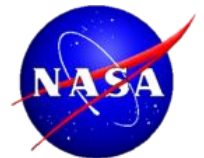

LP DAAC Status

Dave Meyer

Bhaskar Ramanchandran

MODIS Science Team Meeting
University of Maryland, College Park
May 18-20, 2011

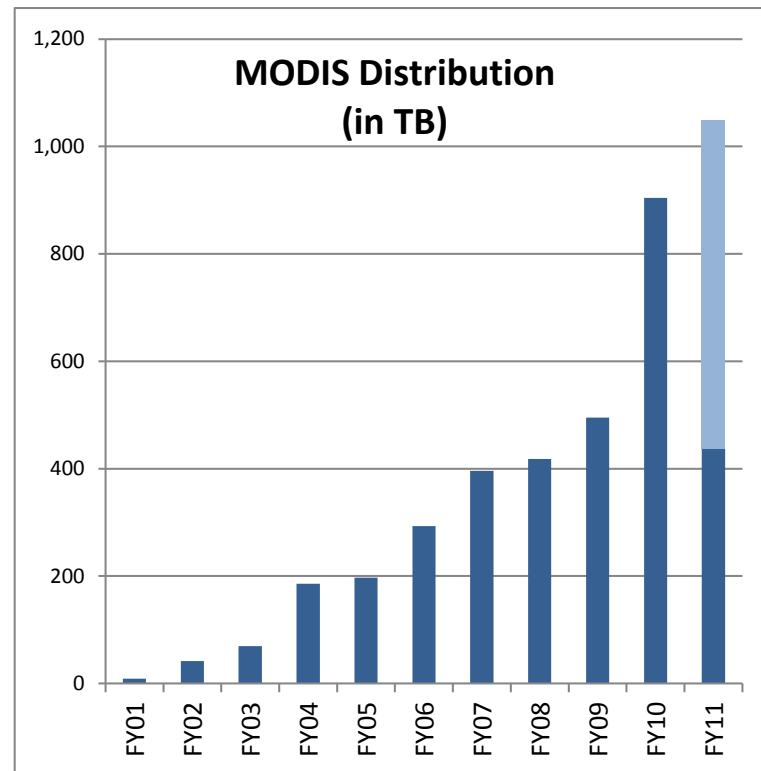
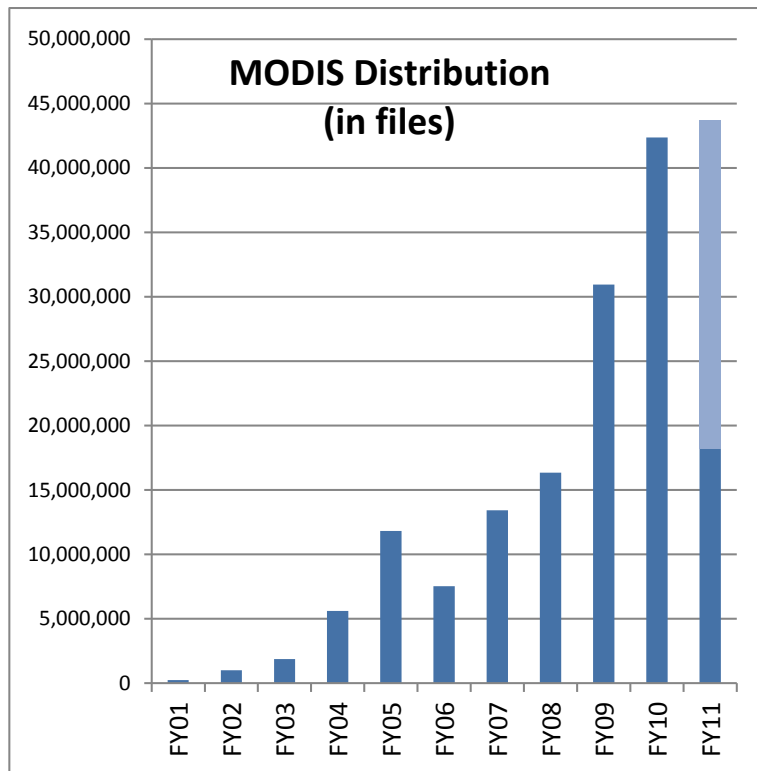


Topics

- Core MODIS Products
 - Distribution statistics
 - Product updates
- Access & Interoperability
 - Integrated client access
 - Cross-DAAC Tech Infusion
- New Products

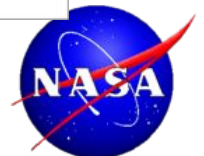
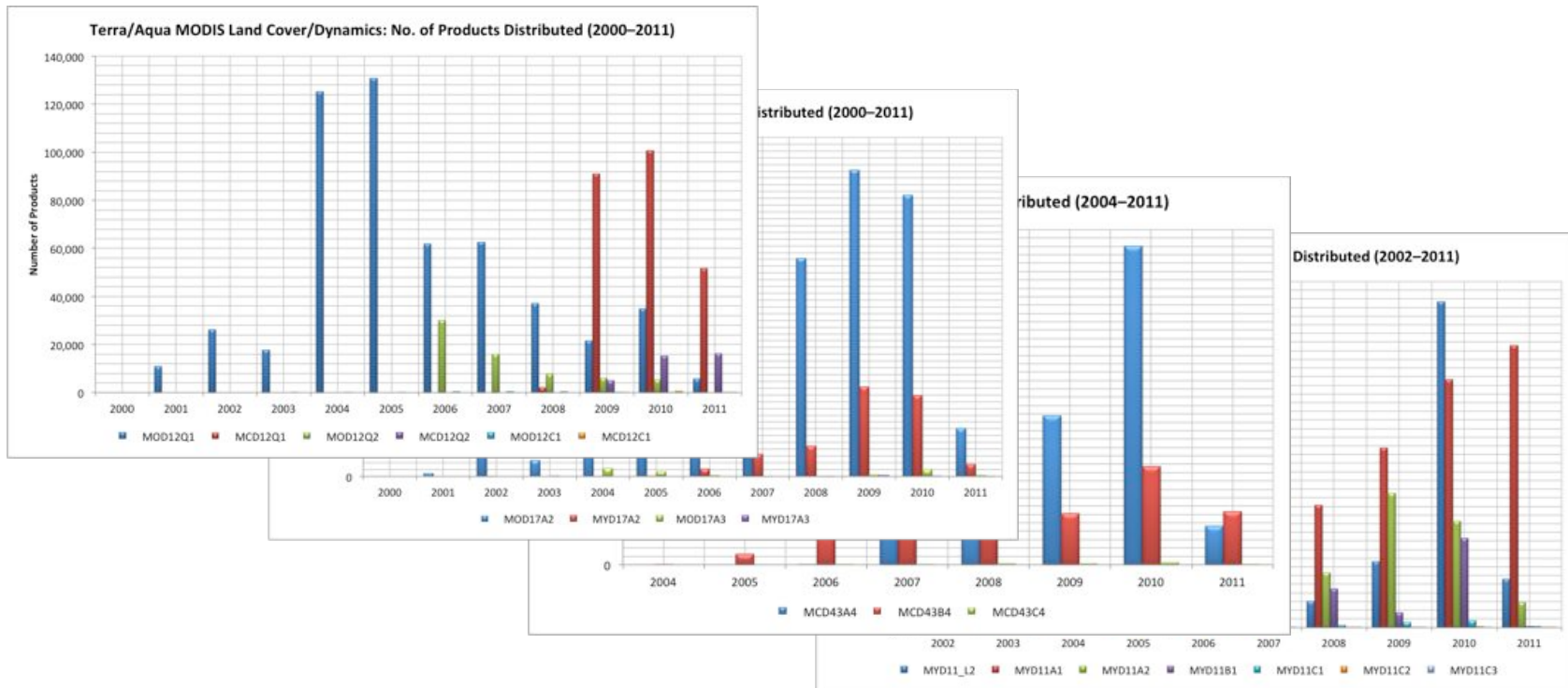
LP DAAC Science Data Distribution Trends

- Significant upward trend for MODIS distribution
 - File Distribution : **~43 Million files distributed in FY10** (37% increase from FY09)
 - Volume Distribution : **~905 TB distributed in FY10**
 - Distinct Hosts : **~26k distinct hosts distributed to in FY10**



Metrics Data

- A spreadsheet with MODIS Land products is available to team members
- Product-by-product charts are appended to this presentation
- We can provide additional metrics upon request



MODIS Archive Status

- LP DAAC currently distributes 109 Terra & Aqua MODIS products (all versions)
- MODIS data volume ~575 Tb (~26 million files)
- The most recently released product (on May 4, 2011) is MCD15A3, 4-day LAI-FPAR
- The next anticipated release is the V5 (MOD44B) VCF product
- We anticipate receiving the Montana/NTSG MOD17A2 and MYD17A2 GPP products as V51 in the near future
- We anticipate receiving MCD45A1 (burned area) as V51 in the near future
- LP DAAC has developed scripts to reconcile MODIS product archives to MODAPS



