

Land Report Back

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MODIS Issues

- **Science and Applications reviews presented on Day 1**
 - Additional results presented on forest monitoring by Hansen, Huete and Myneni – fused MODIS/Landsat products – Tropical forest phenology
- **Testing of C5 code underway – start production end of March 06**
 - LAADS Distribution System being used for test data distribution
- **DAAC Product Reviews (product status and distribution stats)**
 - NSIDC Snow and Ice, Jan 14
 - Requested team/community comment period for the panel report
- **EOS DIS Evolution – moving in a good direction**
 - MODAPS Production, LAADS Distribution -supported by the science team
 - USGS MODIS Long Term Land Archive planning underway
 - Science Team welcomes this institutional commitment to archiving land data
 - USGS to develop LT archive user model – what functionality is needed
 - Strawman proposal of data types to be archived suggested by team
 - Individual archived products to be determined by measurement teams
- **Science Outreach Issues**
 - MODIS / ASTER Book
 - IGARSS '06 Community Land Presentation (Huete)
 - Montana Workshop

Long term global monitoring of vegetation variables using moderate resolution satellites.

Aug 8-10, 2006

University of Montana

- The international workshop will focus on:
 - long-term continuity of global vegetation data records
 - multi-sensor approaches to vegetation monitoring
 - global vegetation monitoring applications to the GEOSS “Societal Benefit Areas”
 - strategic planning for future sensors
- Objective: bring researchers together to advance these themes and formulate recommendations for CEOS members and GEOSS.



Additional Validation issues

- Workshop: Validation of Long Term Vegetation Index Records
 - Attached to Montana workshop
 - Possibly Monday, Aug. 7, 2006
- Special issue due out in 3-4 months
- Growing season 2006 campaigns should complement NACP intensives
- LAI inter-comparison: paper in special issue, sensitivity analysis starting (Garrigues)
- Land Cover “best practices” document will be published through CEOS

Land Measurement Teams

- An on-going process to move from missions to measurements
- Land Measurements spread across focus areas
 - Hydrology Focus Area needs to develop a land measurement short-list – we can then explore the cross Focus Area measurement synergies
- Land community to generate ESDR white papers prior to the recompetete – resume LMT development after recompetete
- First round will focus on Systematic Measurements
- Exploratory Measurements identified but not discussed
 - ET – Surface Resistance
 - Vegetation Structure
 - Soil Moisture
 - Canopy Chemistry
- Implications for Future Missions – Decadal Survey

White Papers Describing a Recommended ESDR/CDR

1 – 5 pages to address, in the order specified below:

- 1. Name / brief description of recommended Earth System Data Record (ESDR) or Climate Data Record (CDR)**
- 2. List of all authors of White Paper**
- 3. Scientific rationale and importance of measurement and expected end uses (both basic and applied science)**
 - what are the science questions or applications drivers that the product will be used to address?
 - why is the product important to a NASA Earth Science Focus Area(s)?
 - which user communities need the product?
- 4. Scientific requirements for the measurement (background)**
 - what are the documented or implied requirements for the product?
 - what accuracy, precision, and uncertainty are needed?
 - what are the needed temporal and spatial resolutions?
 - what is the required length of record?

White Papers Describing a Recommended ESDR/CDR

1 – 5 pages to address (cont.):

5. Approach to generating the measurement (i.e., data product)

- Feasibility, reliability of measurement
- Algorithm(s) / concept to be applied and brief description
- Measurement / algorithm heritage and maturity
- Required inputs products and their traceability (including dependencies on other products)
- Processing / reprocessing requirements
- Calibration / validation
- Product accuracy, consistency, spatial and temporal resolutions, precision in terms of satisfying science requirements

6. Intended sources for the measurement

- which instruments will be used?
- what in situ data, if any, is needed?

7. Necessary supporting activities, tasks

8. Relationships to other products and programs (of other agencies, international, etc.)

9. Key citations (<5; not a literature review)

Volunteers to Coordinate White Paper Development

- **Snow Cover:** D. Hall et al
- **Albedo:** C. Schaaf, J. Privette, et al.
- **Fire:** C. Justice, D. Roy, I. Csiszar, et al.
- **VIs:** A. Huete, C. Tucker, F. Hall, et al.
- **Land Cover and Change:** J. Masek, T. Loveland, M. Friedl, J. Townshend, E. Brown de Coulston
- **Temperature, Emissivity:** S. Hook, Z. Wan, et al.
- **LAI, fPAR:** R. Mynemi, R. Nemani, S. Running, et al.
- **GPP/NPP:** S. Running, R. Myneni, R. Nemani, et al.
- **Surface Reflectance:** E. Vermote, N. Saleous, et al.
- **PAR/Incident Solar Radiation:** S. Liang, R. Pinker
- **Phenology:** M. Friedl, A. Huete, R. Myneni
- **Surface Hydrology, preliminary list (e.g., soil moisture):** E. Wood

Expected Approach:

- Persons named above will act to include other members of the community in the development of their White Paper, as appropriate. Expertise on all relevant sensors/missions and end uses (e.g., modelers) is desired. **Author list is expected to expand and evolve.**
- **First name** listed for each product **will take the lead** in initiating the White Paper.

White Paper Schedule

- **Start Immediately**
- **Deliver draft White Papers by**
 - **March 24, 2006**
- **Post on web ~April 1, 2006; invite community comment**
- **Refine / commit after EOS re-competition completed**

VIIRS

- Land EDR evaluation in progress – VIIRS land team workshop on Tuesday pm
- VIIRS instrument challenges but land is optimistic
- Good dialogue ongoing with NGST on algorithm enhancement / improvements (Alain Sei - lead)
- Land PEATE underway – installing early versions of science code for EDR's
- Land PEATE collaborating with other PEATEs
- Some EDR's will meet land science needs
- Land PEATE will need to generate/distribute L3 EDR's
- Land PEATE will need to generate additional land CDR's

- General Point – greater communication needed between NASA management and the science community re. VIIRS
- Thanks to Bob Murphy for keeping us briefed on NPP progress

Global Mid-Decadal Data Set

This high resolution global data set identified in our early measurement team discussions is an essential input for science and applications

- NASA/USGS initiative getting underway
- Approach Multi-source data set to extend Geocover for 04-06
 - Landsat 5, ASTER, EO1, Landsat 7 composites
 - USGS working with foreign ground stations
 - Preferable to initiate foreign satellite involvement (CEOS/IGOL)
- Need to evaluate the utility of L7 composites in different environments
- Phase 1 Acquisition underway
- Phase 2 Data Processing needs NASA budgeting 06/07
 - joint science and applications support ?
- Community oversight would be beneficial – LCLUC Science Team Meeting March
- Need distributed community capacity for generating regional Landsat Class (Landsat / ASTER) L3 data sets – free ware – community consensus processing – efforts underway with REASONS, ACCESS
- Combined use of multiple high resolution data sources

Landsat Continuity

- OSTP Landsat memo Dec 23rd
- NASA needs to move quickly to launch the LDCM
- Launch data will determine the length of gap
- Solution will be needed for the data gap beyond 2006
Mid Decadal Data Set
- Landsat 5 continued service?
 - Foreign ground stations
- Task ASTER Acquisition
- Foreign satellite data – IRS? - GEOSS provides the coordination rationale

- **General Point**
 - Increased NASA dialogue with the community needed on NASA's contribution to National GEO and GEOSS
 - For example what is GLOS ?