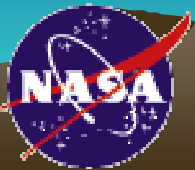


A satellite is shown in orbit above a globe. The globe displays land cover data with various colors: green for forests, yellow for agriculture, and brown for bare land. The satellite is connected to the globe by a thin line.

# NASA Contribution to **NEESPI**

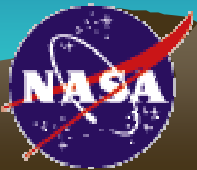
Garik Gutman

Land-Cover/Land-Use Change  
Program, NASA Headquarters



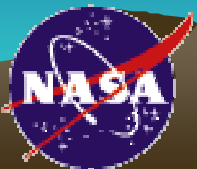
# Northern Eurasia Earth Science Partnership Initiative

- International, multi-agency program for Earth science research in northern Eurasia focused on ecosystem-climate interactions
- Almost a quarter of the global land, representing most of the existing geo-botanic zones except for tropical
- Challenges: many countries, many languages, different mentalities, remote locations
- Advantages: plenty of data, talents; existing scientific infrastructure



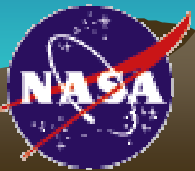
# NEESPI's Functions:

- Coordinate ongoing scientific activities in Northern Eurasia by international teams; facilitate scientific networking
- Expedite regional data exchange; provide assistance with logistics in international scientific collaborations
- Match scientific research partners from North America, Europe and Japan with regional NEESPI in-country scientists
- Utilizing corporate knowledge and scientific infrastructures in the region; involve young talents in the scientific regional research



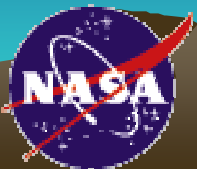
# Opportunities

- Existing infrastructure for in situ observations
  - Data-rich geographic area
    - Legacy of the USSR (in a positive sense) - century-old science, observational networks and long-term data records
    - Data rescue issues
- EU, Russia, China, Japan: Active contributors in the Earth research from space
  - Long history of remote sensing (including classified/declassified information)
- New age of communications
  - Opportunities in fast electronic communications and data exchange
- Open interactions
  - Interactions with in-country scientists are really possible as compared to 15 years ago



# NASA for GTOS/GOFC-GOLD

- The purpose of GOFC-GOLD is to improve the quality and availability of observations of forests and other vegetation cover at regional and global scales, and to produce useful, timely and validated information products from these data for a wide variety of users.
- NASA contributes to GOFC-GOLD by
  - Supporting regional network activities
  - Supporting science projects
  - Supporting development of datasets
- NASA has been supporting the NERIN since its inception



# NASA GOFC Projects

- LCLUC Pilot Projects
  - Biomass Burning
  - Landcover Dynamics
  - Reindeer Mapper
  - Biodiversity in Eastern Europe
- Carbon Cycle/LCLUC Processes
  - 9 projects funded (started Jan '05)
- Water Cycle/LCLUC Processes
  - 4 GOFC-relevant projects funded (start June '05)



Total about \$3.5 M



# Carbon Cycle Science and LCLUC

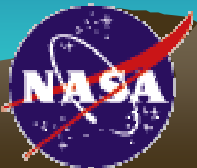
## Funded NEESPI Projects (started January, 2005)

### BOREAL (Partners: Russia, China and Germany)

- Modeling the Carbon Dynamics of the Eurasian Boreal Forest
- An Integrated Analysis of Flux Tower Data, Remote Sensing Data and Biogeochemical Modeling
- Comparative Studies on Carbon Dynamics in Disturbed Forest Ecosystems
- Quantifying Effects of Fire Intensity/ Severity/ Burning Conditions on Carbon Stocks and Exchanges
- Impacts of Lake and Wetland Extent on the Regional Carbon Balance
- Land-Use and Land-Cover Dynamics of China