V6.0 preparations

- We have received, vetted, and installed 52 Version-6 ESDTs in the Ops mode
- We conducted an eleven-hour load performance test in October 2010 (achieved 28x ingest/archive rate)
- We are planning to conduct a more elaborate 4-day load performance test in June 2011
- We are ensuring that all other functional components to support ingest, archive, release, and distribute V6 MODIS products are ready
- EROS upgraded its WAN bandwidth by 4x
- Plan to keep V5x for some extended period of time after V60 release



Data Access & Interoperability

- Requirements & recommendations from:
 - User Working Group
 - Instrument Science Teams
 - ESDIS
 - Annual surveys
 - Cross-DAAC Tech Infusion Initiatives
 - Direct interaction with other Data Centers

Recent Data Access Enhancements

- USGS Earth Explorer
 - Primary client for LDCM
 - Enables Cross-Archive (LP DAAC, USGS Landsat, USGS LTA) data discovery and download
- NASA Reverb – successor to WIST
 - LP DAAC is a primary driver for Reverb development to ensure its users' needs are being met.
- DEM Explorer
 - Collaboration with George Mason University (GMU) to reuse software that is part of the GeoBrain infrastructure
 - Provides ASTER Global DEM user community a visual selection/download interface (OGC-based services)
 - Possibly suited to distribute MODIS products as well.

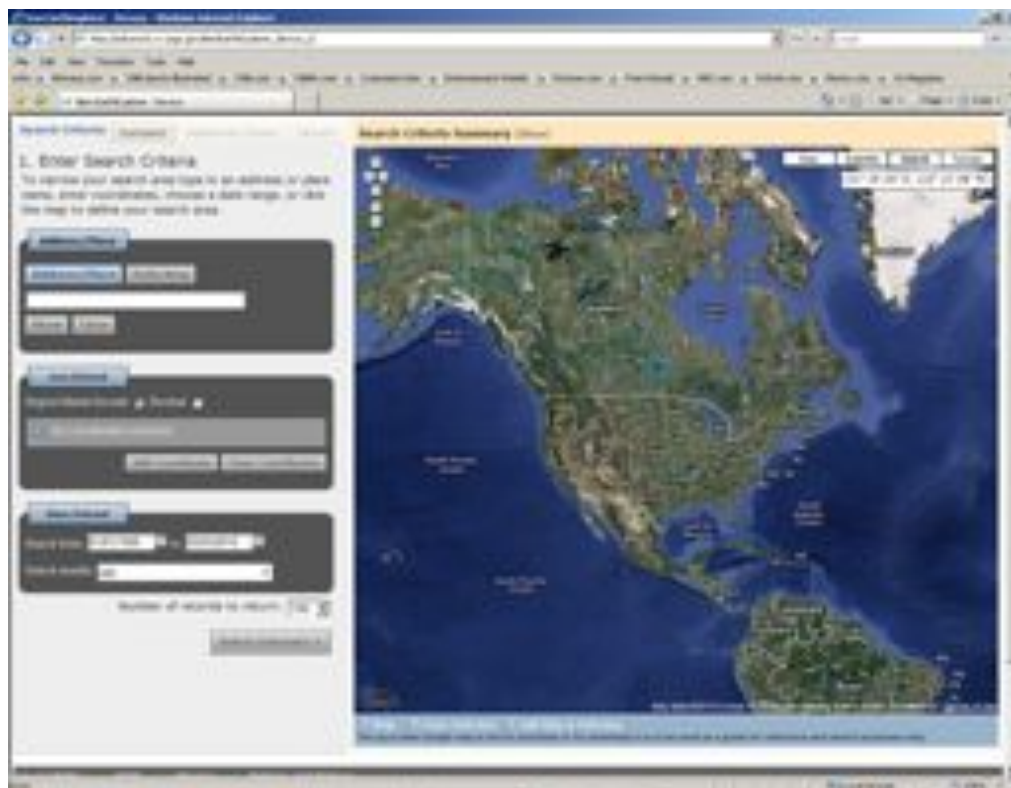
Leveraging USGS “Earth Explorer”

(NEW) Earth Explorer

- Cross-dataset search/access
- Direct download from archive
- Significant upgrade from previous Earth Explorer
- Future LDCM data access client

Earth Explorer Features

- Map viewer for viewing overlay footprints and browse overlays.
- Full Resolution Browse display capability.
- Provides KML access through Google Earth.
- User authentication service through user registration and validation routines.
- Allow multi-point polygon and point searches.
- Add on-demand products to an item selection basket.
- Supports standard product downloads.
- XML, KML, CSV, FGDC, Shape file export options.
- <http://earthexplorer.usgs.gov>



Next Generation ESDIS Search Interface: Reverb

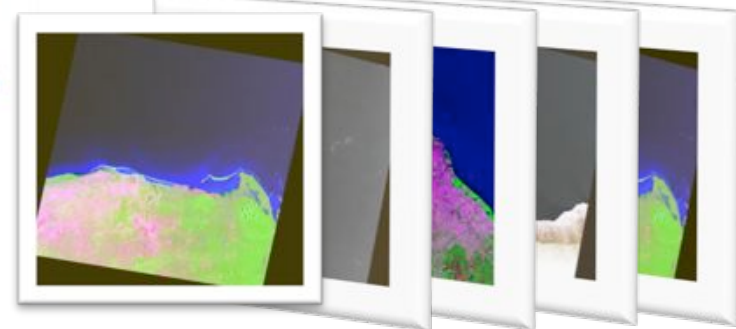


Current Reverb released May 16, features:

- Fast keyword filtering
- Ability to add entire datasets to cart to support dataset download and ordering
- Ability to apply services directly to datasets
- Temporal and spatial filtering of datasets without granule search (upcoming release)
- Multiple bulk download options (upcoming release)
- <http://reverb.echo.nasa.gov/reverb>

Future releases:

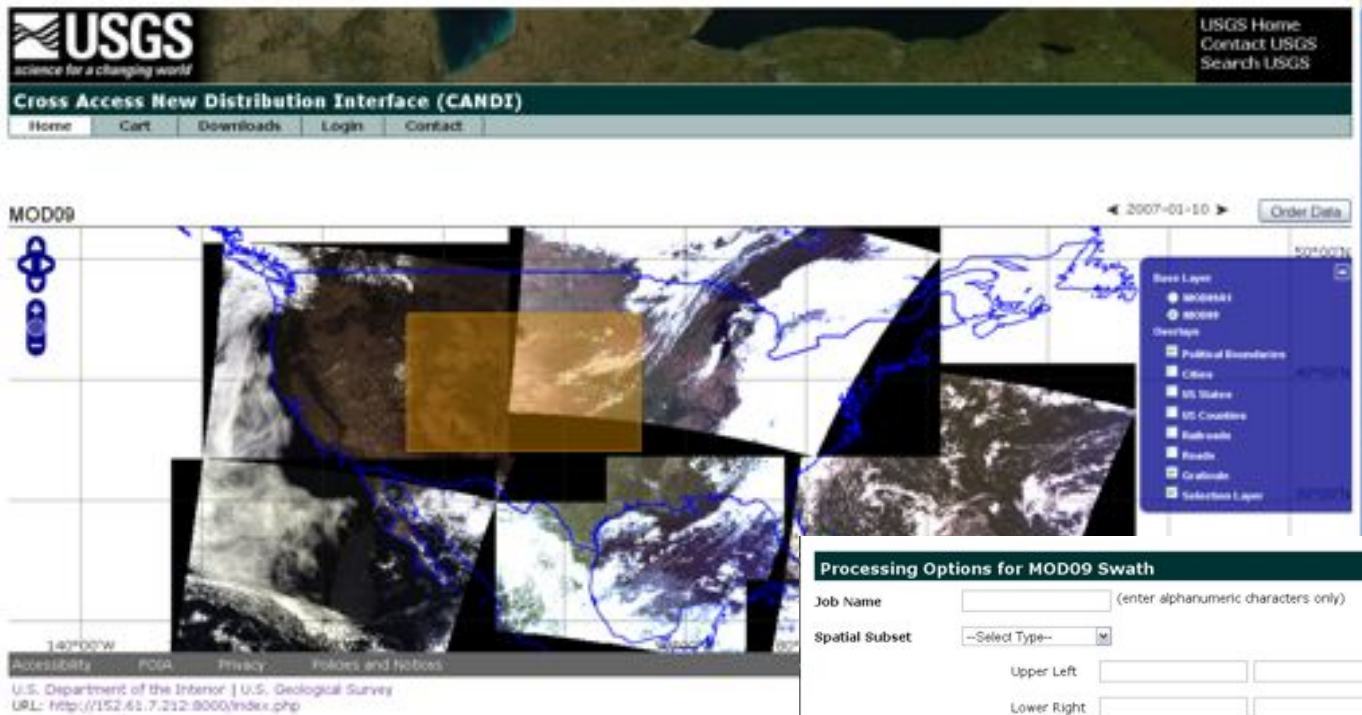
- Location-based searches
- Improved selection features (e.g., shape files, KML)
- Mosaic pivot viewer, cover flow



