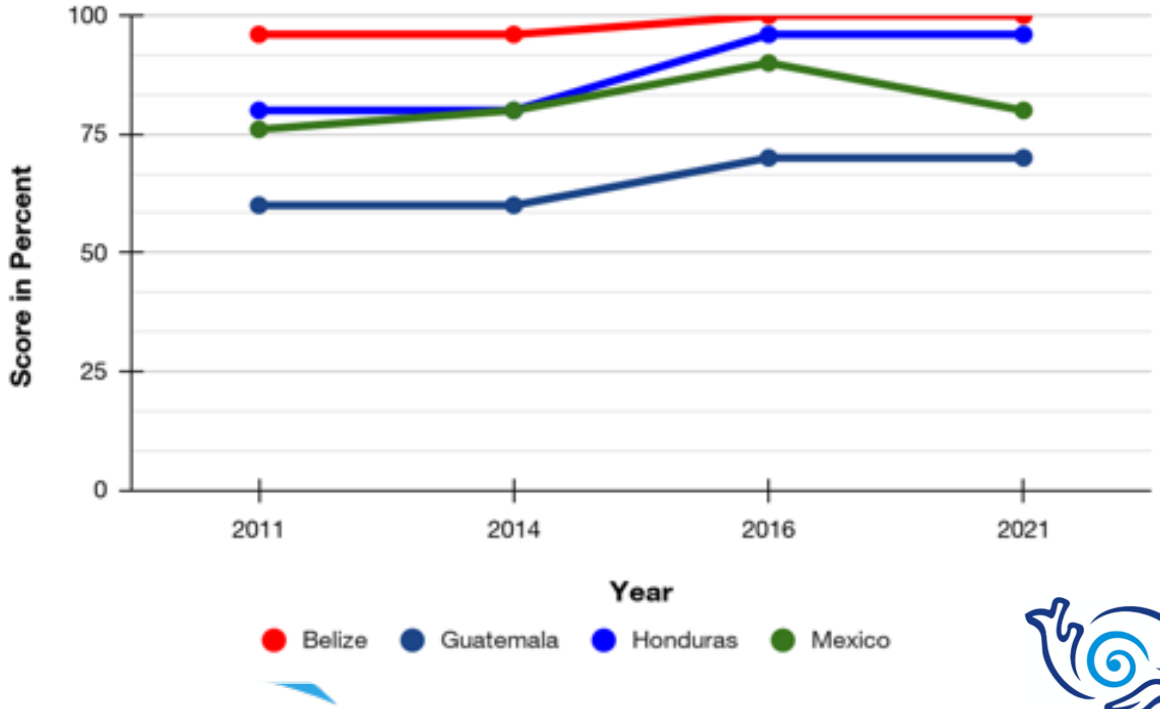
Theme 5 - Research, Education and Awareness

Scores Per Country Over Time



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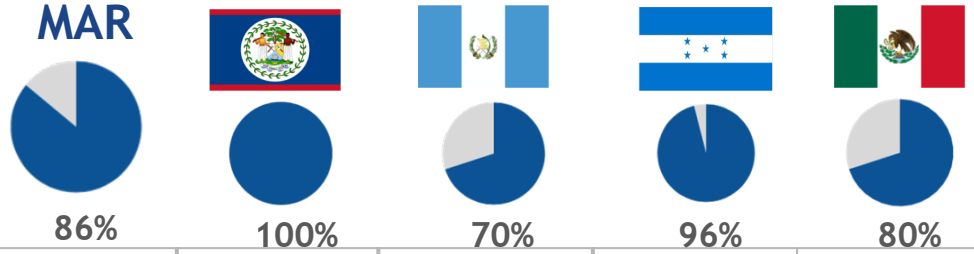
Theme 5 - Research, Education and Awareness