### NON-BOREAL (Partners: Ukraine, IIASA, Kazakhstan, Uzbekistan, Mongolia)

- Carbon, Climate and Managed Land in Ukraine: Integrating Data and Models of Land Use
- Quantifying the Effects of Land Use Change on Carbon Budgets in the Black Sea Region
- Northern Eurasian Carbon-Land Use-Climate Interaction in the Semi-Arid Regions



About \$1.7 M per year for 3 years

# Hydrology and LCLUC

Funded NEESPI Projects (start in June, 2005)

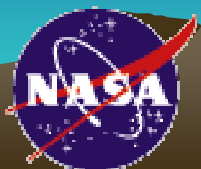
## Arid (Partners: Russia, Kazakhstan, Uzbekistan, China)

- Assessing the vulnerability of the Eurasian semi-arid grain belt
- Ecological Monitoring in Semi-Arid Central and West Asia
- Linking Biophysics and Socio-economics for Addressing Water Vulnerability in Central Asia

## NON-Arid (Partners: Ukraine)

- Exacerbation of Flooding Responses Due to LCLUC in Carpathian region

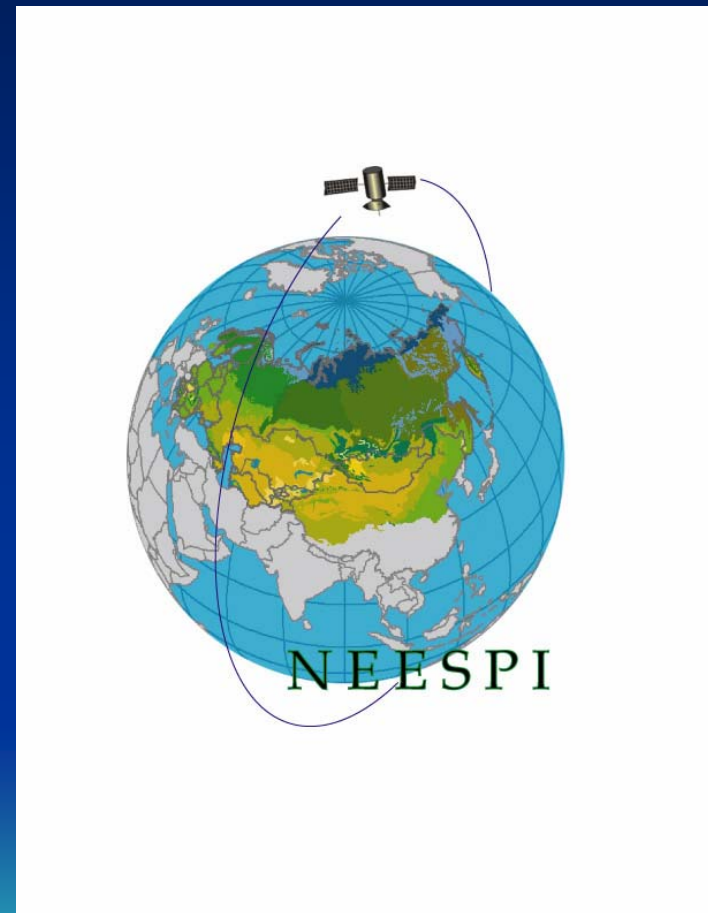
About \$0.8 M per year for 3 years



