

NELDA

Northern Eurasia Land Dynamics Analysis

Monitoring and Validating the Distribution and Change in Land Cover across Northern Eurasia

1. GOALS AND OBJECTIVES

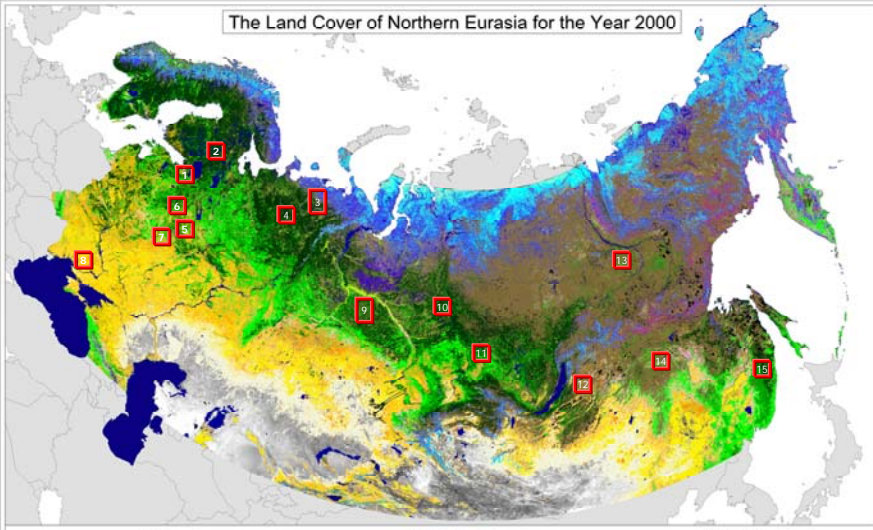
- Characterize land cover and its change across boreal and temperate Northern Eurasia
- Develop methods, data, and collaborations needed to monitor future changes

- Establish a network of test sites
- Cross-compare and validate coarse-resolution land cover products
- Develop methods for continental mapping of vegetation disturbance
- Produce a new, updated land cover map for Northern Eurasia based on MODIS data

*Agreement among global land-cover products: GLC2000, MODIS, IGBP-DIS, and UMD based on a generalized legend
(Image credit: M. Herold & C. Schmullius, GOC-GOLD Land Cover Implementation Team Project Office).*



2. STUDY REGION AND TEST SITES



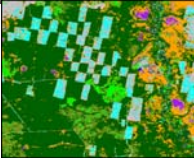
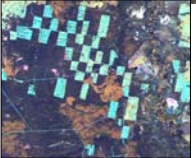
Location of test sites, types of land-cover change and disturbance

- St. Petersburg region** - Timber harvest, peat mining, agricultural abandonment, urban growth
- Karelia** - Timber harvest, fire, agricultural abandonment
- Komi-North** - Fire, reindeer grazing, oil exploration, permafrost melting
- Komi-South** - Fire, timber harvest, agricultural abandonment
- Moscow region** - Timber harvest, bark beetle outbreak, urban growth
- Tver region** - Timber harvest, agricultural abandonment, urban growth
- Kaluga region** - Agricultural abandonment, timber harvest, urban growth
- Ukraine - Carpathian region** - Timber harvest, agricultural abandonment and fragmentation, urban growth
- Tomsk region** - Timber harvest, fire, peat mining, oil exploration
- Krasnoyarsk region** - Yenisey valley - Fire
- Krasnoyarsk region** - Middle taiga, - Siberian silkmoth outbreaks, fires, timber harvest
- Buryatia/Chita** - Fire
- Yakutia** - Fire
- Amur region/China** - Fire (China and Russia), afforestation (China only)
- Khabarovsk/China** - Fire, timber harvest

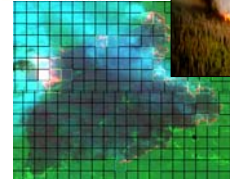
(Map was created at EC JRC as part of GLC 2000 project, Bartalev et al. 2003)

4. MAJOR TYPES OF DISTURBANCE AND LAND-COVER CHANGE

Timber harvest



Fire



Vegetation Regrowth



Insect outbreaks



Urban Growth



4. OUR DREAM TEAM

➤ US

- Oregon State University - Olga N. Krankina
- NASA Goddard Space Flight Center - Jeff Masek and Jeff Morisette
- Boston University - Mark Friedl and Curtis Woodcock
- University of Maryland - Ivan Csiszar and Guoqing Sun
- USDA FS Pacific Northwest Research Station - Warren Cohen

➤ Eurasia

- Space Research Institute, Russian Academy of Sciences, Moscow - Eugeny Lupian, Sergey Bartalev, Dmitry Ershov
- Center for Information Technologies Development, Moscow - Alexander Maslov and Natalia Vandysheva
- Institute of Monitoring of Climatic and Ecological Systems, Tomsk - Evgeny Gordov
- V.N. Sukachev Institute of Forest, Krasnoyarsk - Slava Kharuk
- Institute of Biology, Komi Scientific Center - Vladimir Elsakov
- Institute of Sustainable Development of Ukraine - Mykola Zalugin