Theme 5 average score

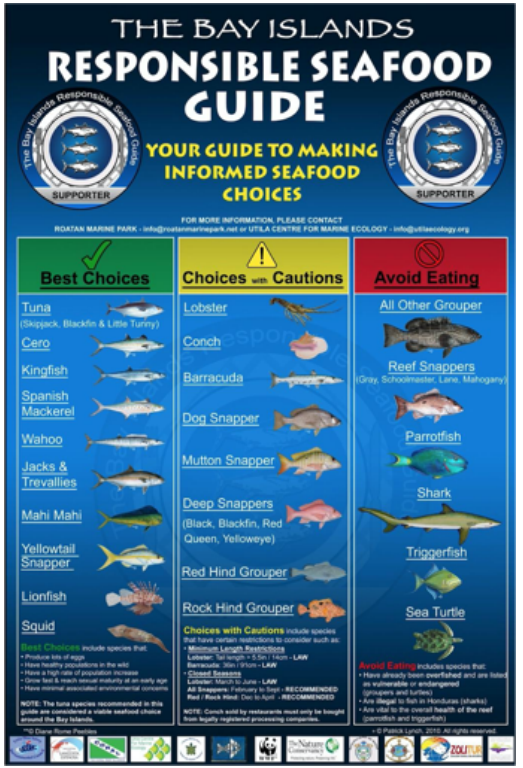


	MAR	Belize	Guatemala	Honduras	Mexico
5 a. Effective, standardized, monitoring of coral reef health and management of that information	100	100	100	100	100
5 b. Assessment of coral reef economic values	65	100	20	80	60
5 c. Understandable information on reef condition, threats and values, available to the general public and stakeholders	100	100	100	100	100
5 d. Development of interdisciplinary partnerships that combine social and ecological research	80	100	60	100	60

Theme 6 - Sustainability in the Private Sector

Partnerships between the private sector and governments or NGOs can facilitate information exchange, training in best environmental practices, and collaborative efforts to find solutions to issues of shared concern. Such partnerships can also be beneficial for tourism and marine recreation providers, as well as the seafood industry, by increasing their attractiveness to tourists, operators, restaurants and consumers who prefer environmentally responsible options.

- 6a. Voluntary eco-standards program for marine recreation providers
- 6b. Participation of coastal hotels in eco-certification schemes
- 6c. Adoption of seafood eco-labeling programs
- 6d. Government incentives for conservation and sustainable businesses
- 6e. Private sector assistance to MPAs



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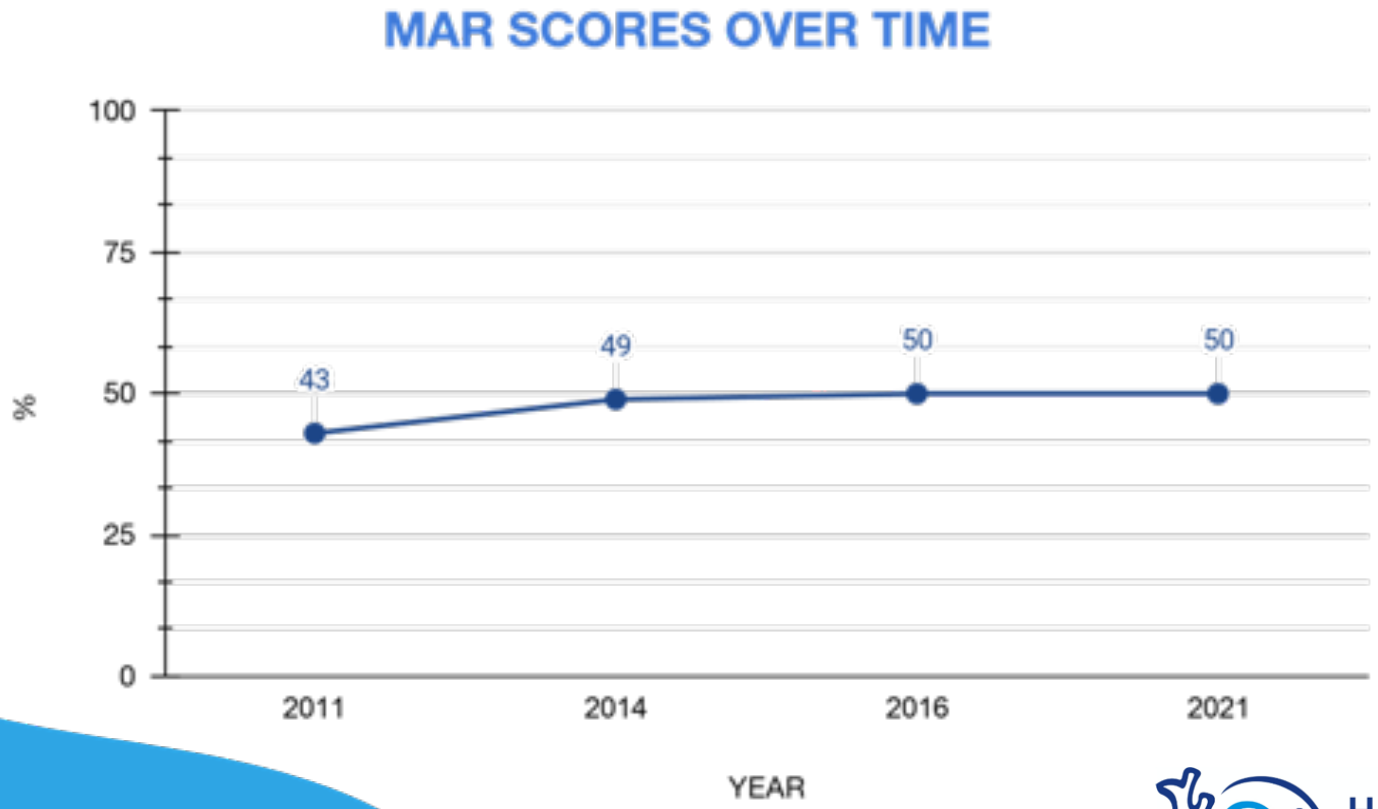
Theme 6 - Sustainability in the Private Sector