Cross-Data Center Collaborations

- Cross-Archive Search and Distribution
 - Objective: Demonstrate data access and processing concepts allowing visual selection and processing of data in remote archives
 - **Collaboration with MODAPS** provides LP DAAC users direct access to L1, L2 data
- Simple Subset Wizard
 - Objective: Demonstrate simple search mechanism for ECHO (using OpenSearch) and web service calls to DAACs to subset search results
 - **Collaboration with GES DISC**
- LP Metadata in Mercury
 - Objective: Extend the existing Mercury interface to include LP DAAC collection and granule-level metadata
 - **Collaboration with ORNL**

Cross-Archive Search and Distribution

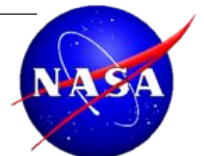


[below]

- Processing options available on selected data based on operational MRTWeb interface

[above]

- Visual search / selection of data from external archive (MOD09 Swath Data from MODAPS in this view)
- Layers, selection mechanisms, and other design concepts borrowed from operational interfaces such as GloVis, DEM Explorer

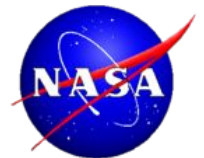


Data Access Roadmap

- In response to the ESDIS User Surveys, UWG & Science Team recommendations, the LP DAAC is developing a data access roadmap to:
 - Identify key components of access functionality
 - Evaluate current clients against use cases
 - Identify key technologies and partnerships necessary to address anticipated needs
 - Provide a strategy with recommendations for future improvements to LP DAAC data access channels & tools
 - Identify avenues to reach user communities (social media, workshops)
- We are soliciting suggestions and recommendations from the MODLAND team members

Potential New Data Sets

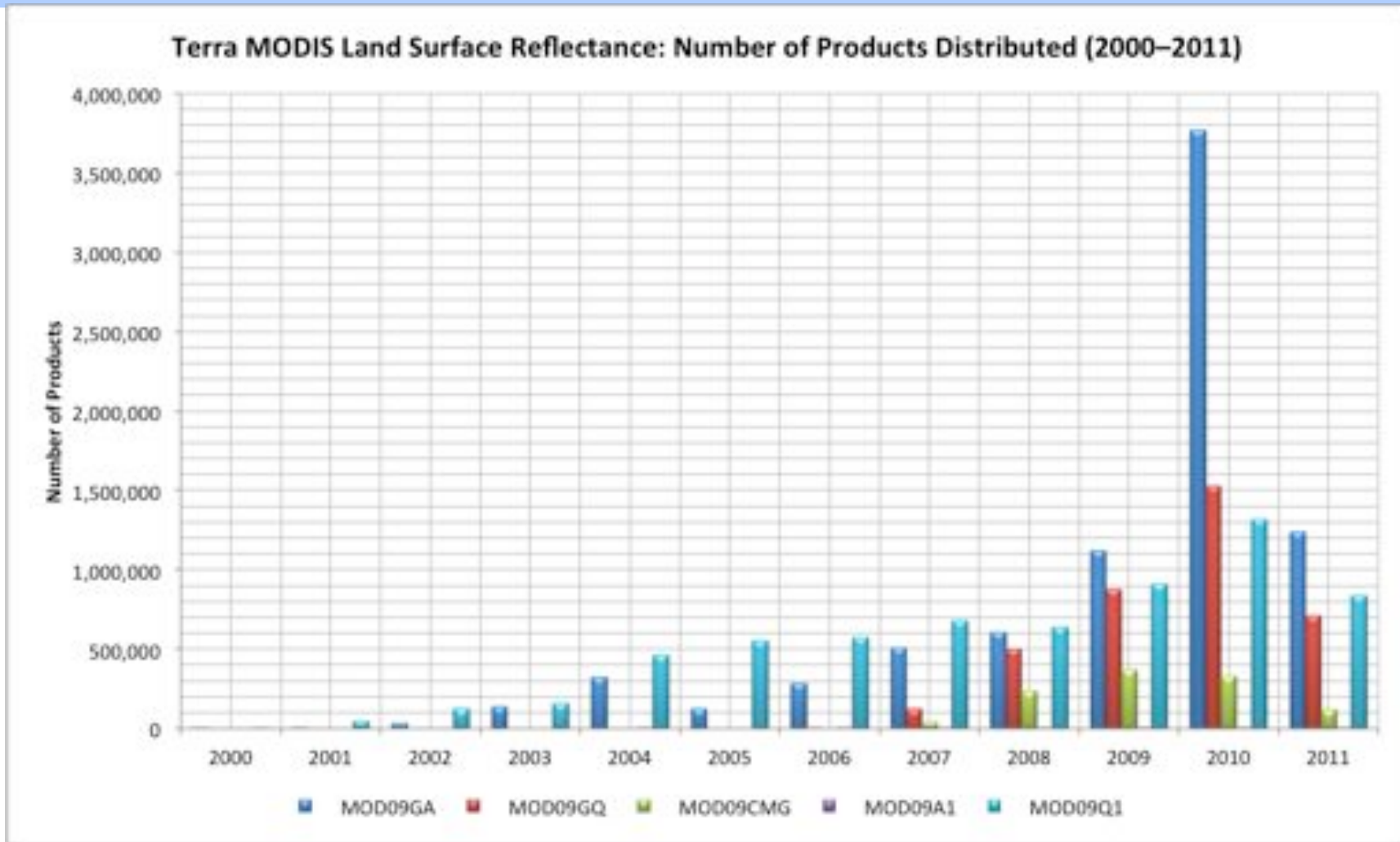
- “MOD16” ET products from UMT/NTSG
 - pending ATBD approval
- MEaSUREs
 - VIP (Didan), WELD (Roy), GFCC (Townsend), DGDEM (Kobrick)
 - Ingest in FY12 (pending review & NASA approval)
 - https://lpdaac.usgs.gov/lpdaac/user_community/nasa_measures
- From the UWG:
 - Brightness temperature (MODTBGD)?
 - Water band reflectance products over land?
 - **Who will have access to VIIRS “LandPEATE” products?**



