

# Ecosystem Services & Valuation: Examples from Belize

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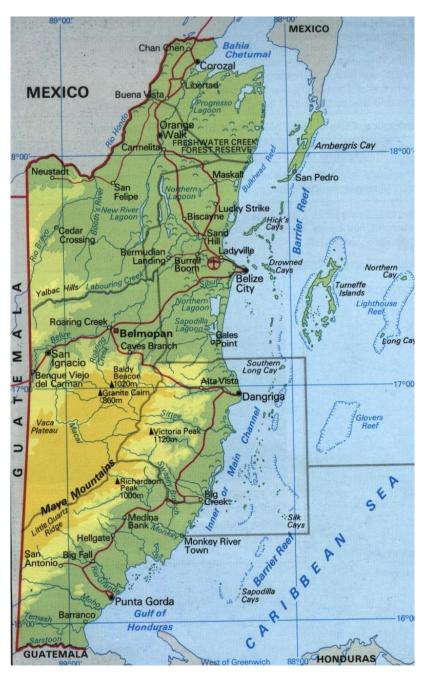


North Pacific



SURINAN





#### FACTS

- The national territory: 46,620 km <sup>2</sup> (18, 000 square miles).
  - Mainland: 8,867 sq. miles
  - Lagoons: 1,540 km<sup>2</sup> (595 sq. miles)
  - Offshore territorial limit: 20km (12 nautical miles)
  - approximately 1,056 cayes
  - Length of the coastline: approximately 280 km.
- Economy: Agriculture, Fishing, Tourism, Service

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Population 331,900 (2013)



#### **Coastal Capital: Belize**

- Coastal Capital: Belize The Economic Contribution of Belize's Coral Reefs & Mangroves
- Published 2009
- World Resources Institute
- WWF- Central America
- Funded by: Oak Foundation, Netherlands Ministry of Foreign Affairs, SwedBio, Campbell Foundation, MacArthur Foundation
- Developed through a consultative process (International NGOS, Local NGOs, MPAs Managers, Government Agencies - Fisheries Dept., Forest Dept. & Belize Tourism Board)
- Assigns Economic Value to ecosystems goods & services
- Marine Protected Areas
- Details on methodology: <u>www.wri.org/project/valuation-Caribbean-reefs</u>





- Value of reef, mangrove-related fisheries, tourism, shoreline protection services - estimated at USD \$395-559 million per year (2007)
- Mangroves- estimated USD \$174-249 million
- Tourism:
  - Accommodation, reef expenses, etc.: USD\$150 -196 Million
  - sport fishing USD\$30-37 Million,
  - cruise industry -USD\$5.3 -6.4 Million
- Fisheries: USD \$14 Million (commercial fisheries)
- Shoreline Protection:
  - Reef protection : USD\$120 180 million per year
  - Coastal Mangrove Protection US\$111- 167 Million per year
- Belize GDP (2007) USD \$1.3 billion
- Limitation: quality & availability of data (poor/scare)





### **Potential Uses**

- Aids in helping policy-makers better understand the economic benefits
- \$ Value identifying winners & losers of current practices
- Publicizes the benefits for conservation purposes
- Aid in providing potential figures for compensation of loss







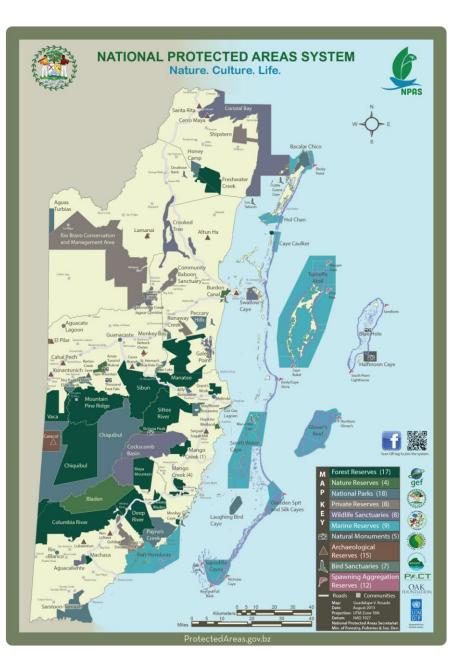
- Forest Conservation Agreement Only Used for Forest Areas
- Signed 28 September 2001
- Parties:
  - Government of Belize (GOB)
  - Government of United States of America (GUSA)
  - The Nature Conservancy (TNC)
  - Toledo Institute for Development and the Environment (TIDE)
  - Programme for Belize (PfB)
  - Belize Audubon Society (BAS)
  - Protected Areas Conservation Trust (PACT) PACT Foundation (Belize Nature Conservation Foundation)











