



Caribbean Science  
Symposium on  
Water



# Sanitation Best Management Practices for Caribbean coral reefs.

a water secure world

Caribbean Science Symposium on Water  
March 21<sup>st</sup> – 22<sup>nd</sup>, 2023

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# On Behalf Of:



**Healthy Reefs**  
*for healthy people*



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# Introduction



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## Best Management Practices (BMPs):

On the ground solutions to pollution problems from many sources and sectors

- Provide prevention measures
- Defined and explicit
- Based on research/experience

## Sanitation Best Management Practices (SBMPs):

- Proven, locally tailored, measures to target water pollution problems



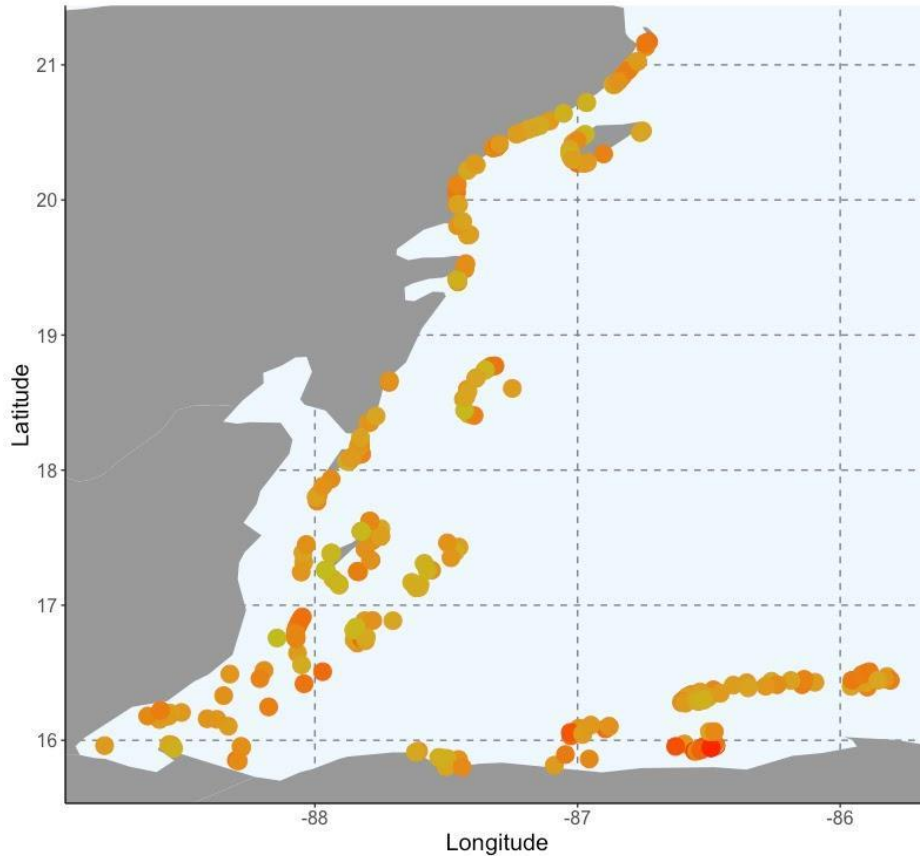
Conservation and Innovation: Changing the Regional Water Paradigm



# Background

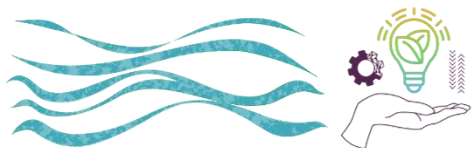


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- Waterborne disease risk to human health
- Tourism adversely affected by disease risk
- Hotspot in coral reef disease
- Fleshy macroalgae has doubled in the past decade - < growth + recruitment

HRI, 2020; Tracy et al., 2019; Abdulkadir et al., 2019;  
Burge et al., 2013; Weil et al. 2006;



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# Research question



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Can human and coral reef health in the region be improved through Sanitation Best Management Practices (SBMPs)?



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# West End, Roatan, Honduras

Case study Caribbean reef SBMP 15 years



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# Methodology



## Governance

- Long term process; 2005
- Systemize local knowledge; interviews and focus groups
- On the ground work; trust building

## Reef Health

- HRI + partners collecting data since 2005
- Numerous variables
- 25 sites in Roatan; 3 near sewage treatment plant



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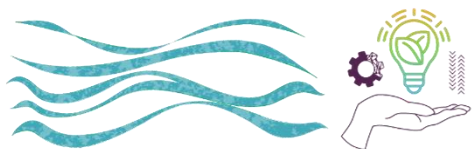


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## Water quality monitoring

- Lead by the Bay Islands Conservation Association
- Started in 2013
- Physical, chemical and biological parameters
- Scaled up



