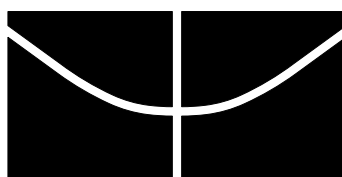

19th Annual Meeting of the Society for Conservation Biology

BOOK OF ABSTRACTS



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786. A COMPARISON OF MACROINVERTEBRATE DIVERSITY IN SMALL STREAMS OF VARYING FLOW PERMANENCE IN EASTERN MASSACHUSETTS, USA. SANTOS, ANNA N.; Stevenson, Robert D. Department of Biology, University of Massachusetts at Boston, 100 Morrissey Blvd., Boston, MA 02125 USA, anna.santos73@gmail.com (AS).

Freshwater species are among the most threatened in the world and small streams and their inhabitants are among the most threatened in North America. Vernal Pools and rivers are protected in Massachusetts, but not intermittent streams. A study was conducted of ten streams varying in flow regime, in eastern Massachusetts to determine how macroinvertebrate richness and diversity differ relative to stream flow permanence. Time kicked samples were taken of macroinvertebrates in April 2002 following streambed drying the previous summer. Measures of stream discharge were conducted for one year and streams were classified as perennial (constant flow) intermittent (dry for 3 months or less) or episodic (dry for more than 3 months). The intermittent streams maintained similar or higher macroinvertebrate richness and diversity than the perennial streams. Despite the occurrence of one to three months of drought these intermittent streams harbor a unique community of lotic species adapted to drought including the state watch-list species *Cordulegaster obliqua* (Cordulegastridae, Odonata). The episodic streams of this study maintained low levels of biodiversity in comparison. These findings implicate that the conservation status of intermittent streams should be reevaluated in order to maintain the biodiversity of our running waters.

787. CREATION OF FOREST EDGES AND THE IMPOVERISHMENT OF FRAGMENTED LANDSCAPES IN THE BRAZILIAN ATLANTIC FOREST. SANTOS, BRÁULIO A.; Oliveira, Marcondes A.; Grillo, Alexandre S.; Tabarelli, Marcelo. Departamento de Botânica, Centro de Ciências Biológicas, Universidade Federal de Pernambuco, Recife, PE, 50670-901, Brazil, santosba@ufpe.br.

Edge effects change both the taxonomic and ecological composition of tree species assemblages in tropical forest edges and small fragments. Recent reviews have suggested that these habitats tend to be converted into "secondary forests" in the long term. In order to test this hypothesis, we sampled tree species (DBH > 10 cm) in three habitats of a 3,500-ha fragment in the Brazilian Atlantic forest: (1) forest edges, i. e. 0-100 m distant from fragment border and not previously submitted to agriculture; (2) forest interior, i. e. patches of mature forests > 200 m distant from fragment border; and (3) 4-65-yr old patches of secondary forest, which were regenerating after slash-and-burn agriculture promoted in the center of the fragment. Simple linear regression models indicated that forest edges are similar to 30-40-yr old forests in terms of tree species density and richness, a half of the observed in the forest interior. Moreover, forest edges were similar to 15-28-yr old forests in terms of the percentage of emergent, shade-tolerant and large-seeded trees. Creation of edges promotes the establishment of low diversity "early secondary forests" and because of this highly fragmented landscapes in the Atlantic forest tend to retain impoverished and biased samples from the original flora.

788. COUNTRYSIDE BIOGEOGRAPHY IN REPTILE AND AMPHIBIAN COMMUNITIES IN SOUTHERN COSTA RICA: CONSERVATION VALUE OF HUMAN DOMINATED LANDSCAPES. SANTOS, GEORGINA; Pacheco, Jesús; Ceballos, Gerardo; Mendoza-Quijano, Fernando; Daily, Gretchen; Ehrlich, Paul. Museo de Zoología, Facultad de Ciencias,

A. P. 70-399 e Instituto de Ecología, A. P. 70-275, Universidad Nacional Autónoma de México, México D. F., 04510, México (GS, JP & GC) Instituto Tecnológico de Huejutla, Hidalgo (FMQ). Center for Conservation Biology, Stanford University, Stanford, CA, U. S. A. (GD & PE).