**Protected Areas Listing** 

A. Forest Reserves	D. Private Reserves	H. Bird
01 Fresh Water Creek	01 Shipstern Nature	Sanctuarie
02 Caye Caulker	02 Rio Bravo	01 Doubloon I
03 Manatee	Conservation and	02 Little Guan
04 Grants Work	Managment Area	03 Los Salones
05 Sibun	03 Community	04 Un-Named
06 Sittee River	Baboon Sanctuary	05 Bird Caye
07 Mountain Pine Ridge	04 Aguacate Lagoon	06 Man of War
08 Vaca	05 Monkey Bay	07 Monkey Ca
09 Chiquibul	06 Runaway Creek	I. Spawning
10 Mango Creek (1)	07 Golden Stream	Aggregatio
11 Maya Mountain	08 Block 127 (TIDE)	Reserves
11 Maya Mountain	E. Wildlife	01 Rocky Point
12 Mango Creek (4)	Sanctuaries	02 Maugre Cay
13 Swasey-Bladen	01 Corozal Bay	03 Dog Flea
14 Monkey Caye	02 Crooked Tree	04 Sandbore
15 Deep River	03 Spanish Creek	05 Caye Bokel
16 Columbia River	04 Labouring Creek	06 Emily/Caye
17 Machaca	Jaguar Corridor	07 South Poin
B. Nature Reserve	05 Swallow Caye	Lighthouse
01 Burdon Canal	06 Gales Point	08 Northern G
02 Tapir Mountain	07 Cockscomb Basin	09 Gladden Sp
03 Hopkins Wetland	08 Aguacaliente	10 Seal Caye
04 Bladen	F. Marine Reserves	11 Nicholas Ca
C. National Parks	01 Bacalar Chico	12 Rise and Fa
01 Bacalar Chico	02 Hol Chan	J. Archaeolog
02 Honey Camp	03 Caye Caulker	Reserves
03 Aguas Turbias	04 Turneffe Atoll	01 Santa Rita
04 Peccary Hills	05 South Water Caye	02 Cerro Maya
05 Monkey Bay	06 Glover's Reef	03 Lamanai
06 Guanacaste	07 Gladden Spit	04 Altun Ha
07 Noj Kaax H'Men	and Silk Cayes	05 Yarborough
Elijio Panti	08 Port Honduras	Cemetery
08 St. Herman's	09 Sapodilla Cayes	06 El Pilar
Blue Hole	G. Natural	07 Nohoch Ch
09 Five Blues Lake	Monuments	08 Caves Bran
10 Billy Barquedier	01 Actun Tunichil	09 Cahal Pech
11 Melinda	Muknal	10 Xunantunio
12 Gra Gra Lagoon	02 Thousand Foot Falls	11 Barton Cree
13 Mayflower Bocawina	03 Victoria Peak	12 Serpon Sug
14 Chiquibul	04 Blue Hole	13 Caracol
15 Laughing Bird Caye	05 Halfmoon Caye	14 Nim Li Puni
16 Payne's Creek		15 Lubaantun
17 Rio Blanco		
18 Sarstoon-Temash	Protected Areas.gov.bz	

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- USD \$9.7 Million Debt Swap
- TNC USD \$1.0 Million Contribution
- Re-direction of external debt service
- Two Components of the Agreement
  - 1) 2001- Re-amortized over a 10 Year period
    - GOB completed payments in 2011
    - Land Management Accounts Authorized Purposes
  - 2) Establishment of Endowment in Perpetuity = USD \$1 Million (each)
    - Commence the year of final payment
    - Management by an oversight committee





- TIDE: received app. 20,000 acres (8.09 hectares)
  - GOB transferred land title (free) for 11,000 acres
  - TNC -contributed more land to compliment Maya Mountain Marine Corridor
- BAS Conservation Funds for Protected Areas Management (Forest Areas Only)
- > PfB Conservation Funds for in Rio Bravo Conservation & Management Area
- PACT PACT Foundation (Belize Nature Conservation Foundation) Funds to grant awards other local conservation NGOs (PAs Managers, CBOs)
- Authorized Uses:
  - i. Establishment, protection, restoration, maintenance of Pas
  - ii. Development of scientifically sound management practices
  - iii. Training programs to increase scientific, technical and managerial capacity
  - iv. Restoration, protection or sustainable use of diverse animal & plant species
  - v. Research & identification of medicinal uses of Tropical Forest Plants





## **Endowment Fund**

- USD \$ 1.0 Million (each) in Perpetuity:
  - ► 30 % Administrative
  - 70% Institutional/ Operational (Infrastructure, Patrols, education outreach, etc.)
- Oversight Committee -
  - Forest Department
  - Ministry of Finance Budget Management
  - PFB
  - TIDE
  - TNC
  - US Embassy
- Ensure:
  - a) Investment of funds is not mismanaged,
  - b) Review yearly financial and technical reports









- Protected Areas Conservation Trust
- Established: 1995
- PACT Act
  - Associated Legislation: Forest Act, National Parks System Act, Fisheries Ac, Ancient Monuments & Antiquities Ordinance, National Lands Act, Land Utilization Act
- Departure Fee: BZD\$7.50
- Cruise Ship Fee %20
- Donations & Grants
- Conservation & environmental sound management development of PAs and our cultural heritage
- Protected Areas Management- grants process
- PACT Board MFFSD (GOB, NGO, Private Sector)
- Financial Report









- Guide to Belize Debt Swap Party Obligations- 28 September 2001
- Suzanna Egolf. 2001. "The Belize Debt-for-Nature Swap. Mobilizing Funding for Biodiversity Conservation: A User-Friendly Training Guide." 5pp. Available online at <u>https://www.cbd.int/doc/nbsap/finance/CaseStudy-</u> DebtforNature\_Belize\_Nov2001.pdf
- Cooper, E., L. Burke, and N. Bood. 2009. "Coastal Capital: Belize. The Economic Contribution of Belize's Coral Reefs and Mangroves." WRI Working Paper. World Resources Institute, Washington DC. 53pp. Available online at <u>http://www.wri.org/publications</u>
- A. Rosental, K. Arkema, G. Verutes, N. Bood, D. Cantor, M. Fish, R. Griffin, and M. Panuncio. "Identification and Valuation of Adaptation Options in Coastal-Marine Ecosystems: Test Case from Placencia, Belize." World Wildlife Fund.
- P.A.C.T. online at <u>http://www.pactbelize.org/Home.aspx</u>
- Personal Communication:
  - Alex Martinez Conservation Officer (Belize) The Nature Conservation
  - Darrel Audinette Project Officer- P.A.C.T.
  - Nadia Bood Head of WWF Office Belize World Wildlife Fund





#### Thank You

