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Contribution to Studies of LCLUC in Northern Eurasia

Understanding the human impact on land cover is fundamental to informed decision-making to address global change and to ensure sustainable development. The science objective of the proposed project is to improve the understanding of broad continental-scale patterns of land-cover change and assess socio-economic drivers and environmental controls that have significant impacts at time-scales of interest for policy decisions (several years to several decades). An additional organizational and outreach objective is to engage a broader community of scientists in the development of methods and data sets for studies of land cover and land-use change and for validation of coarse-resolution land cover products. The proposed project builds on established professional connections and contributes to two ongoing studies of land cover and land-use change. The first study is based at the Geomatics Department of Humboldt-Universität zu Berlin (Prof. Dr. Patrick Hostert, PI) and the second one is at the Siberian Center for Environmental Research in Tomsk, Russia (Dr. Igor Okladnikov, PI). Combined with selected sites established as part of NELDA (Northern Eurasia Land Dynamics Analysis) project (OSU, Dr. Olga Krankina, PI), the resulting network of sites will span a wide gradient in environmental and social conditions enhancing greatly the capabilities of the NELDA network of sites. The focus of the proposed study is cross-site comparison and synthesis of results from individual sites and identification of mechanisms of land cover and land use change that can be generalized over large spatial domains. This research will inform the future development of global models of land cover change by assessing the predictive power of variables over wide environmental and social gradients. We will also investigate the potential of multi-date trajectory approach and integrated use of fine and coarse-resolution data to characterize important land-cover change processes at test sites. The proposed work directly addresses the LCLUC Key Science Questions and advances Major Strategic International Programs/Projects Supported by the LCLUC Program, including GOFC-GOLD, Global Land Project, and NEESPI.