

Coral Reefs and Land Based Sources of Pollution:

The Need for Interagency and Local Collaborations



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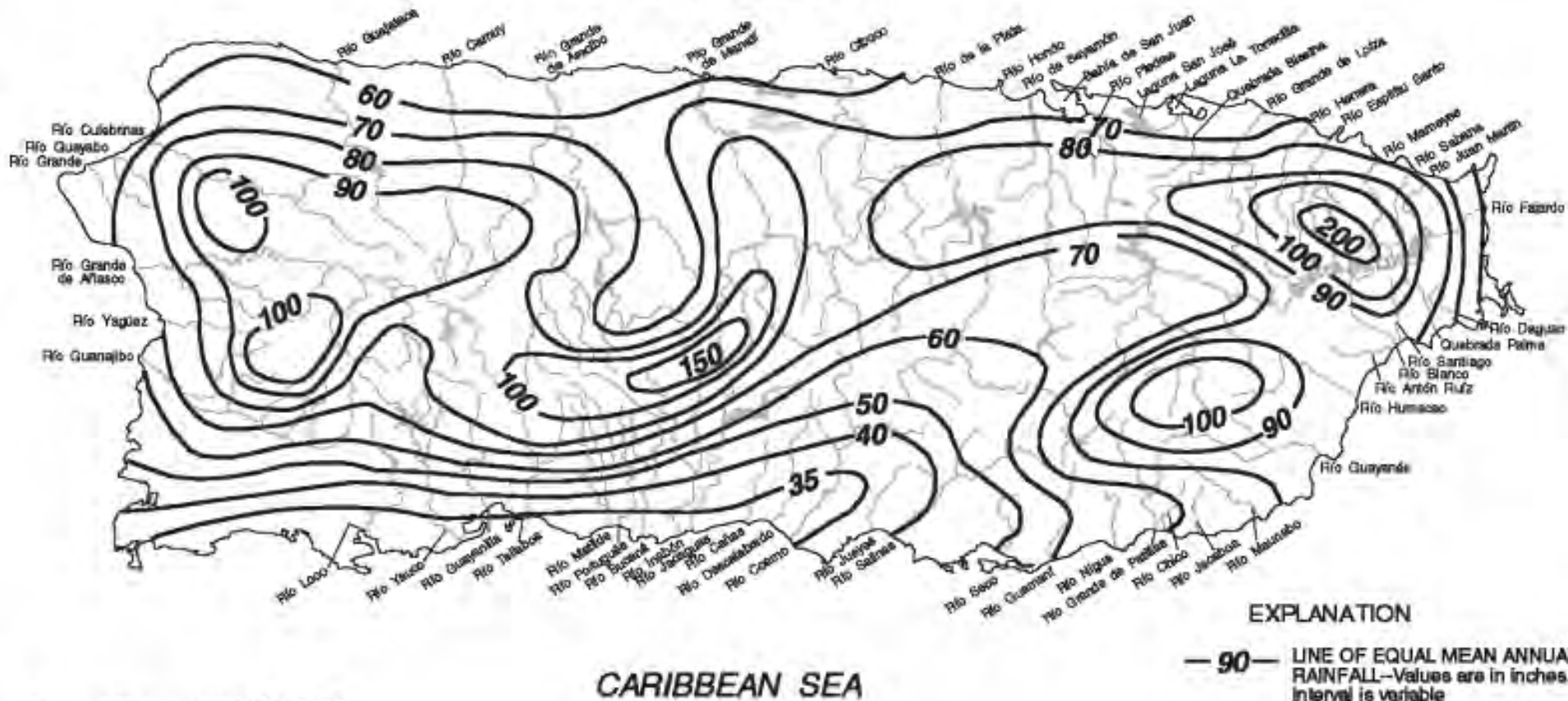


In this talk...