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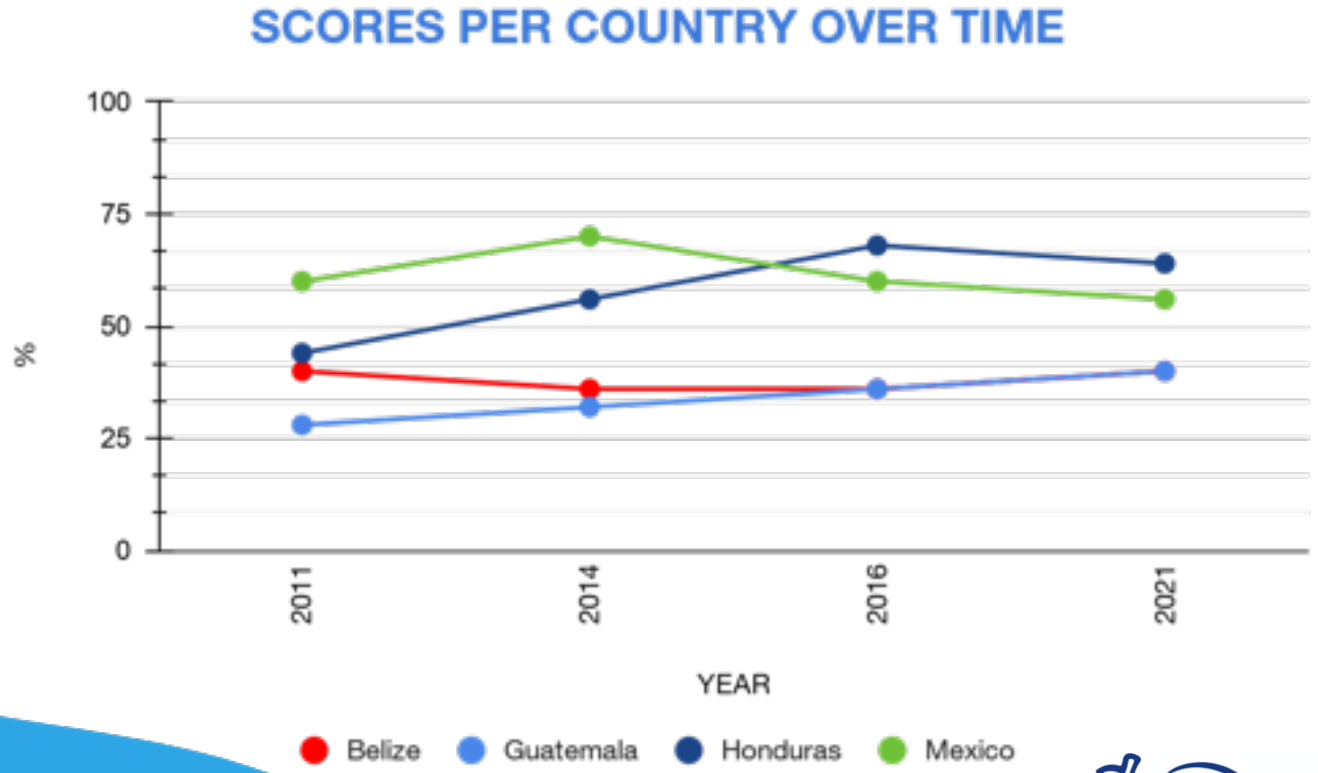
Theme 6 - Sustainability in the Private Sector