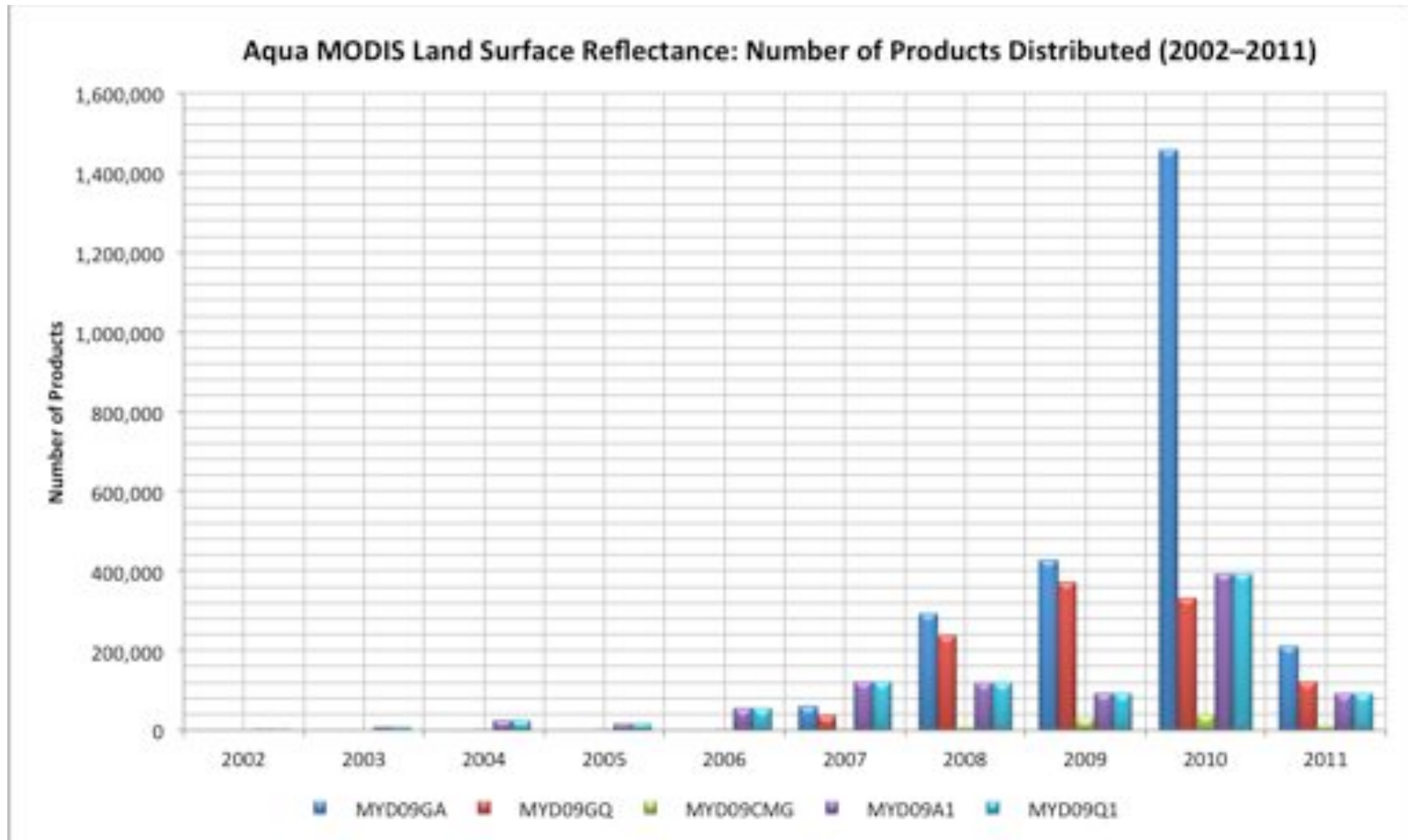


Questions?

