Ecoregional planning of the Maya, Zoque and Olmec forests

Report on ecoregional planning workshop

Telchac Puerto, Yucatán
November 29 – December 3, 2004.

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PROGRAMME FOR BELIZE
CONSERVACIÓN INTERNACIONAL
PRONATURA PENÍNSULA DE YUCATÁN, A.C.
WCS WILDLIFE CONSERVATION SOCIETY
ECOSUR
The Nature Conservancy SAVING THE LAST GREAT PLACES ON EARTH
FUNDACION DEFENSORES DE LA NATURALEZA

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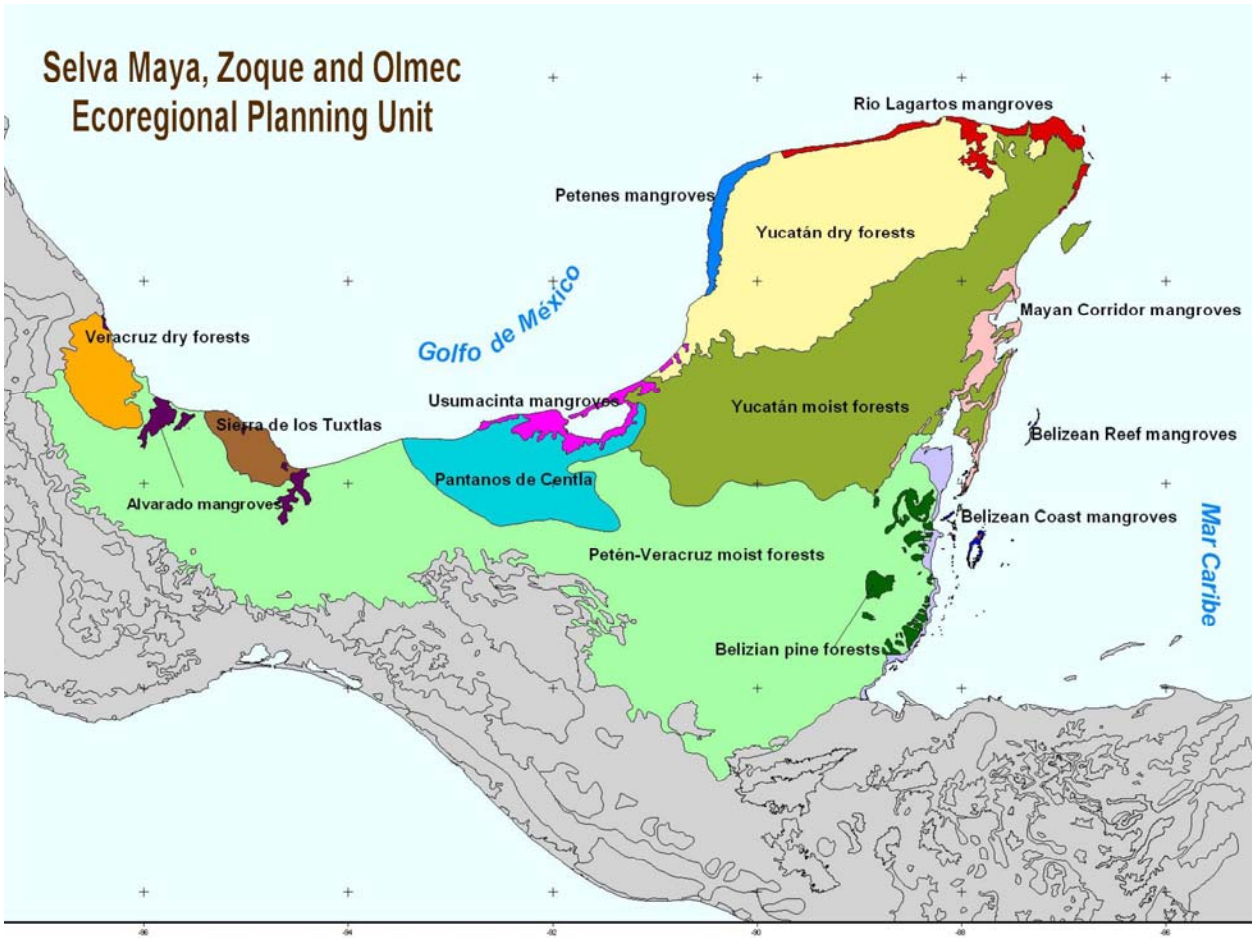
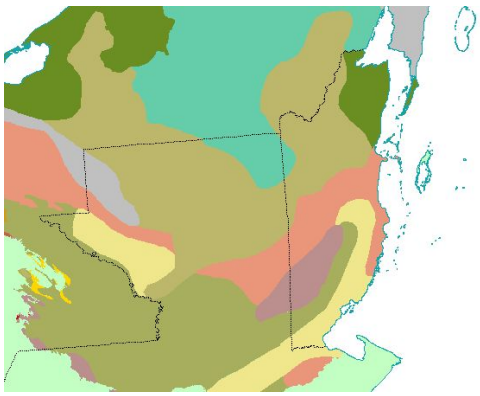
Background