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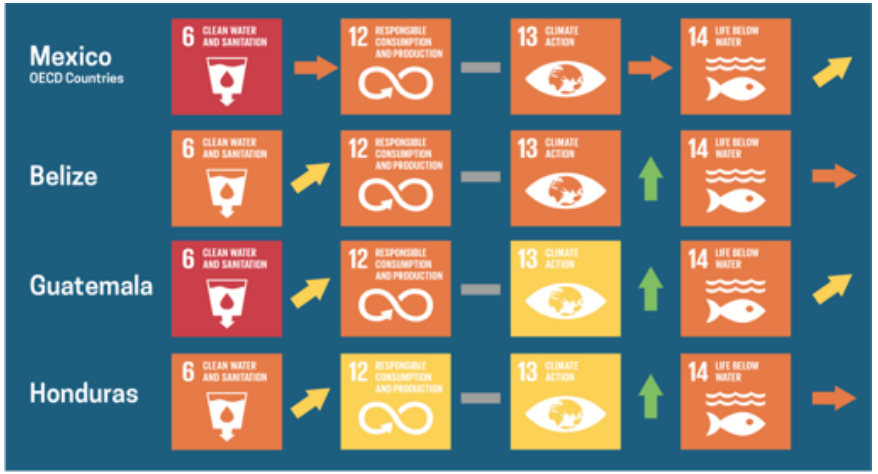
Theme 6 - Sustainability in the Private Sector

Theme 6 Average Score	MAR	Belize	Guatemala	Honduras	Mexico
	50%	40%	40%	64%	56%
6a. Develop a voluntary eco-standards program for marine recreation providers	45	40	40	60	40
6b. Participation of hotels in eco-certification schemes	45	40	40	60	40
6c. Adoption of seafood eco labeling programs	50	40	20	60	80
6d. Level of incentives the government provides for conservation and sustainable businesses	65	20	60	100	80
6e. Provision of financial, staff or technical assistance to coastal protected areas by the private sector	45	60	40	40	40

Theme 7 - Global Issues

A global approach to protect coral reef ecosystems is essential to achieve meaningful action.
We must work internationally, drawing on existing international frameworks and conventions, and also sharing knowledge, experience, and ideas to achieve solutions to global-scale threats such as climate change.

7a: Mapping resilient reefs
7b: Engagement in international treaties
7c: Incentives programs for carbon sequestration



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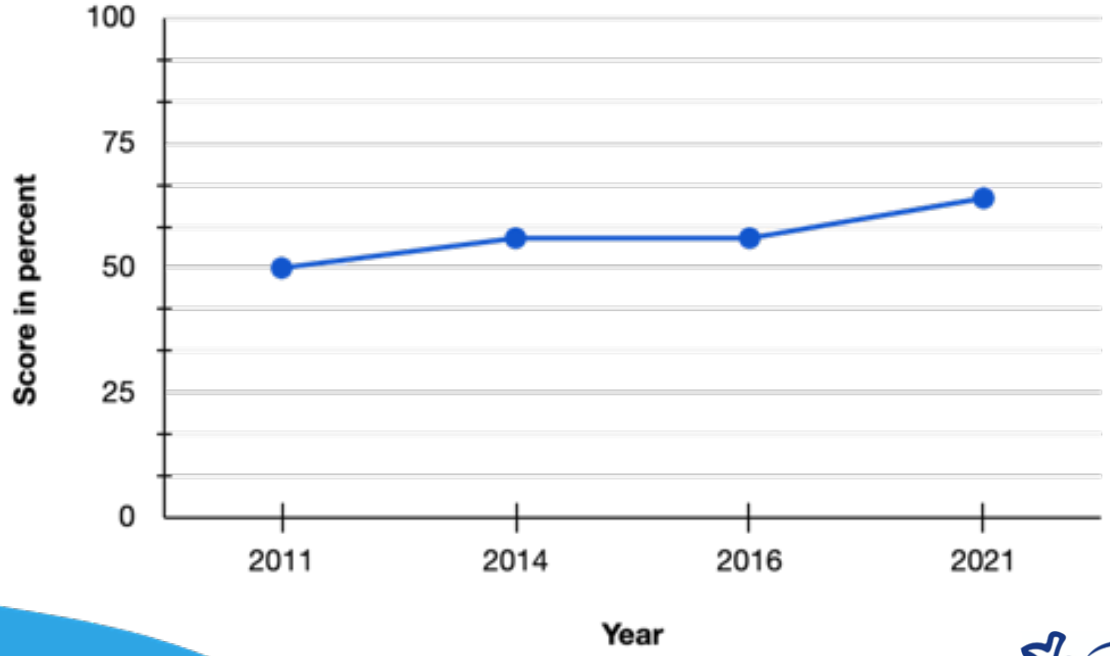
Theme 7 - Global Issues