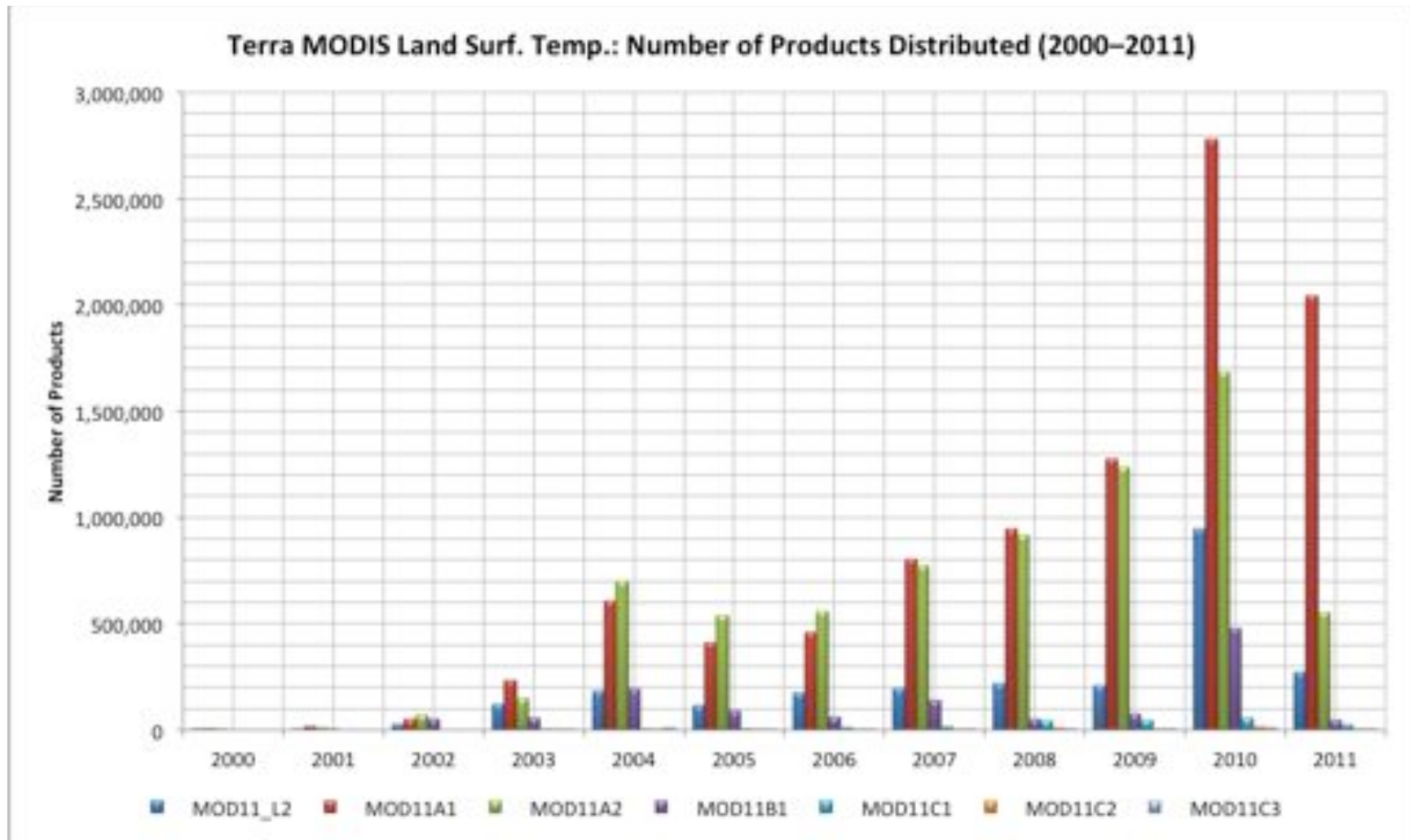
MOD09 – Land Surface reflectance



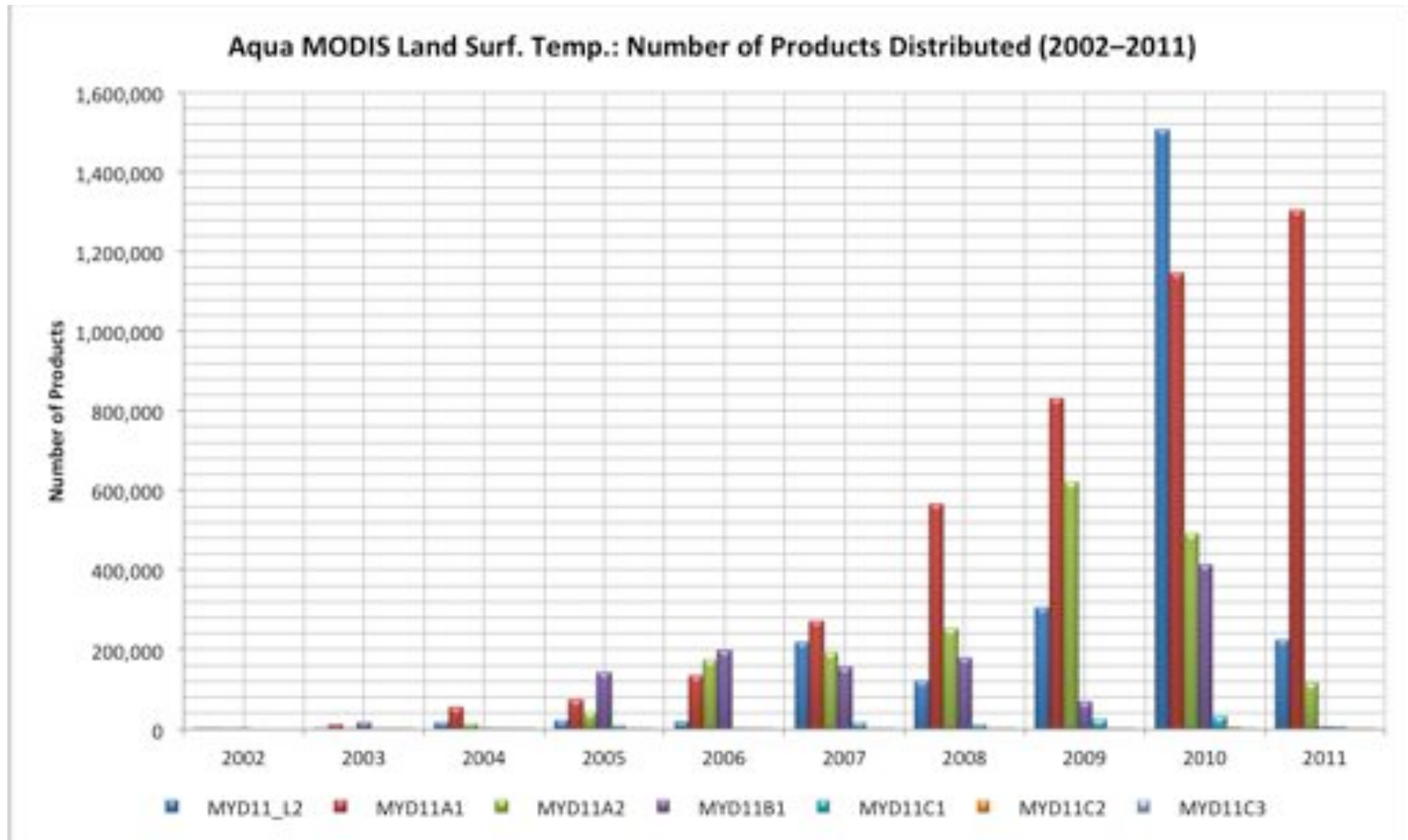
MYD09 – Land Surface Reflectance



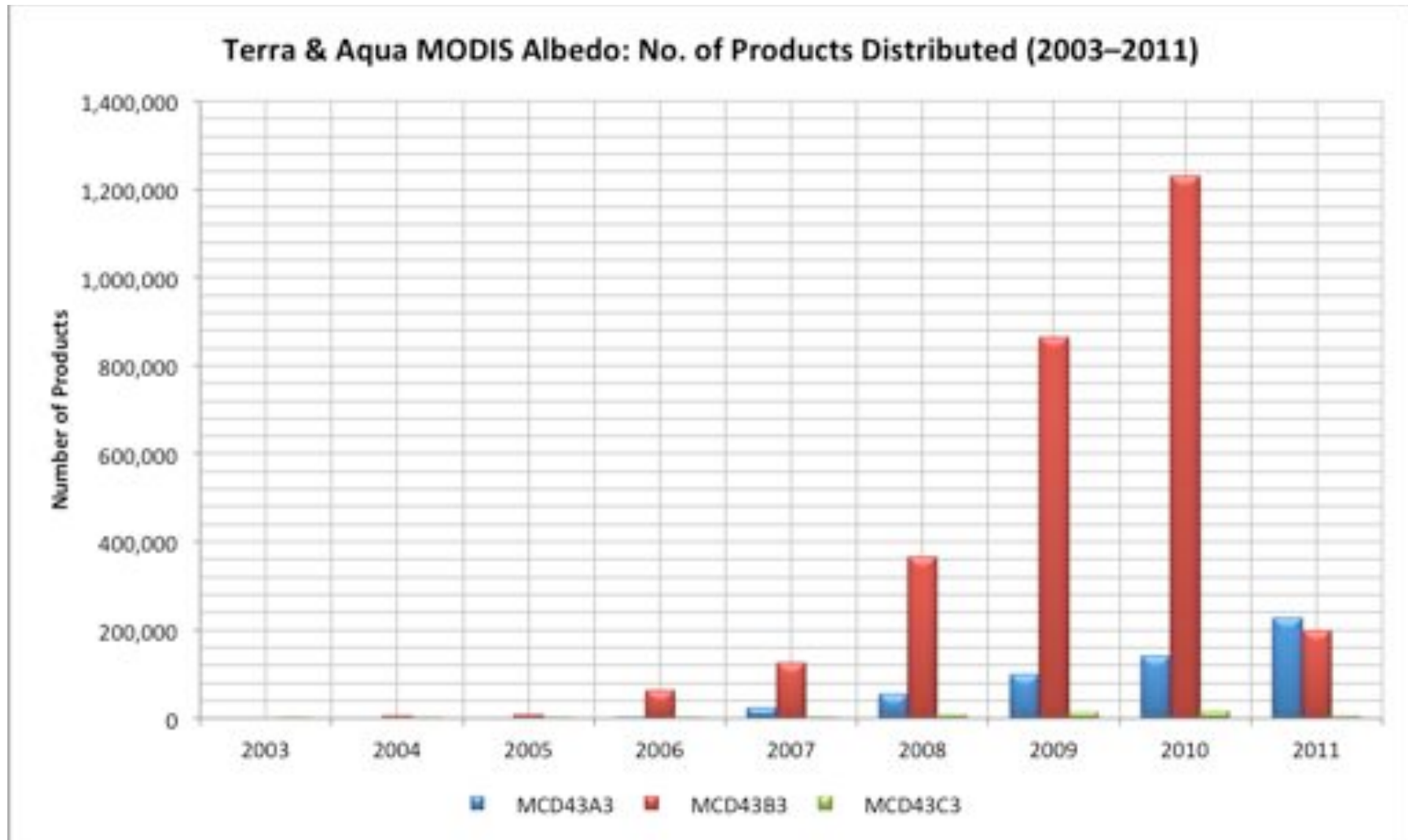