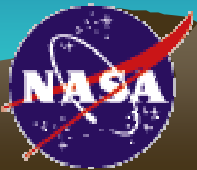


# Data and Networks in Northern Eurasia

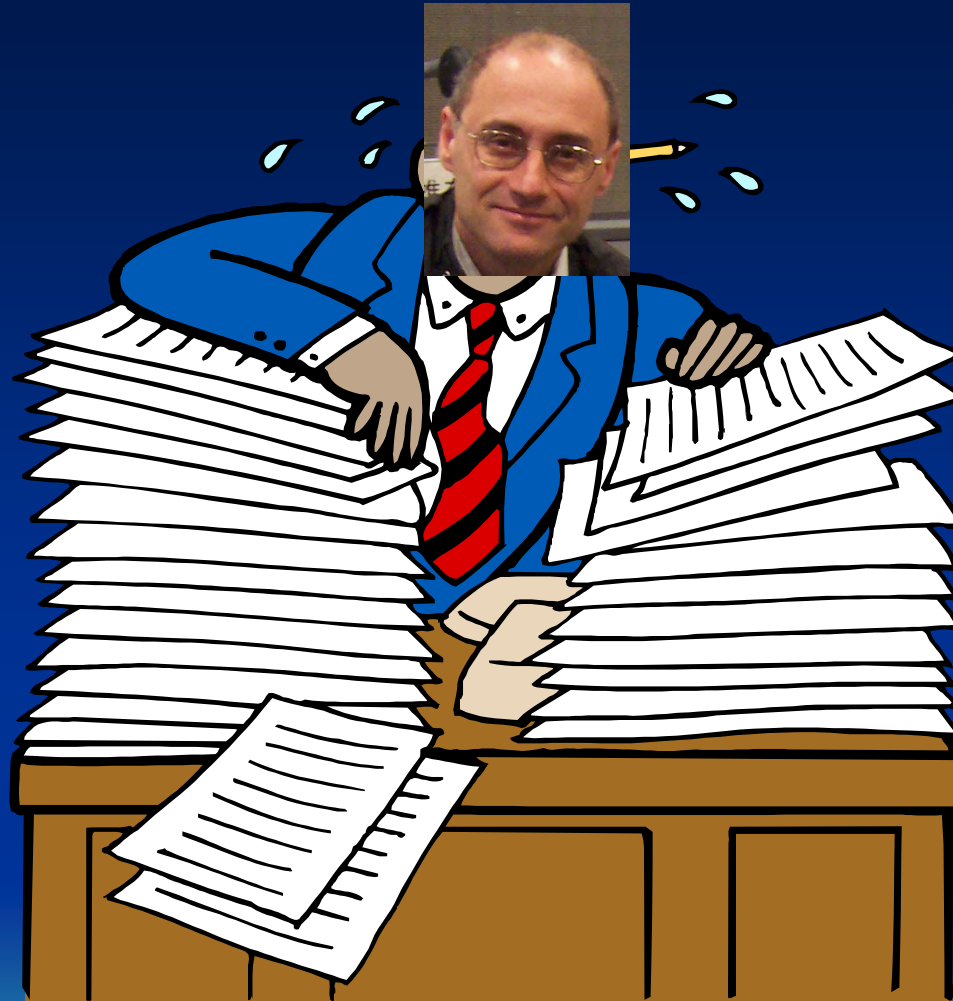
- Boreal zone
  - Russia
  - China
  - Scandinavia
    - Finland
    - Sweden
    - Norway
- Non-boreal zone
  - Ukraine
  - Black Sea region countries
    - Georgia
    - Bulgaria
    - Romania
    - Turkey
  - Central Asia
    - Kazakhstan
    - Uzbekistan
    - Kirgizstan
    - Mongolia



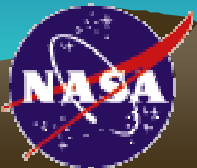
Received over 173 LCLUC pre-proposals. Now under reviewing



~50 full proposals: due Aug 1

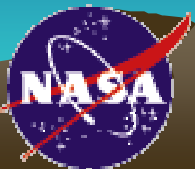


NEESPI: 30 pre-proposals=> 10-15 full proposals => 5-7 selections.



# International Polar Year 2007-2008

- Potential GOFC Contributions to IPY
  - Climate change interactions with LCLUC at forests-tundra margins
  - Energy exchange in boreal ecosystems
  - Land use in sub-Arctic zone



谢谢

спасибо

Thank you!

