real data from a series of Swedish and at least one U.S. catchment, we illustrate the potential consequences of changes in forest cover on local and regional scales. Changing forest cover to modify the balance between runoff and evapotranspiration has hitherto unrecognized policy consequences. Here, we argue these consequences are not adequately recognized either in current legislation such as the Water Framework Directive, nor in the current discussions about payment for ecosystem services.

Establishment of hydrometeorological stations in national power corporation-managed reservations. Exconde, A., Daño, A., Atega, P., Castillo, J., Garcia, D. (*Ecosystems Research and Development Bureau (DENR), Philippines; angelitoexconde@yahoo. com.ph; tonydanolb@yahoo.com; pcatega@yahoo.com; alan536@yahoo.com; digsgarcia@yahoo.com*).

This study endeavors to establish hydrometeorological stations in National Power Corporation (NPC)-managed reservations to acquire hydrologic measurements, specifically rainfall, wind, and temperature, for hydrometeorologic monitoring. Collected data are important for hydrologic research since the climate and weather of an area profoundly influences most hydrologic processes. The NPC, the Philippines' largest energy producer in Mindanao, is dependent on hydrologic processes to produce energy, and thus needs reliable hydrometeorologic data to effectively plan and implement the integrated conservation and management practices needed to achieve sustained forest and other natural and agricultural resources. Mini hydrometeorological stations containing complete sets of calibrated automatic weather monitoring instruments and other manual instruments like 8-inch standard rain gauge, evaporation pan, and anemometer have been fabricated and installed in 11 major watersheds around the Philippines to measure and collect hydrometeorological data. The instruments were tested, and collected data were tested for correctness and accuracy. Skills enhancement training workshops in proper handling, collection, recording, and analysis of data have been conducted to train the station staff. The data for rainfall, wind, and temperature are then stored in the NPC Database System. This study can serve as a model for future studies on hydrology.

How green are forest fragments inserted into tropical agricultural landscapes? implications for ecosystem services provisioning. Ferraz, S., Ferraz, K., Cassiano, C. (*University of São Paulo, Brazil; silvio.ferraz@usp.br; katia.ferraz@usp.br; carla_cassiano@hotmail.com*).

Tropical forests play an important role regarding ecosystem services related to biodiversity, water, and nutrient cycling in such dynamic landscapes. Historical processes of deforestation culminate on native forest at different landscape structure and quality. We assessed historical land-use changes (1962–2008) at southeast region of Brazil using aerial photographs. Digitizing and parameters calculation were performed in ecological units based on historical forest polygon map overlays. Using LUCAT (Land-Use Change Analysis Tools), Forest dynamics were assessed by forest change curvature profile (FCCP) and forest change rate (Q). Landscape structure was assessed by neighborhood, proximity, and contiguity indices. Results showed that natural forests have increased from 8% to 16%, but besides that, transition matrix showed that old forests are being reduced while new areas are being regenerated. Historical analysis showed that current forest remnants are a result of different processes of spatial and temporal dispersed deforestation and regeneration. Different forest ages, forest dynamic processes, and current landscape structure together reveal a mosaic of forest patches under different conditions, implying a potential gradient of performance on ecosystem services what could not be represented by a single color fragment on a map, since only 25% of patches were considered able to fully perform ecosystem services.

Study of the tropical Sudanian area's major agroforestry landscape patterns involvement in carbon sequestration balance in Togo. Folega, F., Zhang, C. (*Beijing Forestry University, China; ffolega@yahoo.fr; zcy_0520@163.com*), Wala, K., Batawila, K. (*University of Lomé, Togo; kpwala75@yahoo.fr; batawilakomlan@yahoo.com*), Zhao, X. (*Beijing Forestry University; bfuz@163.com*), Akpagana, K. (*University of Lomé, Togo; koffi2100@gmail.com*).

This research was aimed at estimating total carbon stock in the tropical Sudanian zone agroforestry system of Togo. Physical measurements of trees (*Adansonia digitata, Parkia biglobosa, Sterculia setigera, Vitellaria paradoxa,* and fallows) in major agrosylviculture parklands were achieved by random quadrat sampling based on Braun-Blanquet concept. The total carbon stock was computed as the arithmetic mean of the values derived from two allometric equations. Results revealed that the total carbon stock of the agroforestry parkland was 72.8 t/ha whereas *A. digitata, P.biglobosa, S. setigera,* and *V. paradoxa* trees species accumulate 31.41 t/ha, 20.44 t/ha, 8.48 t/ha, and 4.02 t/ha, respectively. The *A. digitata* parkland has shown the highest total carbon stock (15.91±12.9 t/ha), whereas the lows values occurred in fallows landscapes (0.24±0.06 t/ha). Among the five parklands of the study zone, high carbon stock accumulated in the DBH classes ranging from 0–10 and 30–40. The agroforestry system landscape in the study is a carbon pool, as it has a significant capacity to uptake and stock carbon. To realize the agroforestry and wooded vegetation sector's potential in Togo, the carbon mitigation should be integrated within the Clean Development Mechanism (CDM) carbon trading system of the Kyoto Protocol.

Fluvial water quality and forest cover in southern Brazil. Fritzsons, E., Parron, L. (*EMBRAPA, Brazil; elenice.fritzsons@embrapa.br; lucilia.parron@embrapa.br*), Mantovani, L. (*Federal University of Paraná, Brazil; lem@ufpr.br*), Wrege, M. (*EMBRAPA, Brazil; marcos.wrege@embrapa.br*).

In natural environments, water quality depends on physical and biological factors such as climatic, geologic, pedologic, and vegetation. In addition to natural factors, the various human activities affect the aquatic environment and modify the water composition parameters. The present study was carried out at the Fervida a Karst watershed, which covers an area of 13 km² and is located over the Southern Brazilian Plateau in the State of Paraná, Brazil, 900 to 1 200 m over sea level. The natural vegetation corresponds to the original area of subtropical Araucaria forest (*Araucaria angustifolia*). Agricultural activity consists of small-holder crops of vegetables, mainly of horticulture, maize, and beans. The regional climate is Cfb. The aim of this study is to analyze the impact caused by land use to the river water quality, especially considering the pollution by nitrates, and verify the protection provided by the riparian forest to the fluvial water. A land use study will be done through the interpretation of aerial photographs and satellite images. Forest fragments in the landscape will be evaluated. Meanwhile, water samples will be collected at five controls zones of the basin. Preliminary investigations show that forested areas have better water quality than those that drain from agricultural areas.

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