



Ecosystem Services & Valuation: Examples from Belize

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Where is Belize?



Belize Example





FACTS

- ▶ The national territory: 46,620 km² (18, 000 square miles).
 - ▶ Mainland: 8,867 sq. miles
 - ▶ Lagoons: 1,540 km² (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

- ▶ 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: www.wri.org/project/valuation-Caribbean-reefs





Findings

- ▶ 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



Belize Example



Debt for Nature Swap

- ▶ 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)



Belize Example





Belize Example

Protected Areas Listing

A. Forest Reserves

- 01 Fresh Water Creek
- 02 Caye Caulker
- 03 Manatee
- 04 Grants Work
- 05 Sibun
- 06 Sittée River
- 07 Mountain Pine Ridge
- 08 Vaca
- 09 Chiquibul
- 10 Mango Creek (1)
- 11 Maya Mountain
- 12 Mango Creek (4)
- 13 Swasey-Bladen
- 14 Monkey Caye
- 15 Deep River
- 16 Columbia River
- 17 Machaca

B. Nature Reserve

- 01 Burdon Canal
- 02 Tapir Mountain
- 03 Hopkins Wetland
- 04 Bladen

C. National Parks

- 01 Bacalar Chico
- 02 Honey Camp
- 03 Aguas Turbias
- 04 Peccary Hills
- 05 Monkey Bay
- 06 Guanacaste
- 07 Noj Kaax H'Men
- 08 St. Herman's Blue Hole
- 09 Five Blues Lake
- 10 Billy Barquedier
- 11 Melinda
- 12 Gra Gra Lagoon
- 13 Mayflower Bocawina
- 14 Chiquibul
- 15 Laughing Bird Caye
- 16 Payne's Creek
- 17 Rio Blanco
- 18 Sarstoon-Temash

D. Private Reserves

- 01 Shipstern Nature Conservation and Management Area
- 03 Community Baboon Sanctuary
- 04 Aguacate Lagoon
- 05 Monkey Bay
- 06 Runaway Creek
- 07 Golden Stream
- 08 Block 127 (TIDE)

E. Wildlife Sanctuaries

- 01 Corozal Bay
- 02 Crooked Tree
- 03 Spanish Creek
- 04 Labouring Creek Jaguar Corridor
- 05 Swallow Caye
- 06 Gales Point
- 07 Cockscomb Basin
- 08 Aguacaliente

F. Marine Reserves

- 01 Bacalar Chico
- 02 Hol Chan
- 03 Caye Caulker
- 04 Turneffe Atoll
- 05 South Water Caye
- 06 Glover's Reef
- 07 Gladden Spit and Silk Cayes
- 08 Port Honduras
- 09 Sapodilla Cayes

G. Natural Monuments

- 01 Actun Tunichil Muknal
- 02 Thousand Foot Falls
- 03 Victoria Peak
- 04 Blue Hole
- 05 Halfmoon Caye

H. Bird Sanctuaries

- 01 Doubloon Bank
- 02 Little Guana Caye
- 03 Los Salones
- 04 Un-Named
- 05 Bird Caye
- 06 Man of War Caye
- 07 Monkey Cay

I. Spawning Aggregation Reserves

- 01 Rocky Point
- 02 Maugre Caye
- 03 Dog Flea
- 04 Sandbore
- 05 Caye Bokel
- 06 Emily/Caye Glory
- 07 South Point Lighthouse
- 08 Northern Glover's
- 09 Gladden Spit
- 10 Seal Caye
- 11 Nicholas Caye
- 12 Rise and Fall Bank

J. Archaeological Reserves

- 01 Santa Rita
- 02 Cerro Maya
- 03 Lamanai
- 04 Altun Ha
- 05 Yarborough Cemetery
- 06 El Pilar
- 07 Nohoch Che'en
- 08 Caves Branch
- 09 Cahal Pech
- 10 Xunantunich
- 11 Barton Creek Cave
- 12 Serpon Sugar Mill
- 13 Caracol
- 14 Nim Li Punit
- 15 Lubaantun

ProtectedAreas.gov.bz





Brief Description

- ▶ 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





Benefits - re-amortized loan

- ▶ 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





P.A.C.T

- ▶ Protected Areas Conservation Trust
- ▶ Established: 1995
- ▶ PACT Act
 - ▶ Associated Legislation: Forest Act, National Parks System Act, Fisheries Act, 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



Belize Example





Reference

- ▶ 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 https://www.cbd.int/doc/nbsap/finance/CaseStudy-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 <http://www.wri.org/publications>
- ▶ 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 <http://www.pactbelize.org/Home.aspx>
- ▶ 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



Belize Example

