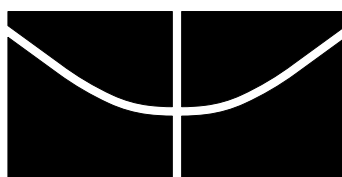


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# 19<sup>th</sup> Annual Meeting of the Society for Conservation Biology

## BOOK OF ABSTRACTS



Universidade de Brasília

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Effects of forest destruction on ant community structure in Salak Mountain were studied between March and September 2004. Ecological research was conducted at four different locations covering three different habitats: undisturbed secondary forest, disturbed secondary forest, and production forest. Ant communities were surveyed by conducting pitfall traps. We found 4477 individual belongs to 34 genus at Salak Mountain. Genus *Pheidole* was commonly found in all forest type and its abundance distributed equally in all forest type. Genus *Pheidologeton* dominated ant communities with its individual number covered more than 50% of all collected specimen. However number of individual of the genus was extremely very low in forest experienced only minor disturbance compared with other forest types. The findings from different areas at Salak Mountain showed that species composition of ant communities significantly related to habitat type. Our analyses indicated that forest disturbance significantly affects the structure of ant communities in Salak Mountain. Community structure of ants extremely changed at different forest type. Several species can only be found in one forest type. Our data indicated that there is a site-specific species composition of ant communities and forest transformation that may contribute significantly to the presence of single species.

**774. DEVELOPMENT OF AN ELECTRONIC FIELD GUIDE TO FACILITATE IDENTIFICATION OF MACROINVERTEBRATES FROM COSTA RICAN STREAMS.** SAINTOURS, F.; Springer, M.; Santos, A.; Stevenson, Robert D. Dept. of Biology, Univ. of Massachusetts, Boston MA, USA (FSO, AS, RDS); Universidad de Costa Rica, San Pedro, Costa Rica (MS), robert.stevenson@umb.edu.

Rivers and streams are among the most threatened ecosystems throughout the world. Biologists have used a variety of biodiversity indices to quantify the environmental health of these systems using data from habitat surveys in which species are identified and counted. In addition to ecosystem health concerns, recent laws in Costa Rica require that environmental impact studies be performed on water bodies prior to any construction or water withdrawal, creating a demand for tools that can assure rapid and accurate identification of large amounts of collected material. To improve scientists' ability to identify species, we photographed aquatic specimens using a Nikon D1X and Coolpix digital cameras at 12 sites in Costa Rica over a three-year period. Images were taken of freshly captured specimens near the site, or of preserved specimens from the collection at the Universidad de Costa Rica. The 300+ images cover 110 genera, representing 70 families comprised from aquatic insects and crustaceans found in freshwater habitats throughout Central America. These images are now available as an Electronic Field Guide format at (<http://bdei-cs-umb.edu:8080/keys/html/index.html>). Supported by NSF grant DBI-0111540.

**775. STUDY ON BIRDS OF IUCN RED LIST AND IT'S DISTRIBUTION IN GUILAN PROVINCE, NORTH OF IRAN.** SAKARI, MAHYAR; Hadipour, Ehsan; Alinejad, Hosein; Nezami, Shabanali. Tonekabon Islamic Azad University, Valiabad, Chalous Road, Tonekabon, Mazandaran, Iran, mahyarsakari@hotmail.com.

The birds of IUCN red list in Guilan province in north of Iran studied from 1990 to 2003. This province is well known destination for many of migratory birds groups for wintering. The study team used bird's census for 14 years of counting activities in 31 sites. The data entered into information sheets and analyzed by computer software of Excel. From 16 species of birds are in the list of Iran IUCN Red List, 9 have few data and information and rest has no records. These 3 species of 9, including, *Aythya nyroca*, *Phalacrocorax pygmeus*, and *Pelicanus crespus* show high population. Also, some habitats like Siahkeshim protected area; Sorkhankol wildlife refugee and Anzali Int'l Wetland etc. had more population. Deficient information, related to biological features of species was main gap of the study for better results. In other hand providing a list of Red species needs to more information. It seems the IUCN Red List, which prepared for Iran needs to receive more scientific survey by experts. It strongly suggest that for preparation of internationally important list which will make condition for decision making by different stakeholders, is essential to have up to date, legally and scientific information.

**776. BIRD ASSEMBLAGES IN SLASH-AND-BURN SUCCESSIONAL FOREST OF THE YUCATAN PENINSULA, MEXICO.** SALGADO-ORTIZ, JAVIER; Raleigh, J. Robertson. Dept. of Biology, Queen's University, K7L 3N6, Kingston, On. Canada.

