Remote Sensing at KPBS

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Past/Continuing Research

- Estimation of mass/energy fluxes
- Spatial patterning of Reflectance and Vegetation Indices
- Spatio-temporal variation in spectral response
Observations

Ground segment
Acquisition, processing, storage, & archiving

Retrieval of biogeophysical variables

Change attribution
Change assessment

Change detection
Change quantification

Information for Monitoring

Assimilation of current observational data streams
Definitions of nominal trajectories and estimates of uncertainty
Spatio-Spectral-Temporal analysis

Questions & Hypotheses
Landscape Structure

Landuse

Climate

Topography

Landscape Structure

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Sample Landscape Trajectory
Sampling
NDVI Landscape Trajectory

Watershed 002c

DOY 365
DOY 100
DOY 118
DOY 121
DOY 322
DOY 331

1997 (Dry, Burned)
1998 (“Normal”, Not Burned)
1999 (High Average, Burned)
Canonical Bivariate Plot

May
Canonical Bivariate Plot

August
Hyperspectral Analysis

- High spectral resolution data
- Retrieval of specific biophysical information
  - Pigments
  - Nutrient Status
Chl Retrieval
J. Gao Dissertation
Findings

In-situ Data

Aircraft Data
Linkage to LTER
Proposed Project
Grazing Model/Canopy Nutrients
Project Outline

In-Situ Radiometry

Aircraft Overflights

Tracks of Bison W630

Nutrient Maps

Observed Grazing Patterns
Aircraft Overflight and Field Radiometry

July, 2005
Bison Grazing Patterns

Tracks of Bison W630

- Grazing boundary
- Treatment
- 4/19/06 - 5/24/06
Potential Contribution

- Nutrient Distribution (N,P,Na)
- Pigment Distribution (Chl, Minor pigments)
- Grazing Models (Predictive)