MAR Score Over Time



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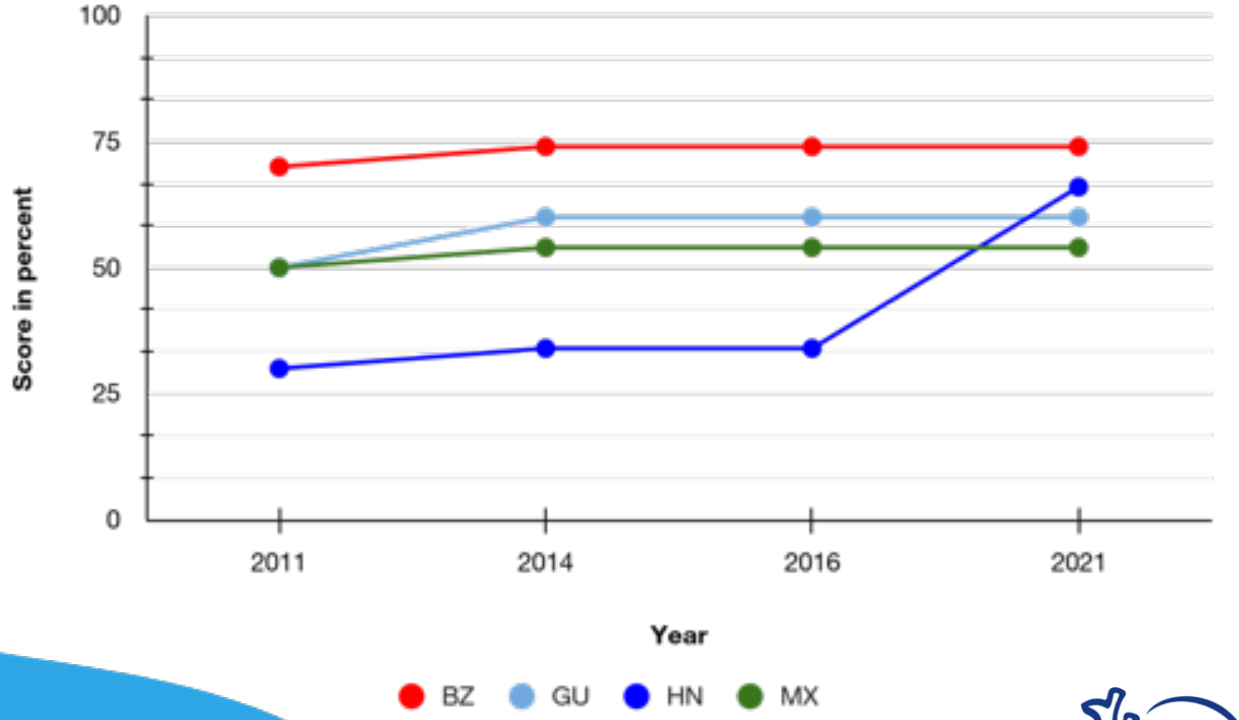
Theme 7 - Global Issues