1. Unique conditions
2. Diverse stressors = diverse partnerships
3. Local knowledge and coordination

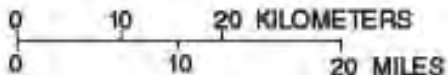


ATLANTIC OCEAN



EXPLANATION

— 90 — LINE OF EQUAL MEAN ANNUAL RAINFALL—Values are in inches, interval is variable



Loss of Historic Wetlands/Forest



Short Watersheds



Image © 2009 DigitalGlobe
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image U.S. Geological Survey

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**Solutions are local and
have to be sustained**



Common Stressors: Sediment from Bare soils

Solutions:

Source: Agricultural Clearing





Exposed Soil Partners

- NRCS
- FWS- Partners in Wildlife
- Municipality of Yauco
- NOAA RC
- EQB –Envir Quality Board
- EPA
- Hydroseeding contractor
- Guánica Restoration Coordinator
- University of Puerto Rico
- Cafesencia (Local NGO)
- Protectores de Cuencas (Local NGO)
- Local Farmers/landowners

Wastewater

Source: Wastewater



Solution: Improved treatment

Treatment wetlands



CONSTRUCTED WETLAND
SUBSURFACE FLOW

2
SECONDARY TREATMENT
BOD & TSS REDUCTION, NITRIFICATION &
DENITRIFICATION, PATHOGEN REMOVAL

Wastew



Guanica Wetland Restoration and Re-creation



Treatment wetlands partners

PRASA- Sewerage Authority
NFWF
Municipality of Guánica
EQB – Envir Quality Board
EPA
NOAA
Technical Experts



Enforcement/ Standards



Stormwater Runoff

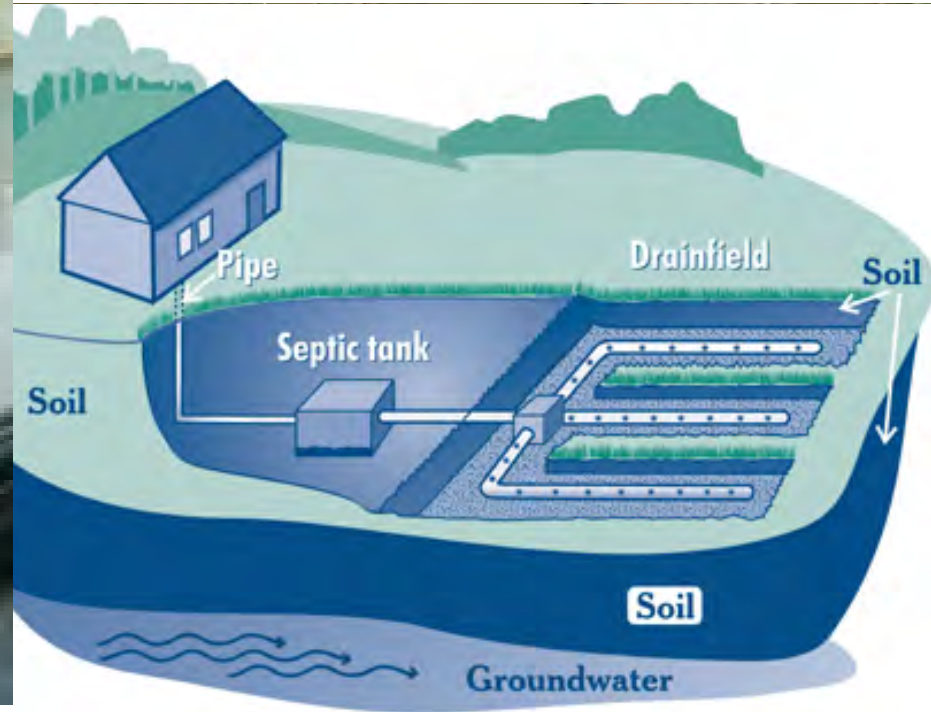
Source:



Solutions:



Infrastructure Issues



Infrastructure Problems





Sec La Pieza

Image U.S. Geological Survey

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Image Date: 10/31/2006 1993

17°57'46.50" N 66°55'30.15" W elev 0 ft

Eye alt 2062 ft



LBS is an actionable approach to minimize climate change impacts to coral

- ***“quantitative linkage between terrestrially-sourced dissolved inorganic nitrogen (DIN) loading and the upper thermal bleaching thresholds of inshore reefs”***
- ***“concrete evidence for the belief that improved watershed management/nitrogen reduction will increase the survival prospects of coral reefs to global climate change”***

