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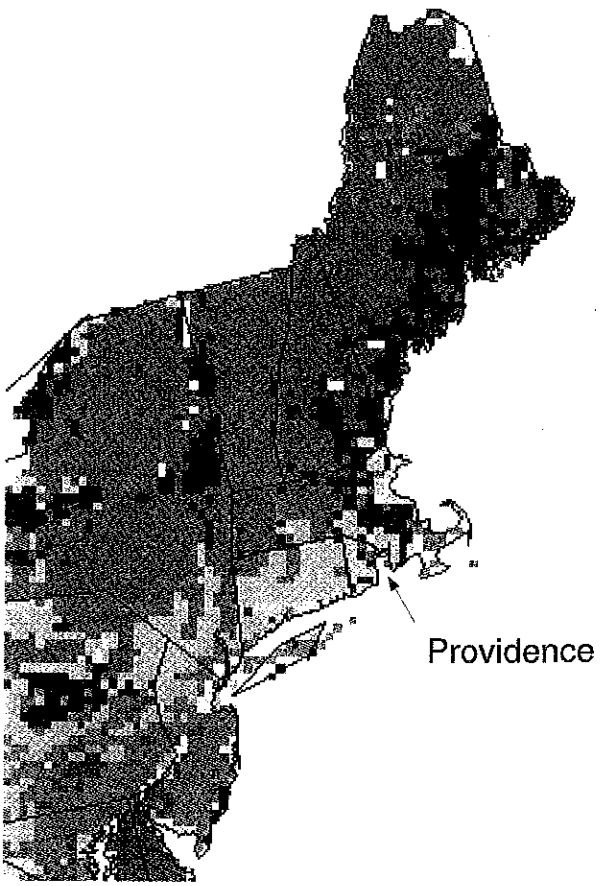
Abstracts



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MAENZA-GMELCH, TERRYANNE E. New York University, New York, NY 10003, USA. Post-settlement vegetation and fire in the Hudson Highlands, southeastern New York, USA.

Euroamerican disturbance of forests in the Hudson Highlands, southeastern New York beginning at 1700 AD is recorded in the topmost pollen spectra in sediments from Sutherland and Spruce Ponds. Marked increases in Ambrosia, Gramineae, and Tubuliflorae and presence of Rumex and Plantago signal the onset of land-clearance. Cutting of Quercus, Pinus, and Tsuga canadensis for domestic and/or industrial use is reflected as decreased pollen percentages of these taxa. Increases in opportunistic, light-demanding, early successional trees such as Betula and Acer rubrum follow. Decrease in Castanea dentata pollen succeeded by increases in Betula and Quercus reflect the demise and replacement of Castanea due to a fungal pathogen. Increased charcoal influx, particularly at Spruce Pond, during Euroamerican settlement may be explained by fire in connection with land-clearance, wood-related industries (charcoal, iron, and brick manufacturing), and operation of railroads (track fires).

MAGILL, ALISON H. and JOHN D. ABER. University of New Hampshire, Durham NH 03824. Effects of nitrogen inputs on DOC content of leachate from fresh leaf litter.

Studies of mineralization rates in two fertilized stands at the Harvard Forest, Petersham MA, showed a decrease in the proportion of total N mineralization occurring in the forest floor with increasing NH_4NO_3 additions. One hypothesis for this change is the depletion of microbially available soil carbon, such as dissolved organic carbon (DOC). A laboratory decomposition experiment was conducted to look at the relationship between increased N inputs and DOC released from the litter layer. Air-dried litter samples (seven species) were treated with nitrogen (NH_4 or NO_3) or deionized water at weekly intervals over a 15-week period, and leached with deionized water at one or two week intervals. Nitrogen treatments did not greatly affect DOC concentrations in leachate. Instead, variability in DOC concentrations was due to differences in species litter chemistry. Nitrogen treated samples showed greater weight loss than controls, although NO_3 and NH_4 treatments were not significantly different. Between 6 and 39% of total carbon loss was leached as DOC-C rather than respired as CO_2. Net mineralization and nitrification in litter was not related to changes in leachate DOC concentrations.

MAGNUSSON, WILLIAM E. and CLAUDIA AZEVEDO-RAMOS. Universidade Federal do Para, 66070-100 Belem, PA, BRAZIL, and Instituto Nacional de Pesquisas da Amazonia. 69083-000 Manaus, AM, BRAZIL. Vulnerability to predators and the distribution of tadpole species in an Amazonia savanna.

The vulnerability of six tadpole species to invertebrate and vertebrate predators was determined in the laboratory and compared to their natural distribution to investigate the effect of predation on tropical tadpole assemblage organization. Tadpole and predator distributions were determined in 40 aquatic sites in a savanna area in Central Amazonia. Ontogenetic differences and relative prey vulnerability in choice tests were evaluated. Prey impalatable preys to fish were palatable to invertebrates. Prey vulnerability varied as a function of the availability of alternative prey. There was a significant relationship between the experimental mean survival of tadpoles and the distribution of predators in aquatic sites. Invertebrate and vertebrate predators may limit the distribution or change relative abundance of tadpole species through differential predation.

MAGUIRE, LYNN A. Duke University, Durham, NC 27708-0328, USA. Desired future forest conditions for the Chattooga River watershed.

The research objective for this project was to elicit and analyze public values for conflictual resource management decisions. The practical objective was to guide ecosystem management for the Chattooga watershed in the southern Appalachians. Through interviews, written responses, and group meetings I gathered data on (1) goals different parties are pursuing; (2) criteria they use to evaluate whether those goals are being met; and (3) means by which they might be achieved. Meetings with Forest Service employees elicited two-thirds of the topics eventually mentioned by any respondents. Efforts made to contact people who do not usually comment on forest management yielded unique information on hunting and wildlife, but no common topics were unique to this "silent" group. Water quality stood out for consensus on both its importance and the necessity of restricting activities to protect streams. Other topics (e.g., "hands-off" vs. active management) showed more potential for conflict, but even these may not be as polarized as they seem. Many respondents believe the watershed is large enough to accomodate a variety of uses. Some showed an acute awareness of contradictions in their own views (e.g., free access to all areas but at the risk of resource damage). Many apparent conflicts stem from increasing human populations, a source of anxiety for many respondents.