Countries Score Over Time



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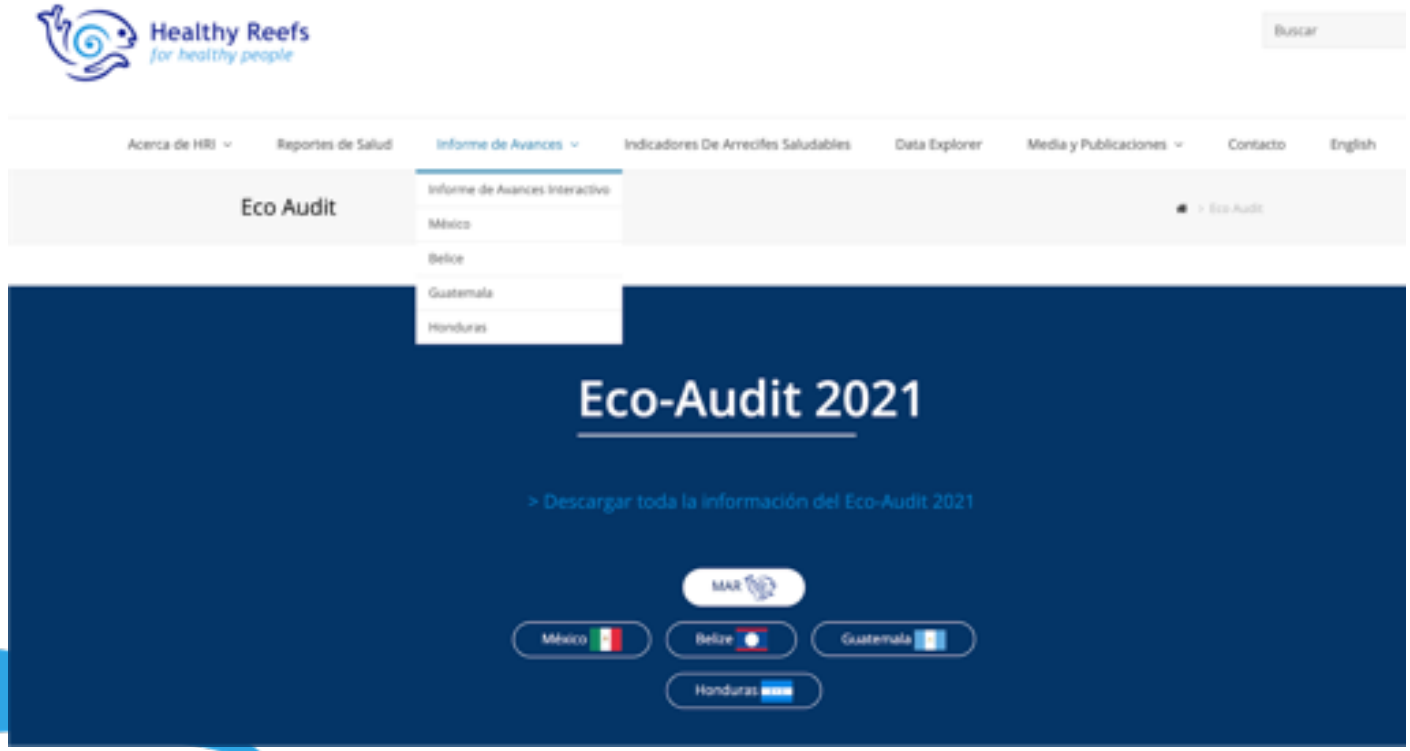
Theme 7 - Global Issues

Theme 7 average score

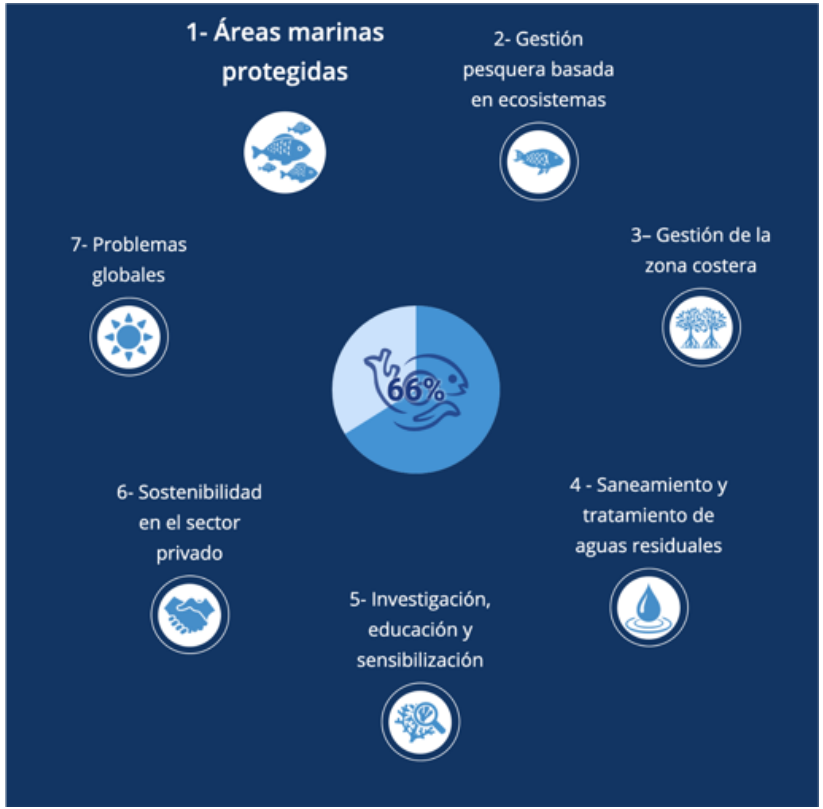
	MAR	Belize	Guatemala	Honduras	Mexico
	64%	74%	60%	66%	54%
7a. Research to identify and map reefs most likely to be resilient to warming seas / coral bleaching	40	40	40	40	40
7b. Engagement in international/regional treaties that support conservation	80	100	60	100	60
7c. Develop incentives for carbon sequestration programs.	70	80	80	60	60

