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Symposiu
WHAT UNDERWRITES MAYA URBANISM: SUSTAINING THE MAYA FOREST LANDSCAPE ~ PAST PRESENT FUTURE?
Anabel Ford and Ronald Nigh (co-coordinadores)

This symposium explores theoretical and empirical issues concerning the relationship of Maya land use and population to the Neotropical environment in different geographical regions and time periods. Papers will examine the relationship of the Lowland Maya to their landscape, including whether they over-exploited their natural resources and how change in population density has affected land use at different times. Data from ecology, archaeology and ethnography considers settlement patterns, soil management, forestry, food, water and urbanization. We focus on the skills the Maya have developed to manage tropical ecosystems over the past 5,000 years and the relevance of those skills for the future.

Lista de participantes
Betty Faust (CINVESTAV Mérida)
María Guadalupe Zetina (CINVESTAV Mérida)
Ronald Nigh (co-coordinador; CIESAS Sureste)
Norman Schwartz (University of Delaware)
David Campbell (Grinnell College)
Samuel Levy Thacher (EOCSUR San Cristóbal de Las Casas)
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WATER MANAGEMENT AND FOREST POLITICS IN THE MODERNIZING MAYA COMMUNITY OF PICH, CAMPECHE, MEXICO.
By Betty Faust

Scarborough's theoretical analysis of the "flow of power" (2003) provides context for data collected in various research visits to Pich, Campeche, Mexico, since 1985. This modernizing Maya community has gradually abandoned pre-industrial water management systems developed for use in the local karst. These systems supported forest management and gardening cycles that interacted with village ritual cycles and political organization. The government drilled well and piped water system has interacted with changes in forest use, food procurement and commerce, reducing both ritual symbolism and cooperative activities beyond the extended family level of organization. These changes have implications for understanding pre-Columbian events.

HOW MANY HOUSES PER FAMILY? ORAL HISTORIES OF NOMADIC AGRICULTURE IN CAMPECHE, MEXICO.

Maria Guadelupe Zetina and Betty Bernice Faust

Before public services began (1965) in the rural communities of Campeche, people lived in dispersed settlements for varying portions of the year, in small groups of related households near groundwater. They returned to village homes for holidays, marketing and visits, some for all of dry season. Many maintained field rotations of 20-30 years around their "rancherias"; others worked for village elites continually clearing new, large areas of high forest. We explore the implications of these oral histories for estimates of pre-Columbian population densities, which have assumed that a home was permanently occupied by a family of five.

AGRICULTURE AND THE MAYA FOREST MATRIX: INTENTIONAL SUCCESSION IN LACANDONIA, EASTERN CHIAPAS.
Ronald Nigh

Understanding agriculture in tropical secondary forest landscapes is inherently interdisciplinary, focusing the interest of the ecological, physical and social sciences. Emphasis is usually directed towards natural successional processes after human disturbance, yet intentional human management of the forest matrix was probably central to the history and genesis of the Maya agriculture. Intervention in secondary sucession after agriculture resulted in forest enrichment in ethnobotanical species and accelerated the recovery of soil fertility. The Maya have viewed forests in similar ways to ecologists, identifying and working with functional groups of woody species and to enhance biodiversity and ecosystem resilience.

YUCATEC, KEKCHI AND MOPAN MAYA HOME GARDENS AS BIODIVERSITY HOTSPOTS

David G. Campbell

Maya home gardens, being of complex architectures and phenologies, have long been recognized as repositories of native species and the ethnobotanical traditions that pertain to them. We examine the phytosociology, alpha diversity and beta diversity of Yucatec, Kekchi and Mopan Maya home gardens, and Yucatec pastures, in western and southern Belize, and evaluate their function as refuges for native species of flowering plants. Our data show that the gardens are biological refuges, richer in species (including native species) of flowering plants than the subtropical forests that surround them. We demonstrate that pastures, although less diverse, also function as refuges, and that pastures share a high index of similarity to gardens.

TRADITIONAL HOME GARDENS OF PETÉN, GUATEMALA: RESOURCE MANAGEMENT, FOOD SECURITY, AND CONSERVATION

Corzo Márquez, A. R., and **N. B. Schwartz**, with the collaboration of F. Ramírez Baldizón, F.M. Acosta Puga, A. Durán Ramírez, C. R. Barquín Mendoza and J. Olán.*

Since the mid-1960s, massive colonization of Petén, Guatemala's northern neotropical lowlands (the southern Maya lowlands) has resulted in extensive conversion of forests to cropland and pasture. Colonizing ranchers and farmers use practices that are ill

suited to the soils of Petén. In contrast, native Peteneros have productive well-managed agro-forestry systems, including traditional home gardens that provide them with food security and are compatible with conservation of natural resources. This essay describes the structure and management of the traritional home gardens as well as their financial, social, and food security benefits for householders. With over 190 useful plant species, traditional home gardens in Petén are highly diverse and rich (mean number of species per garden is 54; mean number of plants is 392). Traditional Petén gardens offer colonizing settlers ways to improve income, nutrition, and food security without degrading the environment. The Petén may also have implications for understanding pre-Hispanic adaptive strategies.