- The ecoregional plan intends to identify conservation targets on a regional rather than national basis
- The underlying philosophy being that species do not recognize political boundaries but ecological boundaries
- "Planning Units" based on ecological similarities. The Maya, Zoque and Olmec Forests constitute such a planning unit

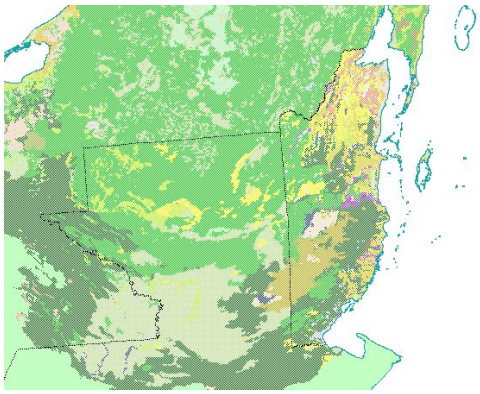


The principal methodology exists using a GIS system and combine various layers that indicate ecological (and social!) variability.

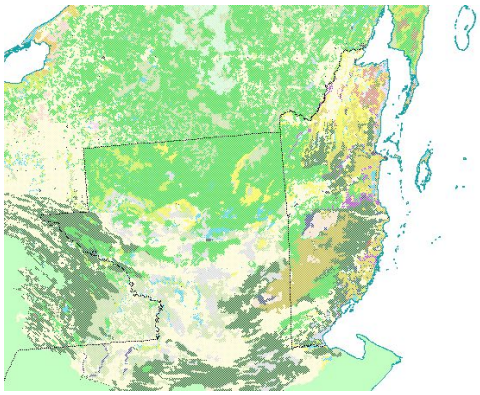
Some GIS layers used:



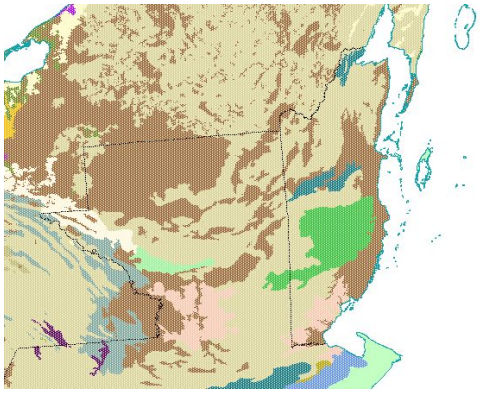
Climate



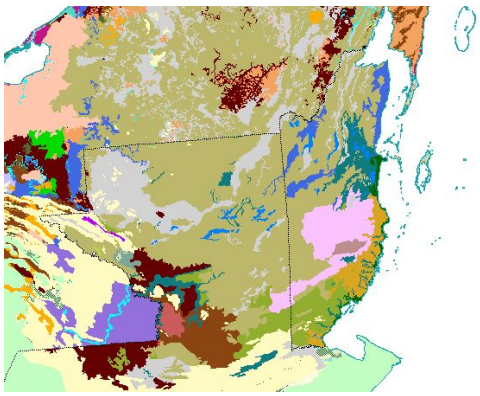
Potential vegetation cover



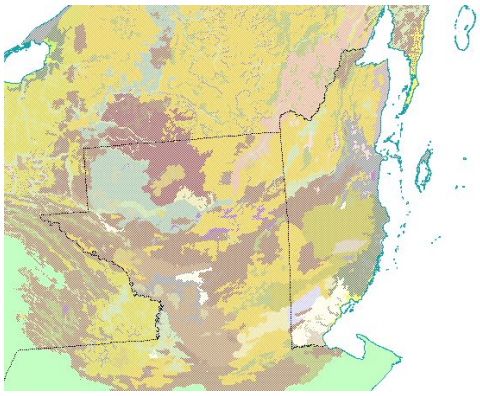
Actual vegetation cover



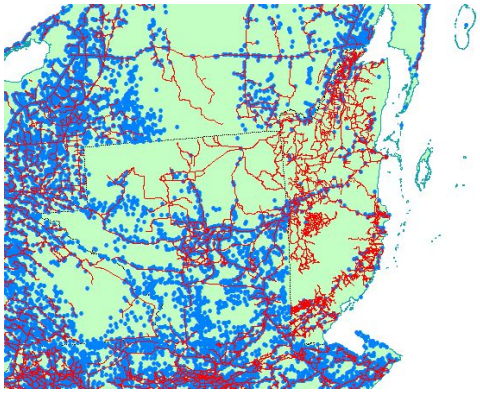
Geology



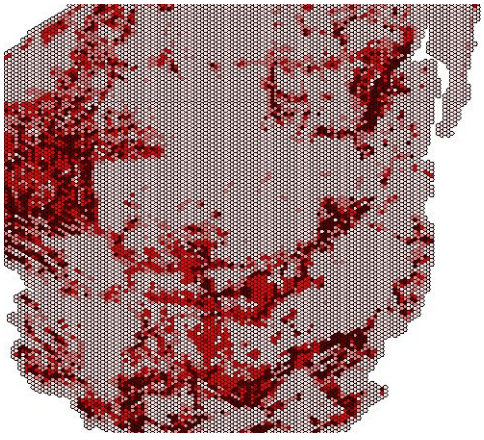
Soils



Geo-morphology



”Risk” layers such as roads



Various risk layers were translated into a “cost layer. The cost does not indicate a numerical value, but rather the amount of effort needed to conserve a particular area.

One more component of the assessment was the “Domain” analysis

- Domain” is a software package that calculates potential distribution of species
- Particularly useful when insufficient data exist
- Helps answering the question: “Does our protected area system cover the distribution of species of conservation concern?”
- Uses various layers as inputs such as:
  - Climate
  - Geology
  - Soil types
  - Vegetation cover
  - Altitude
  - Known distribution data

The resulting data were analyzed using “SPOT” which is a conservation planning optimization software tool similar to Marxan.

Objectives of the workshop

This workshop served to present and revise the Conservation Portfolio analysis carried out. During this workshop more than 50 experts from Belize, Guatemala, Mexico and the United Status were present.

The objectives can be summarized as follows:

1. Gain consensus on a portfolio of important conservation sites
2. Test the analysis against the social, economic political and institutional context present in the region
3. Provide information that will assist in the identification of national and regional focal points
4. Establish next steps leading to the completion of the plan and follow up, including the formation of a Strategies committee.

The recommendations and observations for the selection and analyses of the portfolios were described, as well as the analysis of the social, economic, political and institutional context, including the uses and threats found in the eco-region and the determination of the future actions of the plan.

The final portfolio will be an integration of all the portfolios generated, thus generation “core areas” of recurrent selection. It will also have to include sites containing current protected areas in each country as well as sites that are best described as “cultural patrimony”. The analysis distinguishes between artificial and natural water bodies and only considers the last for conservation. The ultimate aim is to present an integrated terrestrial/fresh water portfolio. Finally, it is proposed to reduce the weight of species distributions generated by SPOT and increase the weight of ecological systems. The

principal reason for the exclusion of species data is that insufficient data exists to properly analyse species diversity.

Portfolio as it pertains to Belize. Notice:
Large resemblance to existing PA system in Belize.

- Some gaps that could be covered by private PA's
- Some gaps in the coastal region
- Some parts of existing PA's not identified based on large "cost" (threats)

A threat analysis was carried out by regional working groups. Each group identified the main actors that influenced the main actors for the threats identified.