Successional forest resulting from slash-and burn agriculture is becoming increasingly common throughout the Neotropics, still, its importance for biodiversity conservation remains underestimated. We used fixed radius point counts to sample the avifauna along a successional gradient at the Calakmul Biosphere Reserve, Campeche, Mexico to assess the value of secondary forest for conservation of the local avifauna. Mature forest had the highest species richness, but did not differ significantly from that of 20-30 years old secondary forest. Bird composition of early stages of succession differed significantly from older stages resulting in higher species richness along the successional gradient compared to mature forest alone. Close examination of distribution of individual species revealed that 42% of them are highly dependent on mature and older successional forest, thus are likely to decline in absence of these habitats. The results of our study indicate that regional bird diversity in human managed landscapes of the Yucatan Peninsula can be maximized through slash-and-burn agriculture. Allowing long fallow periods (>20 years) and the maintenance of a heterogeneous landscape that includes all stages of succession and mature forest is necessary to ensure the long-term conservation of the local avifauna.

**777. EX SITU CONSERVATION TECHNIQUE FOR TWO ANACARDIACEAE TARGET SPECIES: *Astronium fraxinifolium* AND *Schinopsis brasiliensis*.** SALOMÃO, ANTONIETA N.; Silva, José A.; Santos, Izulmé R. I.; Mundim, Rosângela C. Laboratório de Fisiologia de Sementes, Embrapa Recursos Genéticos e Biotecnologia, Brasília, DF, P.O. Box 02372, 70770-900 Brazil, antoniet@cenargen.embrapa.br. (ANS, JAS, IRIS).

*Ex situ* conservation techniques - seed gene bank- was adopted to safeguarding, disposing, for scientific purposes and degraded land reclamation the germplasm of the target species *Astronium fraxinifolium* and *Schinopsis brasiliensis*. The morphological seed characteristics (weight of 1000 seeds, length and width of seeds and seed coat's color) of 17 *A. fraxinifolium* progenies and 43 *S. brasiliensis* progenies from different provenances were evaluated. Physiological seed characteristics (moisture content and ger-

minability) before and after two years storage at  $-20^{\circ}\text{C}$  were also evaluated. Almost all progenies of both species maintained their original germinability after two years storage at  $-20^{\circ}\text{C}$ . The material is maintained at  $-20^{\circ}\text{C}$  since 1997 without significant loss of viability. All progenies were also conserved in field gene bank that was set up at Sucupira Experimental Field Station in a  $3 \times 3\text{m}$  (*A. fraxinifolium*) and  $5 \times 5\text{m}$  (*S. brasiliensis*) spacing design, carrying six plants per progeny in two random blocks for which species. Replacement of dead plants in field gene bank has been carried out as necessary, during three years after it was set up.

**778. CONSERVATION OF SEED GERMPLASM RESCUED FROM HYDROELECTRIC'S AREAS IN CERRADO BIOME.** Salomão, Antonieta N.; Walter, Bruno M.T.; Cavalcanti, Taciana B.; Santos, Aécio A.; Santos, Glocimar P.; Mundim, Rosângela C.; Pereira, João B.; Rezende, João M.; Santos, Izulmé R. I.; Moreira, Gledison A.; BRILHANTE, MARCELO DE M. Laboratório de Fisiologia de Sementes, Herbário CEN, Embrapa Recursos Genéticos e Biotecnologia, Brasília, DF, P.O.Box 02372, 70770-900 Brazil, antoniet@cenargen.embrapa.br. (ANS, TBC).

The Cerrado biome is under constant disturbances because of different human activities. Recently, environmental disturbance in Cerrado is due to hydroelectric constructions. Embrapa Recursos Genéticos e Biotecnologia botanical and genetic conservation staff, since 1996 has been rescued seed germplasm from five hydroelectrics (Serra da Mesa, Corumbá I and IV, Cana Brava in the state of Goiás and Queimado in the state of Goiás, Minas Gerais and Distrito Federal). A total of 463 accessions of 100 species belonging to 29 botanical families have been collected and stored at  $-20^{\circ}\text{C}$ , after seed desiccation and sensitivity to subzero tolerance were determined. The most representative families are Caesalpiniaceae (105 accessions), Fabaceae, (86 accessions), Mimosaceae (81 accessions), Bignoniaceae (32 accessions), Anacardiaceae (30 accessions), Combretaceae (23 accessions) and Sterculiaceae (22 accessions). Plants of all accessions were used to afforestation of the disturbed area surrounding the hydroelectrics.