Interactive Eco-Audit 2021

www.healthyreefs.org
www.arrecifessaludables.org



Interactive Eco-Audit 2021



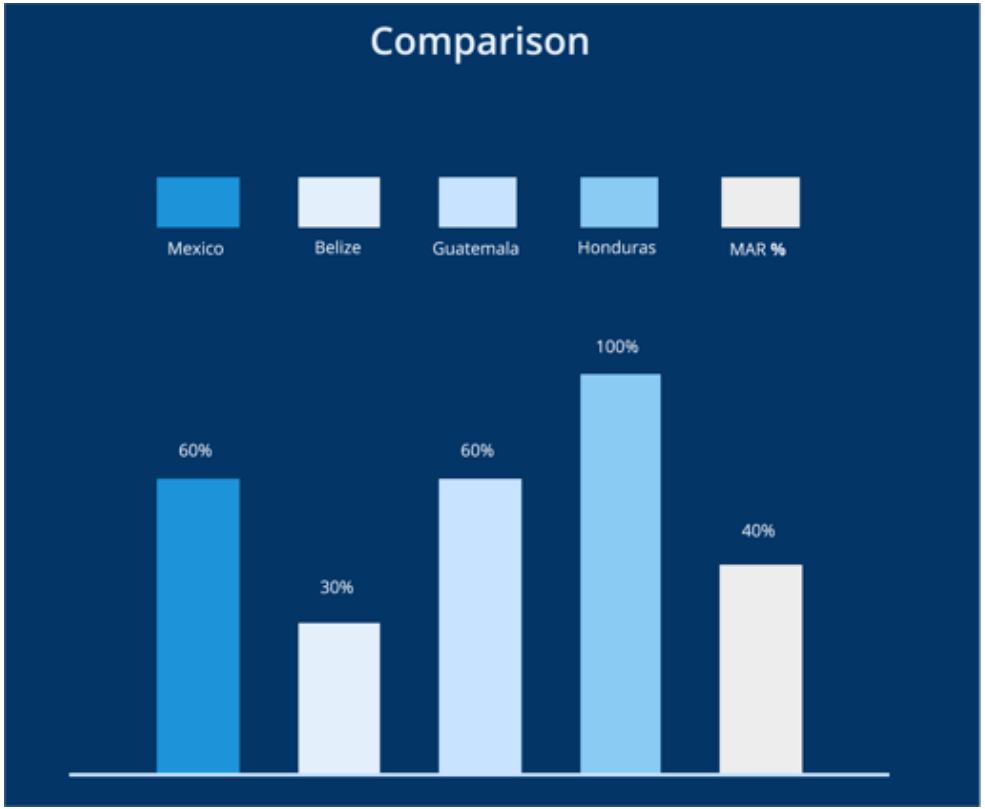
Interactive Eco-Audit 2021

1- Áreas marinas protegidas

1a. Área marítima protegida (porcentaje del mar territorial de un país incluido en las AMP publicadas)

1b. Área marítima totalmente protegida (porcentaje del mar territorial de un país incluido en zonas de reabastecimiento totalmente protegidas)

Interactive Eco-Audit 2021



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