MOD11 – Land Surface Temperature



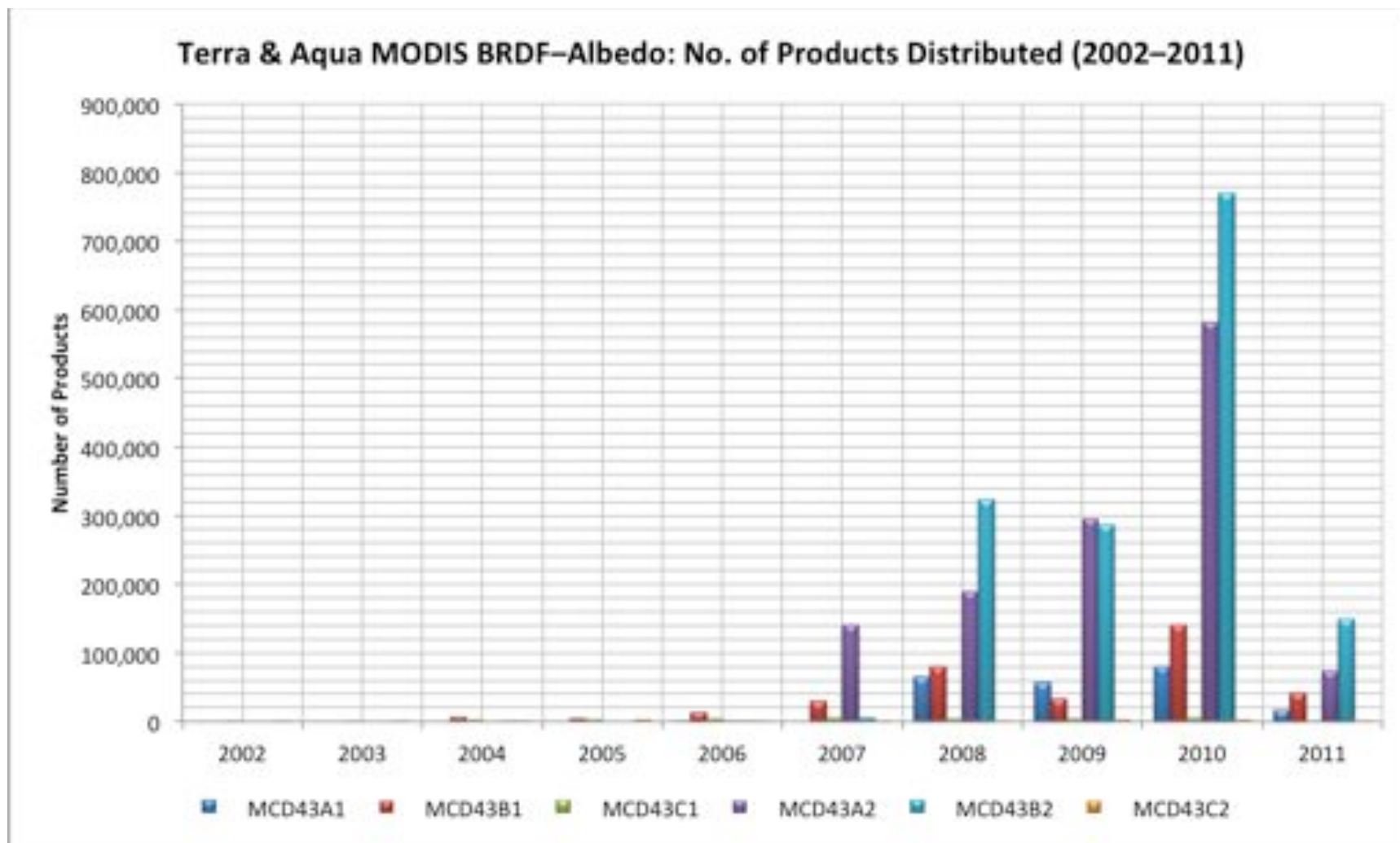
MYD11 – Land Surface Temperature



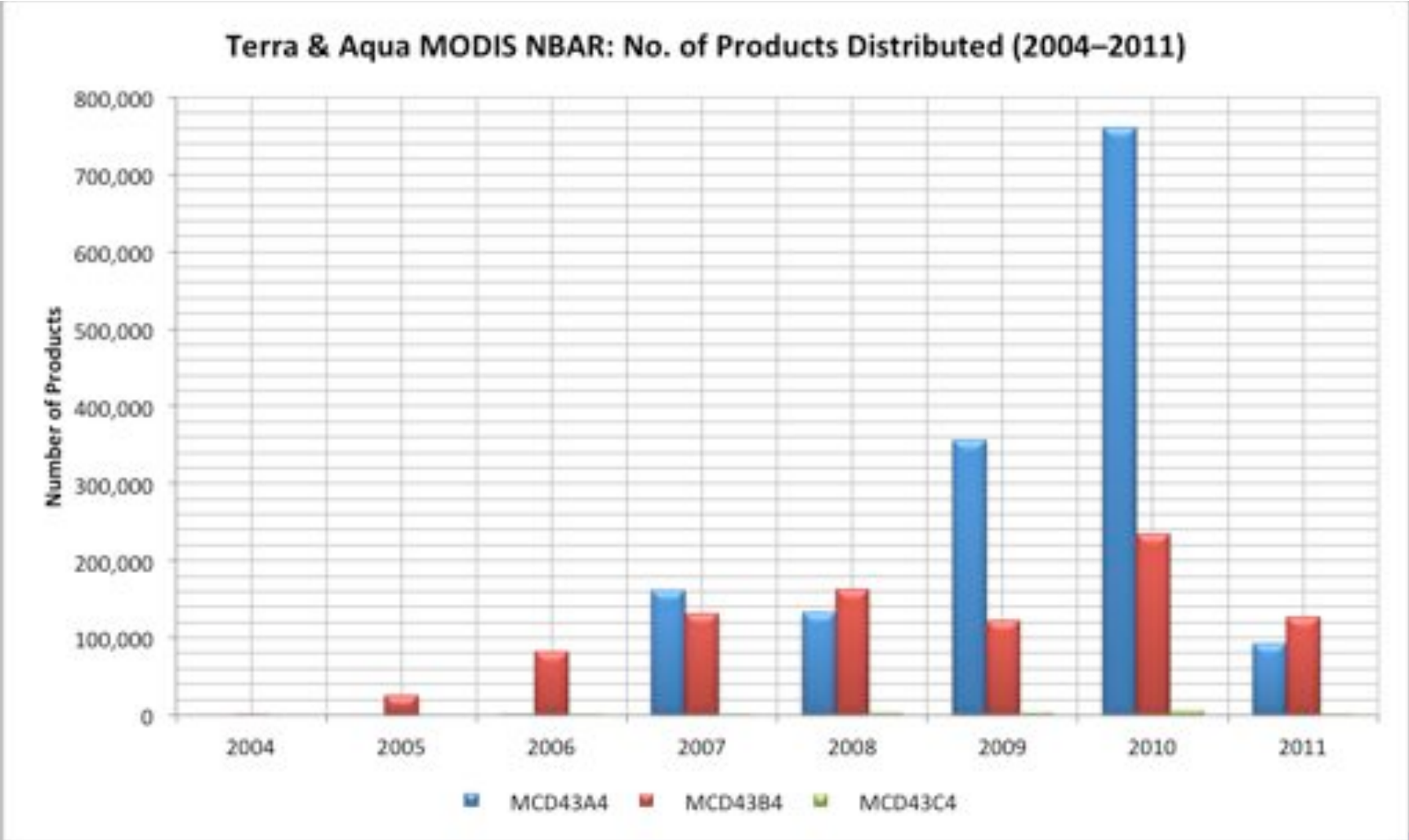
MCD43x3 - Albedo