**779. SYNERGISTIC SERIAL DEPLETION OF NEAR SHORE BENTHIC INVERTEBRATES LEADS TO A RECENT DECLINE OF A KEYSTONE GRAZER AND THE ALTERATION OF A COASTAL ECOSYSTEM.** SALOMON, ANNE K.; Tanape, Nick Sr.; Ruesink, Jennifer L.; Huntington, Henry P. University of Washington, Department of Biology, Box 351800, Seattle, WA, USA 98195-1800 salomon@u.washington.edu (AKS JLR). Nanwalek Native Village, Box 8003, Nanwalek, Alaska, USA 99603 (NT). Huntington Consulting, Box 773564, Eagle River, Alaska, USA 99577 (HPH).

We investigated the relative roles of natural factors and harvest leading to localized declines of the black chiton, *Katharina tunicata*. This chiton is a subsistence shellfish resource and recognized keystone grazer. Small-scale removal experiments and large-scale experimental harvests, in collaboration with village residents, revealed that the absence of this dominant consumer can increase primary production by two orders of magnitude and species diversity by 50% yet reduce the survival of other benthic grazers. Based on interviews with village elders, localized declines can be attributed to changes in social and biological dynamics. Historical subsistence harvest was less spatially concentrated because communities shifted among seasonal camps and diets included a wider range of invertebrates, such as crab, urchins, and clams. These resources are now scarce, due to intensified consumption by an increasing sea otter population and histori-

cal subsistence and commercial harvest. Sequential prey switching by both humans and sea otters and a resulting restriction in prey species breadth may have led to intensified harvest of *K. tunicata*. Therefore, the recent localized depletion of this keystone grazer and its subsequent ecosystem-level effects may reflect a concentration in the spatial distribution of harvest pressure and the synergistic serial depletion of nearshore benthic invertebrates.

**780. CONSERVATION OF ATLANTIC FOREST SPECIES IN THE CACAO PLANTATIONS OF SOUTHERN BAHIA, BRAZIL.** SAMBUICHI, REGINA H. R.; Haridasan, Mundayatan. Departamento de Ciências Biológicas, Universidade Estadual de Santa Cruz, Ilhéus, BA, 45650-000, Brazil, sambuichi@uesc.br (RHRS). Departamento de Ecologia, Instituto de Biologia, Universidade de Brasília, Brasília, DF, 70818-900, Brazil (MH).

The Atlantic Forests of southern Bahia, with its high plant biodiversity and a great degree of endemism, has suffered intense deforestation over the last four decades with less than 10% of its original area remaining today mostly in fragments. A large part of these forests was converted into cacao plantations beginning the nineteenth century. Forests were thinned and cacao planted under the shade of remaining trees. Such plantations, known as cabruças, still conserve many of the native species. We surveyed the tree species in 3 ha each of five such cabruças of different ages to determine the extent of conservation of the original forest species. A total of 293 species were encountered among the 2514 individuals surveyed in a total of 15 ha. The number of individuals varied from 142 to 355 and the number of species from 46 to 180 among the cabruças, with the Shannon diversity index ranging from 3.31 to 4.22. The differences in species richness and plant diversity were influenced by tree density, management practices and the time of implantation of the cabruças.

**781. STRATEGIES FOR CONSERVATION OF THE TROPICAL CLOUD FOREST IN TAMAULIPAS, MEXICO.** SANCHEZ-RAMOS, G.; García-García, A.; Lara-Villalón, M.; Casas-González, S.L.; Martínez-Avalos, J.G. Instituto de Ecología y Alimentos, Universidad Autónoma de Tamaulipas. Mexico 13. Blvd. Adolfo L. Mateos No. 928 CP 87040. Cd. Victoria, Tamaulipas, Mexico, gsanchez@uat.edu.mx.

The Mexican cloud forest has been endangered the last three decades for the human impact. In the state of Tamaulipas (North of Mexico), this ecosystem shows the highest distribution for the American Continent. The principal strategies for the cloud forest conservation are by ecological studies as: diversity index (Shannon-Wiener  $H'$ ), floristic studies (ecological importance value) and zoological studies (direct and indirect methods). Our results show the presence of four localities containing cloud forest as principal kind of vegetation. These are: El Cielo, El Molino, Puerto Purificación and San Carlos in the Tamaulipas state, Mexico. The diversity index shows high levels for all the localities as follows: El Cielo ( $H'=0.93$ ), El Molino ( $H'=0.84$ ), Puerto Purificación ( $H'=0.89$ ) and San Carlos ( $H'=0.90$ ). However, the evenness or similarity index (Sorensen) shows few levels among localities. These levels are less than ca. 40% ( $C_s=0.39$ ). This fact shows the importance to establish the most adequate strategies for conservation. Actually, we are trying to put together all the tools (scientific and legal strategies) for the future conservation of this important ecosystem.