Similarly, a macro-economic analysis was carried out by the separate working groups. Specific elements that were researched include: sources of information and important activities and their impact to conservation. In the social context an analysis was made of the population dynamics based on cultural and economic parameters. Also, energy sources were evaluated.

Finally, an analysis was made to research to options to come to an establishment of a conservation alliance. Identifying the principal stakeholders and sources of information.

Workshop decisions and findings

SPOT Parameters

Blocked/seed areas

- Coastal Lagoons were blocked when SPOT was run; however these areas are high priority areas. Our question is whether they would be automatically included in the Portfolio even if they were not blocked? It is recommended that SPOT be re-run to ascertain this.
- Jan mentioned that current government mandate is for the NPAPSP to serve as a validation of conservation sites/protected areas. We should look at all areas that should be protected. We recommend that protected areas not be included (blocked) from the onset, rather start fresh to get a perspective of what would have been included in the Portfolio. However, the protected areas may be used as 'Seeds/Semillas'.

Level of fragmentation

- At this point the roundtable feels that the corridor linkages are fine at this coarser scale.

Maximum acceptable area

- 40-50% National Terrestrial Areas

Inputs/ Revision

Road and Trail System

- The issue regarding the roads map came up. Specifically, there are known areas in Belize that contain roads that are generally unused for resource extraction since there is high management presence.
- Consequently, in certain areas, the road map may not be the most appropriate indicator as a barrier that affects connectivity (ie. Gallon Jug, RBCMA, Mountain Pine Ridge, Chiquibul FR, Cockscomb).

Areas for inclusion or exclusion

- Review why certain sections/blocks of forested area are not being included in the SPOT Analysis results (ie. Southern Yalbac, Columbia Forest Reserve). Check on the inputs to ascertain why these are consistently excluded in the Portfolio.
- Reassess why Cockscomb Basin Reserve has a level three (3; orange) area in the middle of the protected area. (may be removed after road and trail system is revised).

General comments

- The Rio Hondo Freshwater Mangroves were highlighted and their presence confirmed in the roundtable. Freshwater Mangroves are a conservation target.
- The Aguas Turbias National Park is not included in the Portfolio. The roundtable confirmed that its value to the Protected Areas System is low priority.
- Cross border anthropogenic activities in Western Belize are clearly shown in the Portfolio; these areas impact the Belizean protected areas. This is a cause for concern and management presence in these areas should be priority.

Threat analysis and social analysis

Threats to the fresh water systems

- Gravel mining in rivers.
- Agrochemical polution.
- Roads.
- Deforestation

Population and population increase

- Migration to Belize city from the south.
- Growing population on the Guatemalan side affecting boundary areas with invasions.
- The usual effects of uncontrolled population growth.

No.	Threat	Executing agency	Regulating agencies	Promoters	Beneficiaries	Affected parties
	Roads and Bridges The most important roads affect the portfolio. Many roads exist in forest reserves Incursions into protected areas are facilitated by roads.	Ministry of Work Contactors	Ministry of Work Highways Forestry Department within Forest Reserves	Government and Financing Institutions Area representatives Local communities	Farmers and people living in remote areas Road-users Recent arrivals in remote areas. Hunters	Rural communities whose cultures, territories and economy are affected with the highway of the south. The deflections in highways affect communities that before were connected.
	Land use change (from forest to agriculture) The change of use of the ground to agriculture must to the quality of the ground, political availability, highways and accessibility, and initiatives. This already has left few lands available apt for agriculture in Belize. The expansion	Industrial Agriculture	Ministry of Natural Resources, Land Utilization Act. Government	High land taxes promote fragmentation	Farmers Immigrants, including illegal immigrants	Forestry Sector Communities previously depending on hunting Communities depending of water and find their sources contaminated by agrochemicals and runoff.