The future of biological diversity in the tropics depends largely on the conservation value of human-dominated lands. In this study we investigated the distribution of amphibians and reptiles in five habitats of southern Costa Rica: relatively extensive forest (227 ha), coffee plantation, pasture, coffee with adjacent forest remnant (<35 ha), and pasture with adjacent forest remnant (<35 ha). Species richness, composition, and abundance varied significantly with habitat type and distance from the extensive forest. Additionally, we recorded the local extinction of at least 5 species, likely as a result of human induced changes such as forest fragmentation, introduced diseases, and global warming. Of the 67 amphibian and reptile species recorded in our plots, most species (48, 68%) were found in forests and forest fragments, 36 (50%) in coffee plantations, and 38 (51%) in pastures. Additionally, 20 were recorded exclusively in extensive forest and forest fragments, 8 in coffee, and 8 in pastures. Our results were comparable to a similar study of mammals: relative continuous forest and small forest patches in combination with coffee plantations are important for the maintenance of the region's biological diversity, despite large scale negative human activities.

789. NATURAL PROTECTED AREAS AND THE CONSERVATION OF AMPHIBIANS AND REPTILES IN MEXICO: PRIORIZING SPECIES AND AREAS FOR CONSERVATION STRATEGIES. Santos, Georgina; PACHECO, JESÚS; Ceballos, Gerardo. Museo de Zoología, Facultad de Ciencias, A. P. 70-399 (GS). Instituto de Ecología, Universidad Nacional Autónoma de México, México D. F. 04510. México.

Main goal in the establishment of natural protected areas (NPA) is to preserve ecosystems and biodiversity associated in order to perpetuate the natural evolutionary processes. Successful results can be attained identifying priority areas for conservation that best represent the biological diversity and can optimize resources. This study evaluates the efficiency of the NPA's for the conservation of the Mexican amphibians and reptiles. These groups are highly diverse in Mexico, reaching 1164 species (360 amphibians and 804 reptiles) with high endemism (60%, 241, and 450 respectively). Thirty-four inventory lists of herpetofauna from Protected Areas were compiled and conservation status, geographic range, and endemism of the species were considered as the main features to build a hierarchical system resulting in the identification of priority species for conservation. The complimentary study of these NPA's reveals that 56% of the Mexican herpetofauna are excluded from the NPA's, being critical for amphibians, where only 38% have protected populations. The complimentary analysis reveals that 31 reserves are necessary to protect the herpetofauna included in the NPA's. Efficient strategies for planning reserves are necessary to guarantee the preservation of the priority and non priority species of the Mexican herpetofauna

790. CONSERVATION OF ZIGOTIC EMBRYONIC AXES OF *Genipa americana* L. (RUBIACEAE) USING CRYOPRESERVATION IN LIQUID NITROGEN. SANTOS, IZULMÉ R. I.; Salomão, Antonieta N.; Mundim, Rosângela C. Laboratório de Criobiologia, Embrapa Recursos Genéticos

e Biotecnologia, Brasília, DF, CP 02372, 70849-970, Brazil, izulme@cenargen.embrapa.br.

Embryonic axes of *Genipa americana* L. were successfully cryopreserved in liquid nitrogen. *G. americana* is a Cerrado species that is undergoing genetic erosion due to predatory collection of fruits and destruction of their habitats. *G. americana* seeds show intermediate behaviour under storage conditions, that is, they tolerate partial reduction of their water content, but lose viability when exposed to subzero temperature. Therefore, conservation of *G. americana* seeds using the conventional methodology is not possible and alternative methods are necessary. The objective of this work was to develop a cryopreservation protocol for *G. americana* axes. Seeds were desiccated over silica gel and cryopreserved in liquid nitrogen. Seeds were thawed and axes were excised and cultivated *in vitro* to evaluate their viability. Germination of axes excised from fully hydrated seeds (52% moisture content) was 97.5%. Desiccation reduced axes' viability and axes excised from seeds containing 8% moisture content showed 44% germination. After cryopreservation, axes isolated from fully hydrated seeds (52% moisture content) presented only 30% viability and the highest viability (100% germination) was attained by axes isolated from seeds with 8.1% moisture content. In conclusion, embryonic axes of *G. americana* can be cryopreserved with success just by adjusting their water content.

791. INVENTORY OF THE FAUNA FOUND IN THE LEAF LITTER OF PSAMMOPHILOUS HERBACEOUS VEGETATION IN THE COASTAL SANDPLAIN (RESTINGA) IN ALAGAMAR BEACH (PONTA NEGRA, NATAL, RN) NORTHEAST BRAZIL. Santos, Roberto L.; Moreira, Ricardo José; Almeida, Maria das Graças; Araújo-de-Almeida, Elinei; Mendonça-Júnior, Jurandir R.; MAIOLINO, DANIEL. Departamento de Botânica, Ecologia e Zoologia, Centro de Biociências, Universidade Federal do Rio Grande do Norte, Natal, RN, 59072-970, Brazil, jurandir_net@hotmail.com.