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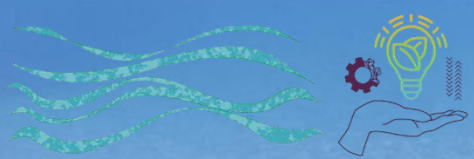
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# Results



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# Results - Governance

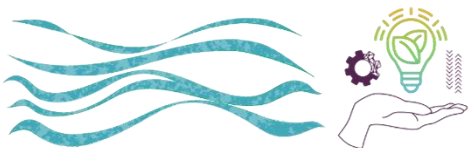


## Story of Wastewater Management and Sanitation Best Practices in West End

**2005:** Dissatisfied community felt the need for a change.

**2005 to 2006:** Establishment of Polo's Waterboard

**2023:** Strengthening of Polo's Waterboard and improvement of STP



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# Results - Governance



- 1 2006:** Polo's established with Board and 2 Permanent Employees.
- 2 2009:** Legal Status acquired. Bought land with water wells and built tanks.
- 3 2010:** Micrometers are installed.
- 4 2011:** Construction of STP and sewage system.
- 5 2012:** Customer Service Office opens to Public. Waste water treatment begins.
- 6 2014:** Revision of Fees with ERSAPS.

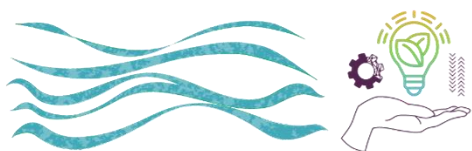
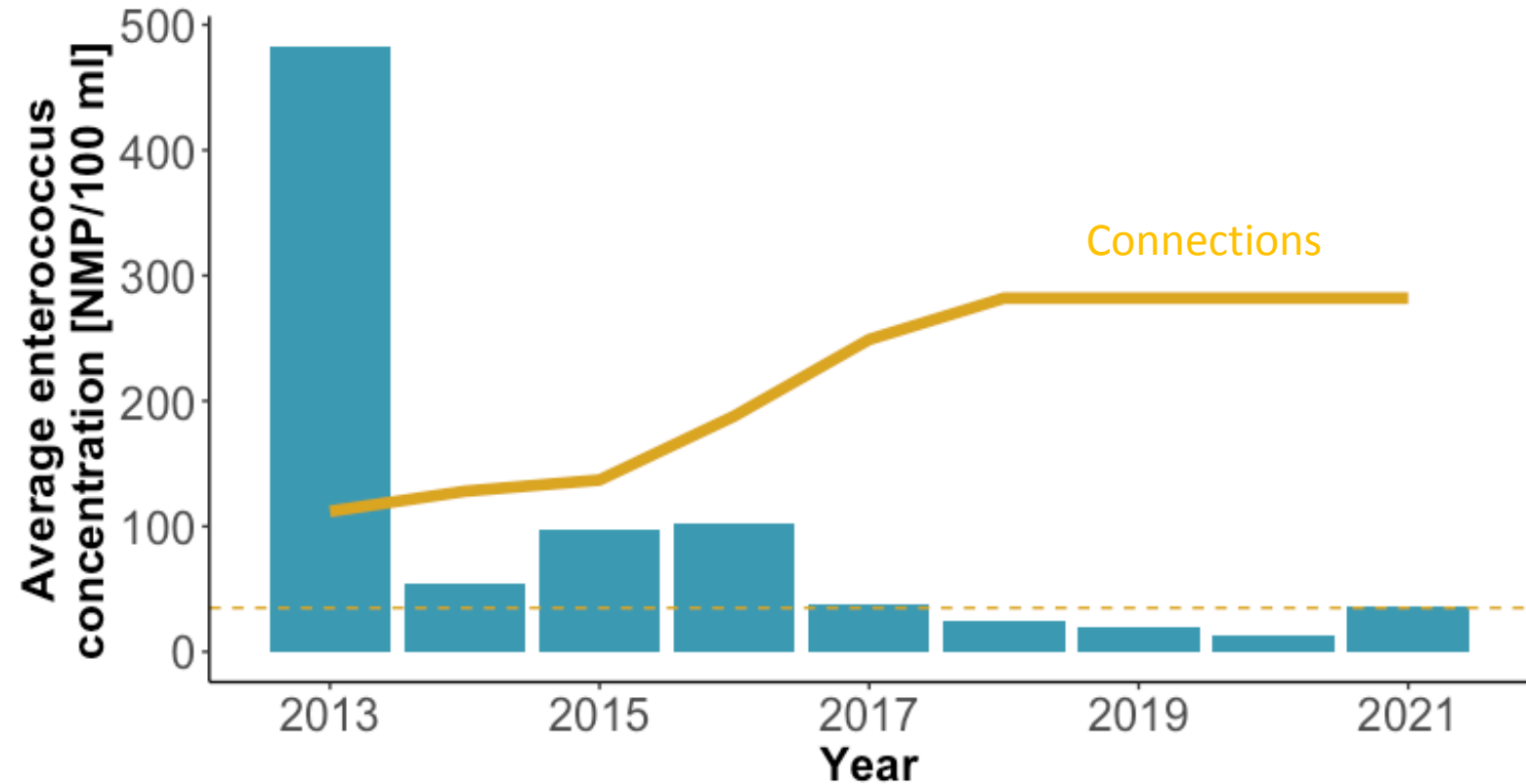
- 7 2015:** Begin writing funding proposals.
- 8 2016:** STP improved. New connections begin.
- 9 2017:** More connections. Solar energy.
- 10 2018:** Water Quality Monitoring with BICA. Uniting Water Boards. Municipal ordinance.
- 11 2019 to 2020:** Revision of Management Model and STP. COVID 19 delays.
- 12 2021 to 2023:** Improvement of Infrastructure. Outreach.