No.	Threat	Executing agency	Regulating agencies	Promoters	Beneficiaries	Affected parties
	tendency includes mechanized and nonmechanized agriculture. In the Sixties, the government acquired great earth extensions of which only 20% have agricultural vocation.					
	Agricultural barriers to the connectivity.	Guatemalan immigrants infiltrate frontier areas and affect connectivity	Forestry Department		Forest industry Rural communities resent Guatemalan invasion	
	Fires Zones with high fire risk: measured on the basis of sensitivity of the ecosystems, proximity to the highways, types of agriculture, slope, winds and presence of combustible plants like the cohune (Attalea cohune). The fires are significant and are being increased. The punishments are very low.	Farmers, hunters and neighbours of savanna attempting to combat perceived pests (snakes). Careless people	Agriculture Department issues permits for agricultural fires. But control is not implemented		Subsistence farmers, Hunters	Agriculturists with perennial plantations Forest Industry Protected Areas Rural communities Tourism Industry Farmers (losing soil fertility)
	Water extraction Well extraction in Ambergris Key, for human consumption and	Commercial agriculture Tourism Aquaculture Residents of towns and	Ministry of Natural Resources Department of Environment:		Commercial agriculture Tourism Aquaculture Residents of towns and	Population of Ambergris Caye and other islands

No.	Threat	Executing agency	Regulating agencies	Promoters	Beneficiaries	Affected parties
	tourism. Dams for agriculture Aquaculture Extraction for villages and towns (not a problem as yet)	villages	issues "Water Abstraction License" that allows to take water from rivers Belize Water Service, a private company, that owns Water Rights Protem Water Commission, currently the regulating body		villages	
	TOURISM Tourism in Belize centered on Cayes and Cruise Ship arrivals (Cruise Ship Tourism)	Foreigners investors and Belizeans	Ministry of Tourism: Belize Tourism Board	Belize Tourism Industry Association, Belize Hotel Association, Belize Tourism Board	Communities and stakeholders involved in providing tourism products and services Well established lodges and service providers that out compete local less skilled service providers	Local communities within the sphere of influence of well established lodges that out-compete and exploit services offered by local entrepreneurs Scale of benefits weighted to benefit lodges and well established service providers rather than locals

Follow up activities

Currently organizing the information generated, as well as requesting permits for full distribution in cases where this is restricted. The information includes:

- 14 biophysical maps (geology, climates, etc.).
- 14 maps of human activities
- 430 maps for potential species habitats
- 1 list of endemic and endangered species
- 1 data base with 250,000 records of different species
- 1 metadata base with cartographic information
- 8 process reports

1,000 DVDs will be distributed with the aforementioned information.

The web site www.selvamaya.org is up and operating, with the information generated from the beginning of the project through October, 2004 available for consultation.

The Strategies Committee was formed with the following people, and the first meeting was held on Wednesday, February 9.

1. Marco Lazcano, Executive Director of Amigos de Sian Kan, México,
2. Norma Ferriz, Executive Director of Pronatura Veracruz, México
3. Wilber Sabido, Project Director of the Programme for Belize, Belize
4. David Perrera, Ministry of Environment, Industry and Commerce, Belize
5. Rosa María Chan, Executive Director of Propetén, Guatemala
6. Salomón Díaz, Land Use Regulations, SEMARNAT, México
7. Fernando Castro, Conservation Units Director, National Council of Protected Areas, Guatemala
8. Marie Claire Paíz, Director of the Programa Sur de México de TNC, México
9. Estuardo Secaira, Scientific Advisor, TNC, Guatemala

Next steps

The sequence of action site will be determined based on two variables: the biodiversity value of the sites and the level of threat. The environmental value will be determined through the number of conservation elements sheltered and number of hectares of habitat found there. The degree of threat will be determined by adding the cost of the cells contained in the site and its outlying area. Priority sites will be those with a high biodiversity value that are strongly threatened.

The Strategies Design Workshop will be held in **Antigua, Guatemala on the 30th and 31st of March.** The final terrestrial portfolio, fresh water portfolio, and proposed sequence of actions will be presented there. Context analysis, stakeholders analysis and focal issues identified will be presented there, as the basis for strategies design. The workshop will deal only with the issues that require actions by two or three countries, or

large extensions of Mexican territory. Actions within the national territory of Guatemala and Belize, or at the state level in Mexico, will be discussed in later fora and on an internal basis. The workshop will be limited to 30 people, for financial reasons as well as to keep it flexible and efficient.

The Strategies Committee will later analyze proposals from the Antigua Workshop, evaluating them according to effectiveness, cost/benefit and feasibility, to select the priority strategies. A final document will then be drafted for review by the remaining members of the Strategies Group.