An inventory of the fauna associated with the leaf litter of psammophilous herbaceous vegetation was carried out in the coastal sandplain or restinga in Alagamar beach (Natal/RN), eastern coast of Rio Grande do Norte State, northeastern Brazil. A total of 109 samples were collected in three different vegetation types along the coastal dune system. The collected specimens amounted to 2005 individuals belonging in the taxa Chelicerata (order Acari; order Pseudoscorpiones; order Araneae: families Lycosidae, Thomisidae and Salticidae), Hexapoda (order Blatariæ: families Blatellidae and Bladeridae; order Coleoptera: families Scarabaeidae, Tenebrionidae, Carabidae, Elateridae, Bruchidae, Curculionidae; order Isoptera; order Embioptera, order Thysanura and order Hymenoptera: family Formicidae) and Mollusca (Gastropoda Pulmonata: families Subulinida e Bulimulidae). The order Acari was the most abundant with 65,13% of the collected specimens; the order Coleoptera was the second most abundant with 211,78%. The Coleoptera was the most diversified group, accounting for 72,41% of all taxa found in the leaf litter; Chelicerata accounted for 20,68% and Mollusca Gastropoda Pulmonata for 6,9%. A preliminary report on the conservation status of Alagamar beach is given, along with suggestions for the preservation of dune and restinga environments in Rio Grande do Norte State.

792. USING PHYLOGEOGRAPHY TO RECOGNIZE *Conopophaga lineata* (PASSERIFORMES) IMPORTANT POPULATIONS FOR CONSERVATION IN THE ATLANTIC FOREST. SARI, ELOISA H. R.; Pessoa, Rodrigo O.; Cabanne, Gustavo S.; Miyaki, Cristina Y.; Santos, Fabrício R. Departamento de Biologia Geral, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, Av. Antônio Carlos, 6627, Pampulha, CP 486, Belo Horizonte, MG, 31.270-910, Brazil; eloisagene@yahoo.com.br (EHRS, FRS). Departamento de Biologia, Instituto de Biociências, Universidade de São Paulo, Rua do Matão, 277, São Paulo, SP, 05508-900, Brazil (ROP, GSC, CYM).

High levels of genetic variability are important for populations and species persistence in nature. Phylogeography allows evaluating the distribution of a species' genetic diversity in its geographical range and in an evolutionary time scale. Thus, it is useful to identify important populations for conservation. *Conopophaga lineata* presents remarkable geographical variation in song and plumage, although the distributional limits of these variations are still undefined. Currently three subspecies are recognized, but with largely indefensible range limits. With the aim to assess *C. lineata* genetic diversity and to recognize important populations for conservation we sequenced 1046bp of the mtDNA control region of 120 individuals from southeastern Brazil and Misiones (Argentina). We found high intraspecific genetic diversity (58 haplotypes; nucleotide diversity of 0.024). Median-joining network revealed the existence of three very distinct clades within the distribution areas of two subspecies. An abrupt separation between clades is observed in Paraíba do Sul Valley. Two clades are not geographically split and occur sympatrically in some populations of southern Minas Gerais State (MG). One of these clades is widespread in MG and the other one in northeastern São Paulo State. Hence, this region showed high levels of genetic diversity. (Financial support: CAPES, CN Pq, FAPESP, PELD, WWF)

793. MONITORING ELEPHANT CORRIDORS AND ELEPHANT - HUMAN CONFLICT: AN INSIGHT FROM THE PAKKE - KAMENG LANDSCAPE OF NORTHEAST INDIA. Sarkar, Parbal; Akhtar, Naim; VARMA, SURENDRA; Menon, Vivek. Wildlife Trust of India, A 220 New Friends Colony, New Delhi 110 065 India (PS, NA, VM). Asian Elephant Research and Conservation Centre (A division of Asian Nature Conservation Foundation), C/o Centre for Ecological Sciences, Indian Institute of Science, Bangalore 560 012, India (SV). varma@ces.iisc.ernet.in.

Maintaining viable habitats and populations and mitigation of elephant human-conflict are key issues in the Asian elephant (*Elephas maximus*) management. However in most cases, contiguity of elephant habitat is retained through human settlements or croplands and these habitations attract elephants and may link populations. Given this, monitoring elephant corridors and elephant-human conflict, specifically rethinking conflict mitigation measures are indispensable. This new conservation concern motivated us to monitor elephant-human conflict in 12 (of 14) villages and use of 5 (of 6) corridors by elephants since 2002, in Pakke-Kameng landscape. Estimated crop damage by elephants for all study villages was 2 to 3% and on an average 5% and 2% of crops were damaged in corridor and non-corridor villages respectively. Encounter rates of elephant signs during conflict months (October - November) were 8.3/km and only 5.4km for non-conflict months (June - July). Encounter rates for habitat close to a) corridor villages were 9.3/km b) non-corridor villages were 4.8/km and c) set-