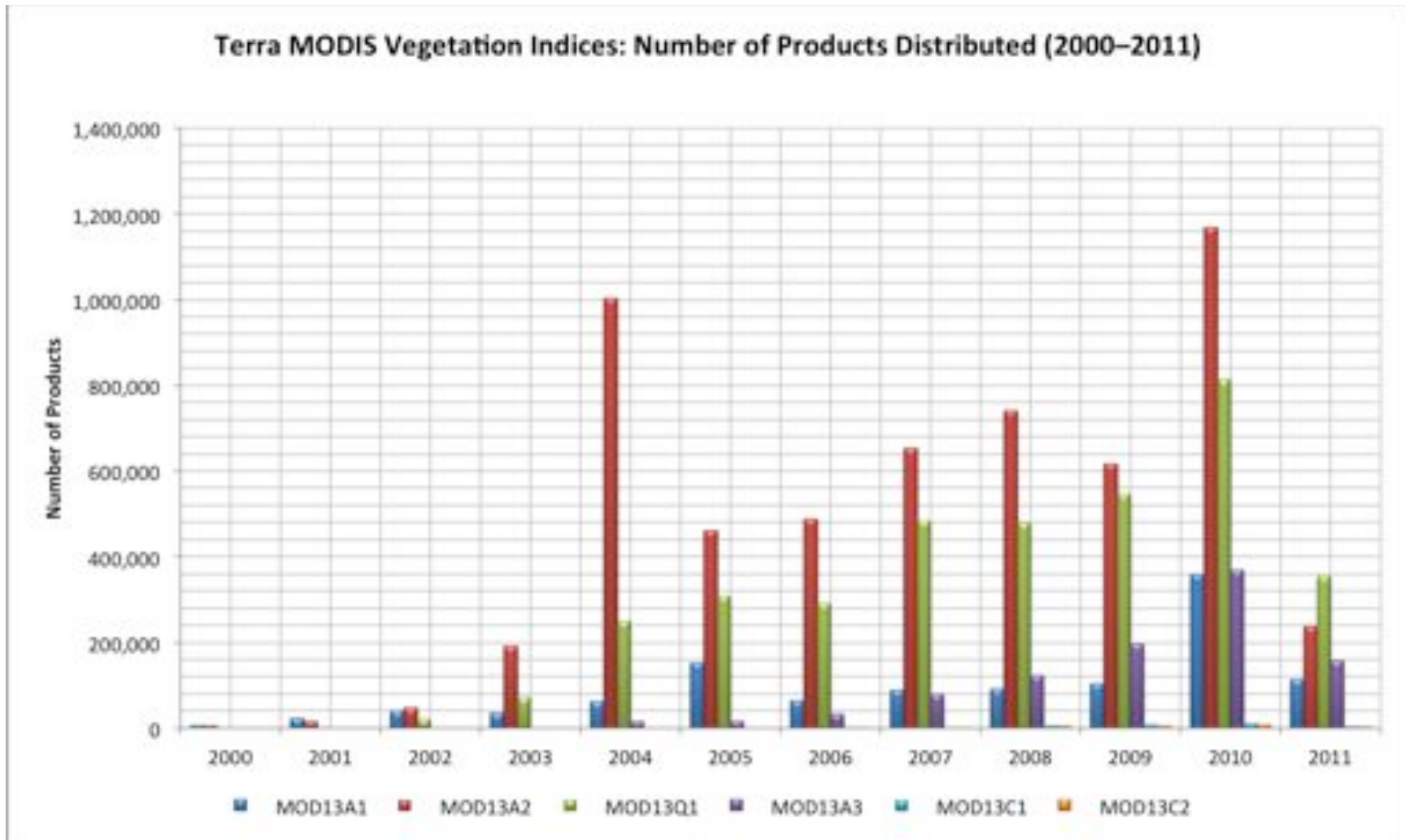
MCD43 – Albedo/BRDF Parameters



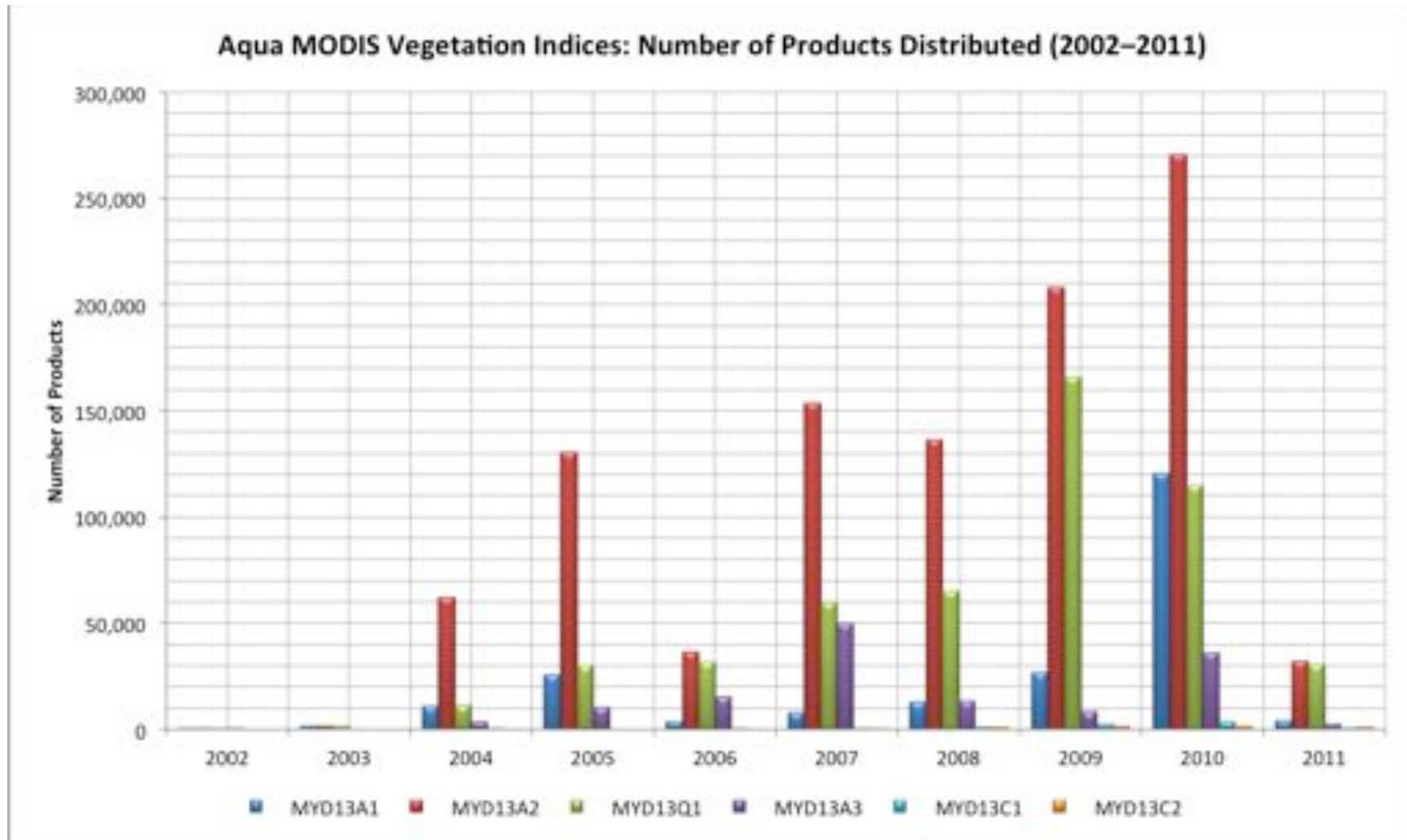
MOD43x4 - NBAR



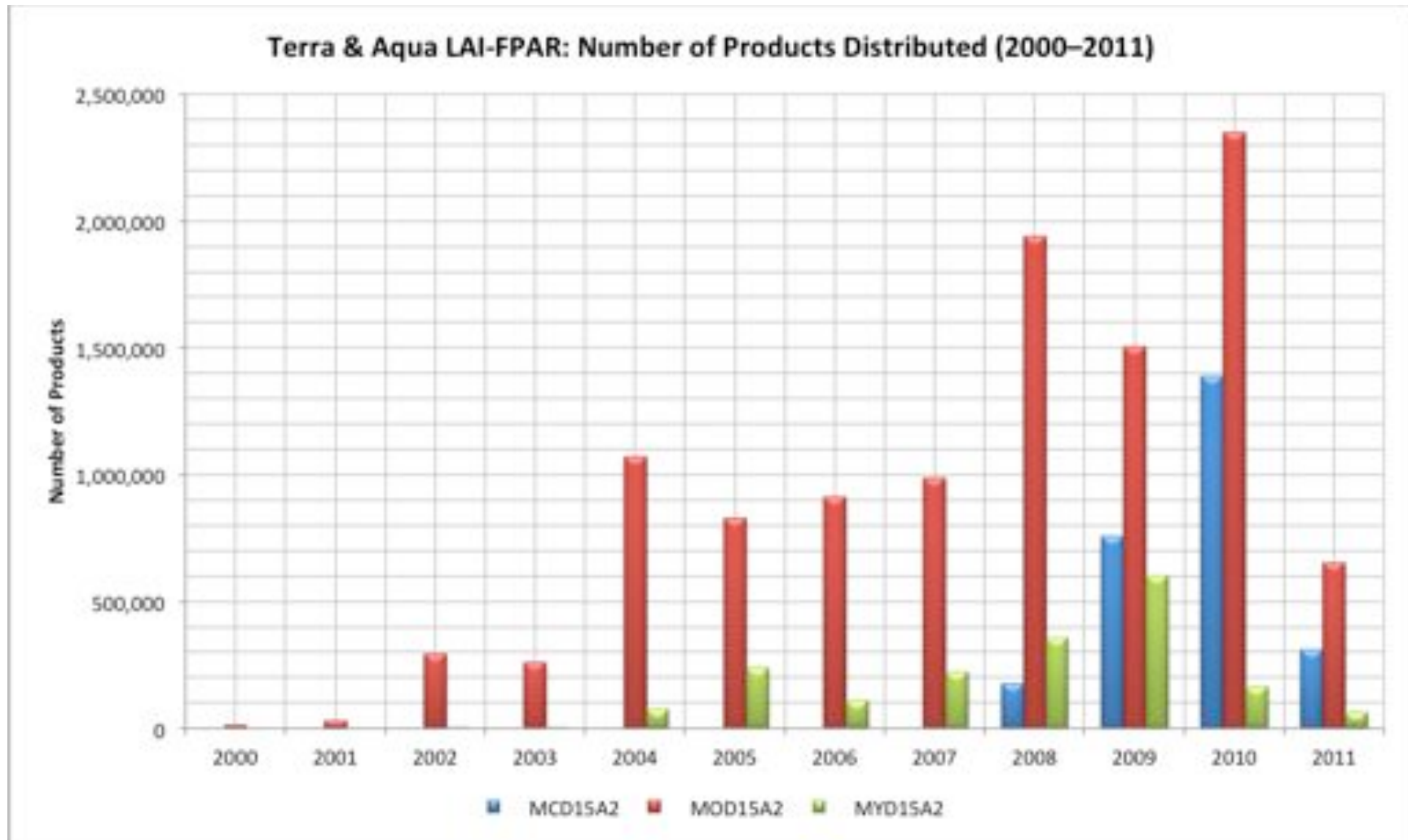
MOD13 – Vegetation Indices