DISEÑO DE CONECTORES BIOLÓGICOS MEDIANTE TÉCNICAS TRADICIONALES MAYAS DE MANEJO Y APROVECHAMIENTO FORESTAL

Samuel Levy-Thacher

El presente proyecto combina investigación etnobotánica con técnicas de rehabilitación ecológica, orientadas ambas, a conciliar el binomio de conservación-aprovechamiento sostenible. Esta propuesta se distingue por sustentarse en prácticas de manejo y aprovechamiento forestal tradicionales mayas para la implementación de conectores biológicos. Dentro de estas formas tradicionales destacan aquellas estrechamente vinculadas con la existencia de espacios propicios para el establecimiento de conectores biológicos, como los son las franjas de vegetación a lo largo de los caminos, ríos, apiarios, milpas y poblados. Estos espacios vegetales son formados y mantenidos por los habitantes de la región para la producción de leña y materiales de construcción, la cacería, proporcionar sombra y descanso a los campesinos en transito, así como para la protección y cuidado de sus ríos. De esta forma consideramos factible aprovechar el manejo campesino del paisaje forestal para conformar una red de conectores vegetales dentro y entre las comunidades campesinas acordes a sus usos y costumbres, sin obstaculizar ni interferir en los procesos y actividades productivas regionales. Creemos que estas franjas de vegetación podrían adecuarse a los propósitos del CBMM mediante el desarrollo de técnicas de manejo silvícola de especies nativas y la participación e interés de las comunidades campesinas. El trabajo se llevará a cabo en las subcomunidades Nueva Palestina y Frontera Corozal de la comunidad Lacandona, principal fuente de presión antrópica hacia la Reserva de la Biosfera Montes Azules, en el estado de Chiapas.

ROLE OF INTERCULTURAL EDUCATION IN THE MANAGEMENT OF MAYA NATURAL RESOURCES, A SOUND ALTERNATIVE FOR THE SUSTAINABILITY OF THE REGION

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A globalized economy in the Maya region (Mexico, Guatemala, Belize, Honduras) is adding unprecedented pressure on the natural resources in all the Maya region. Mass tourism and exponential population growth in a relative short period of time, for instance, are demanding tremendous amounts of forest resources, water, and energy. Because of this rapid development, the richness of the Maya forest culture is being lost due to migration and lack of the knowledge passed on to new generations. At the same time, enormous amounts of liquid and solid residues, most of which are not treated properly, are dumped into the ecosystems. Although social organizations and government programs are working to minimize those impacts, the indicators for sustainability show very little or no success. The most vulnerable social group under this situation is the Maya indigenous population, whose forest, water and soil are having, probably, the greatest negative impact in history. The recent creation of an Intercultural University in Quintana Roo, Mexico, opens possibilities not only to generate a more complete database of the natural resources in the area but to develop new intercultural ways to construct alternatives towards a sustainable development of the region.

PAPEL DE LA EDUCACIÓN INTERCULTURAL EN EL MANEJO DE LOS RECURSOS NATURALES MAYAS, UNA ALTERNATIVA VIABLE PARA LA SOSTENIBILIDAD DE LA REGIÓN

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Una economía cada vez mas globalizada en la región Maya (México, Guatemala, Belice, Honduras) adiciona presiones sin precedentes a sus recursos naturales. El turismo masivo y el crecimiento exponencial de la población en un período relativamente corto, por ejemplo, están demandando enormes cantidades de recursos forestales, agua y energía. Debido a este fenómeno, la riqueza de la cultura forestal Maya se está perdiendo por la emigración y la falta de transmisión de conocimientos empíricos a las nuevas generaciones. Al mismo tiempo, grandes cantidades de residuos sólidos y líquidos se vierten a los ecosistemas sin el tratamiento adecuado. A pesar del trabajo de ONG's y del gobierno para minimizar estos impactos, los indicadores de sostenibilidad muestran poco o nulo éxito. El grupo social mas vulnerable ante estas condiciones es el de los indígenas Mayas, cuya selva, agua y suelo están recibiendo, probablemente, el mas alto impacto negativo en su historia. La reciente creación de la Universidad Intercultural Maya de Quintana Roo abre posibilidades no solamente para ampliar la base de datos con respecto a los recursos naturales del área, sino que también para generar nuevas formas interculturales para construir alternativas que conduzcan al desarrollo sostenible de la región.

THE INNOVATION OF THE MAYA FOREST GARDEN ~ A 5000 YEAR TRADITION

Anabel Ford

Contrasts in data on the ancient Maya have this remarkable civilization emerging in a starkly inappropriate tropical setting.

Paeolenvironmental data have been interpreted as indicating major forest changes by 1000 BC, the exact time that the first archaeological settlements are recognized. Massive deforestation is seen by 250 BC, a time when archaeological data suggest initial growth of the civilization. Pollen data maintain the most significant signatures of disturbance in the Late Classic from AD 600-900, yet this is coincident with the most exuberant public architectural developments of the Maya.
In this paper, new data on climatic variations over the past 5000 years are combined with paleo environmental and archaeological data from the central Maya lowlands to reveal a different picture of creative adaptation and resilience resulting in the creation of the Maya Forest Garden

INCIDENTS OF TRAVEL IN THE YUCATAN REVISITED

Macduff Everton
A photo-essay of modern Yucatec Maya farmers reveals their mixed strategy of milpa, forest garden, and home garden agriculture to satisfy their subsistence needs, supplemented by bee-keeping and animal husbandry. The need for cash has traditionally been drawn from temporal labor in such activities as milpa-for-hire, forest product extraction, cattle production, road building, but has increasingly involved jobs in the tourist service industry, and has been dramatically changed by NAFTA. The dynamics of Maya farmers' adaptations to contemporary settings are shown with case studies of agricultural practice, and draw from 35 years of photographs from northern Yucatan. This overview has implications - past, present, and future - for Maya farmers, their culture, and their forest.