# Results – Human health



- Constant reduction of pathogens in sites with SBMPs
- Meet Cartagena Convention limit by 2017
- Blue flag beach award



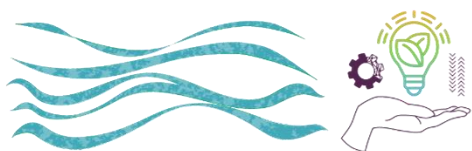
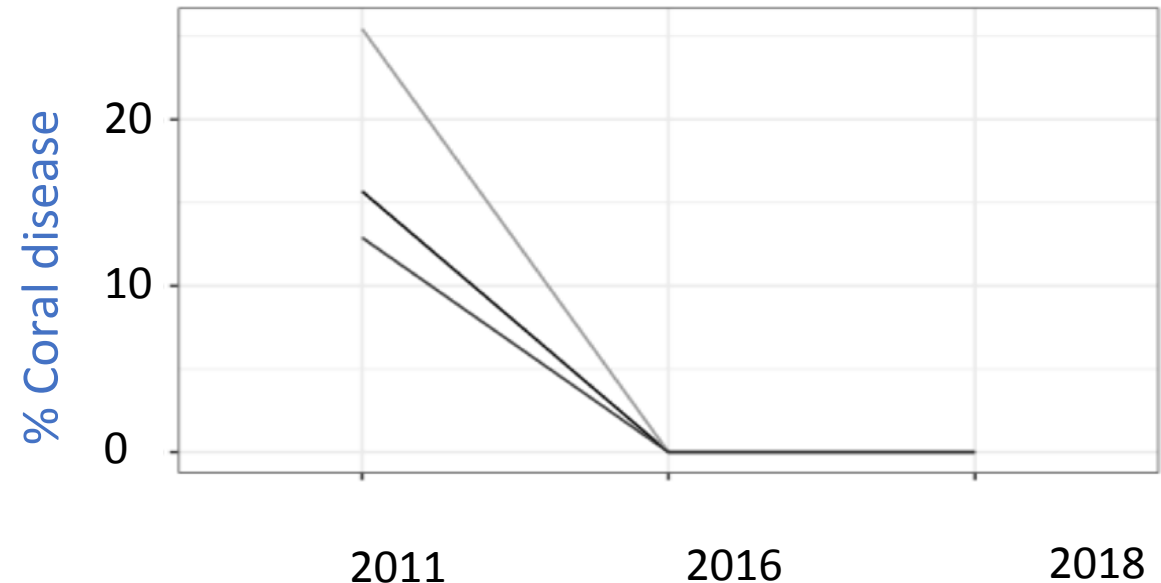
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# Results – Reef health



- Connections begin in 2013
- By 2016 there is 0% disease in sites with SBMP
- Adaptive management towards SCTLTD beginning in 2020



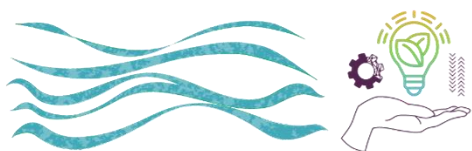
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# Recommendations

- Wastewater treatment plants work and are a cornerstone to having SBMPs
- Local stakeholders must be included in management models (transparency)
- SBMPs take time to implement and require trust
- SBMP are an adaptive and iterative process



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A blue flag with a logo and text "Bandera Azul Ecológica Honduras / Playas" flying against a blue sky with palm trees. The logo features a sun rising over waves. The flag is attached to a white pole. The background is filled with lush green palm fronds.

Sanitation best  
management  
practices are key  
for human and  
reef health!





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# Questions?



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