Socioeconomic Benefits and Impacts Assessments

Wildland Fires Team Meeting
Feb. 28 – March 2, 2017
The Program conducts impact analyses of selected projects to assess the value and benefits (in social and economic terms) from uses of Earth obs. to inform decisions and associated actions.

» Strategically important for scientific community to have skills & abilities (or know how to access them) to document and communicate impacts

» Part of effort is bridging the social sciences and economic fields with the Earth science and physical science fields.
Terminology Transfer in Interdisciplinary Work

- **Economics & Policy Analysis**
  - Marginal Cost
  - Shadow Price
  - Discount Rate
  - Contingent Valuation
  - Cobb Douglas Function
  - Revealed Preference
  - Marginal Utility
  - Price Elasticity
  - Net Present Value

- **Earth Science, Remote Sensing, GIS**
  - Spectroradiometer
  - Synthetic Aperture Radar
  - Normalized Difference Vegetation Index
  - Nearest Neighbor
  - Supervised Classification
  - Passive Microwave
  - Backscatter
  - Orthorectification
  - Data Assimilation
A Primer:

Inform the Earth science community and project teams about the language, key principles, techniques, and applications of socioeconomic impact analyses.

Available on Applied Sciences website
Socioeconomic Impacts

Impact Assessments on Applications Projects

Conducted ~10 impact assessments

Support a collaboration between Economist & Earth Scientists on the societal value of a climate observing system

As augmentations to existing grants, the Program sponsored impact analyses to assess the value and benefits (in social and economic terms) from uses of Earth observations:

» 3 Water Resources Projects
» 2 Health & AQ Projects
» 4 Wildfires Projects

ROSES-15 A.45: Socioeconomic Benefits

Proposals to develop, implement, and manage a program of activities for the articulation of socioeconomic benefits of Earth science applications. Award is for a consortium of organizations. Two parts:

» Impact Assessments: Methods & Examples
» Capacity Building: Familiarity in Earth Science community on terms & concepts

Selection:
Valuation of Applications Benefits Linked with Earth Science Consortium (VALUABLES)

PI Organization: Resources for the Future

PI: Yusuke Kuwayama
(Replacement for Molly Macauley)
# Socioeconomic Impacts

## Impact Assessments on Wildland Fire Projects

| Socioeconomic Impact Analysis of Linking Remote Sensing and Process-Based Hydrological Models to Improve Post-Fire Remediation Efforts | Wildland Fire Behavior and Risk Forecasting |
| Using Earth Observations to Assess the Socioeconomic Impact of Human Decision Making During the Suppression of a Wildland Fire | RECOVER |
| Evaluating the Socioeconomic Impacts of Rapid Assembly and Deployment of Geospatial Data in Wildfire Emergency Response Planning | Process-based hydrologic models; GeoWEPP |
| Quantifying Potential Economic Benefits of Incorporating Gridded Fuel Moisture and Weather Data into Wildland Fire Decision Support in the Northern Rocky Mountains | TOPOFIRE |
Kimberly Rollins
Professor, Center for Resource Economics
Department of Economics
Univ. of Nevada, Reno
## Project Portfolio: 9 Phase II Projects

### NASA ESD Applied Sciences: Wildland Fire Phase II (ROSES-11 A.35)

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University of Nevada, Reno

Wildland Fire Behavior and Risk Forecasting

RECOVER

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TOPOFIRE