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Three Decades Of Forest Cover Change In The Americas Evaluated Using The Geocover And MDGLS Data Sets

The need to analyze forest cover change at continental to global scales using fine spatial resolutions data sets has been recognized in many Earth science strategic planning documents. As an effort to meet this need we propose to produce a consistent forest cover change record for the American continents. Specifically, we will:
- Map the spatial extent of forest cover of the American continents for four epochs centered around 1975, 1990, 2000, and 2005 using NASA's three GeoCover data sets and the forthcoming Mid-Decadal Global Land Survey (MDGLS) data set;
- Quantify forest cover and fragmentation change between the four epochs;
- Evaluate the post-change transitions of mapped changes, which will allow better understanding of both the driving forces and the consequences of those changes.

While previously there were many "insurmountable" challenges to such an endeavor, we believe a number of advances have made it feasible now, including the availability of the GeoCover and MDGLS data sets, our ability to create atmospherically corrected reflectance products, much improved classifiers, automated training data collection method, the availability of ultra-fine resolution datasets and much lower computational costs. Completion of this project will represent a major step forward in achieving NASA's goal of "analyzing land-cover change through the last decades". Results from this study will constitute NASA's contribution to a number of national and international programs, including the U.S. Climate Change Science Program, GOFC-GOLD and the joint IGBP/IHDP Global Land Project. The derived data sets will be highly valuable for carbon and energy balance studies, hydrological modeling, biological conservation, and many other earth science applications.