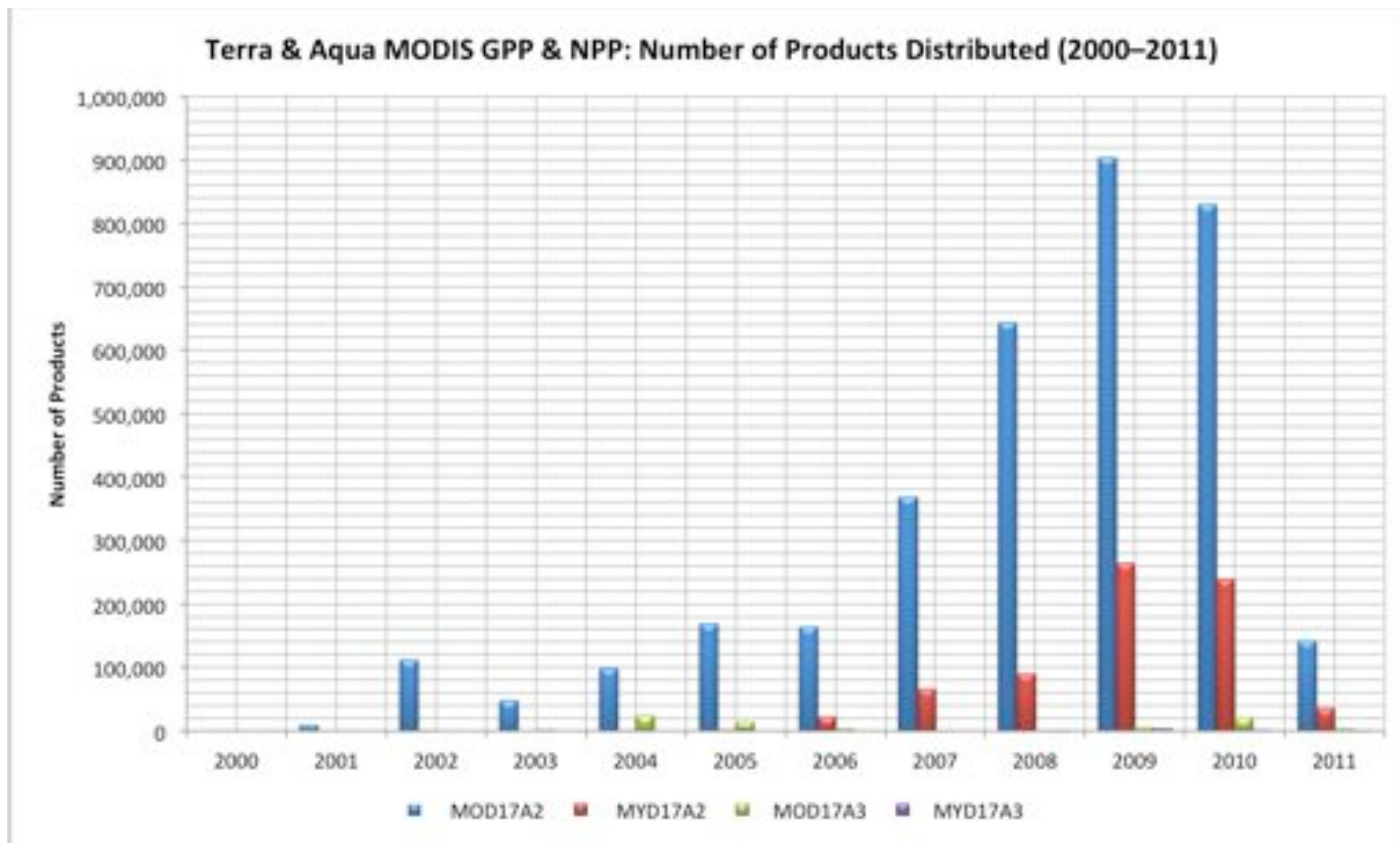
MYD13 – Vegetation Indices



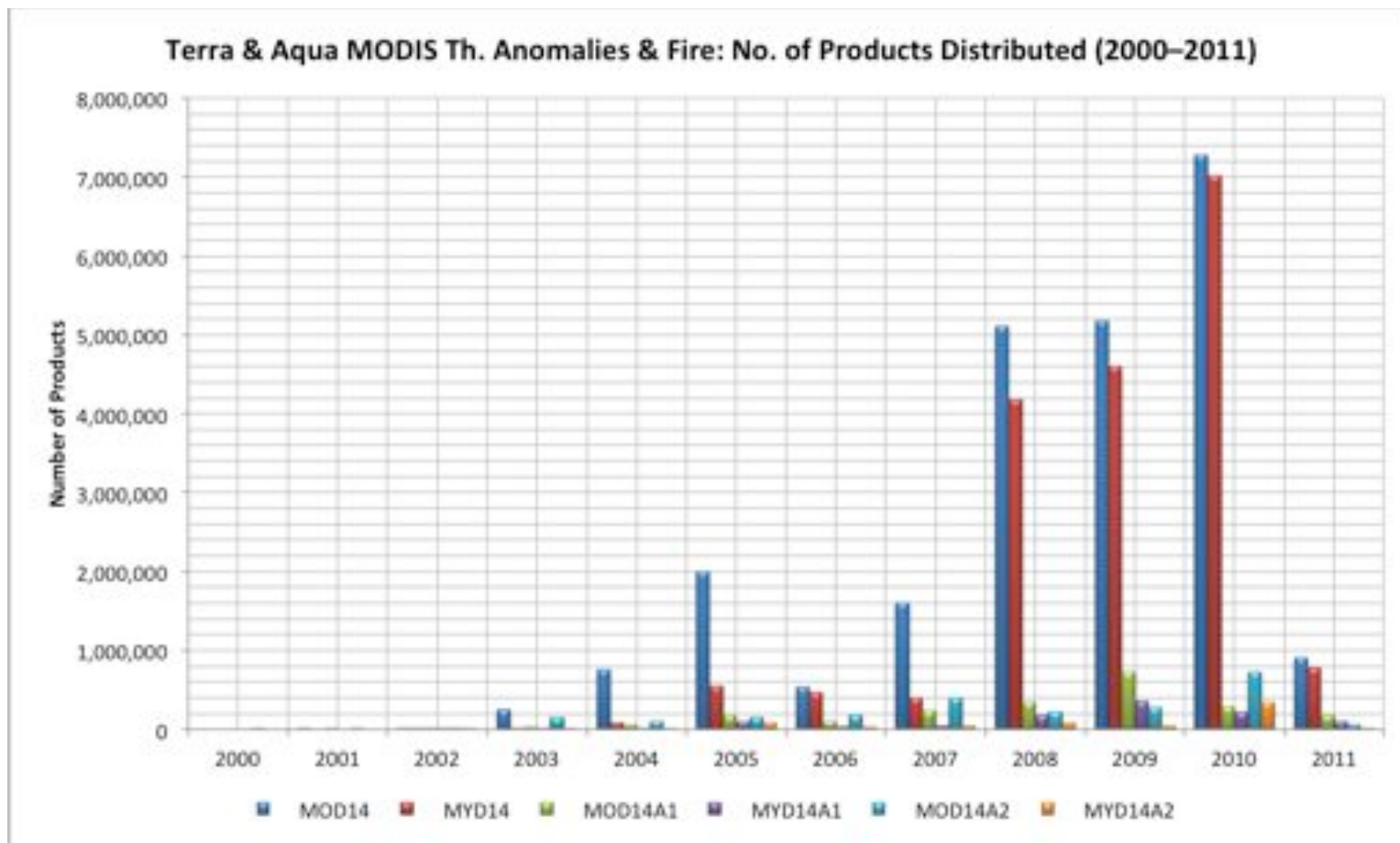
MCD15 – LAI/fPAR



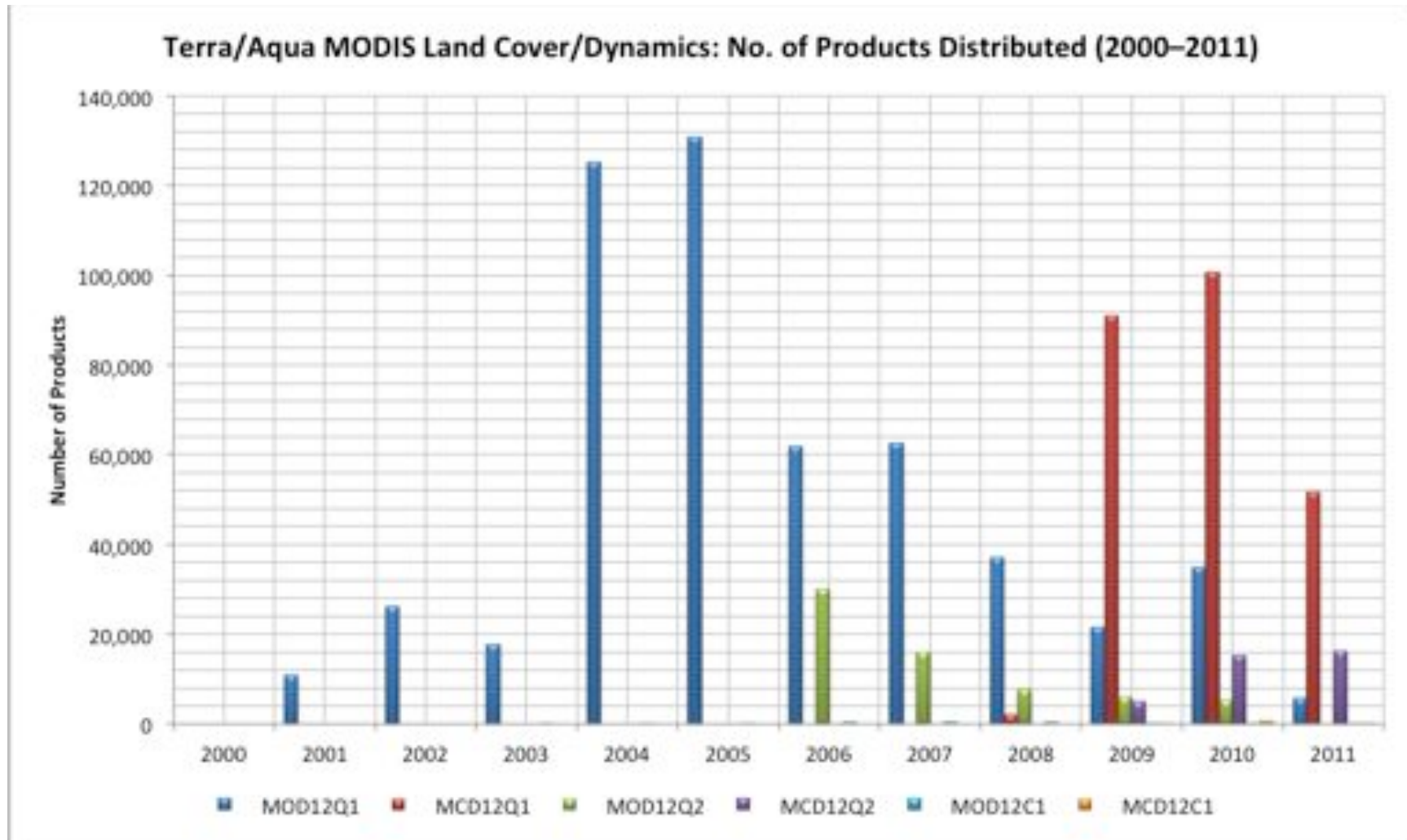
MOD/MYD17 - GPP



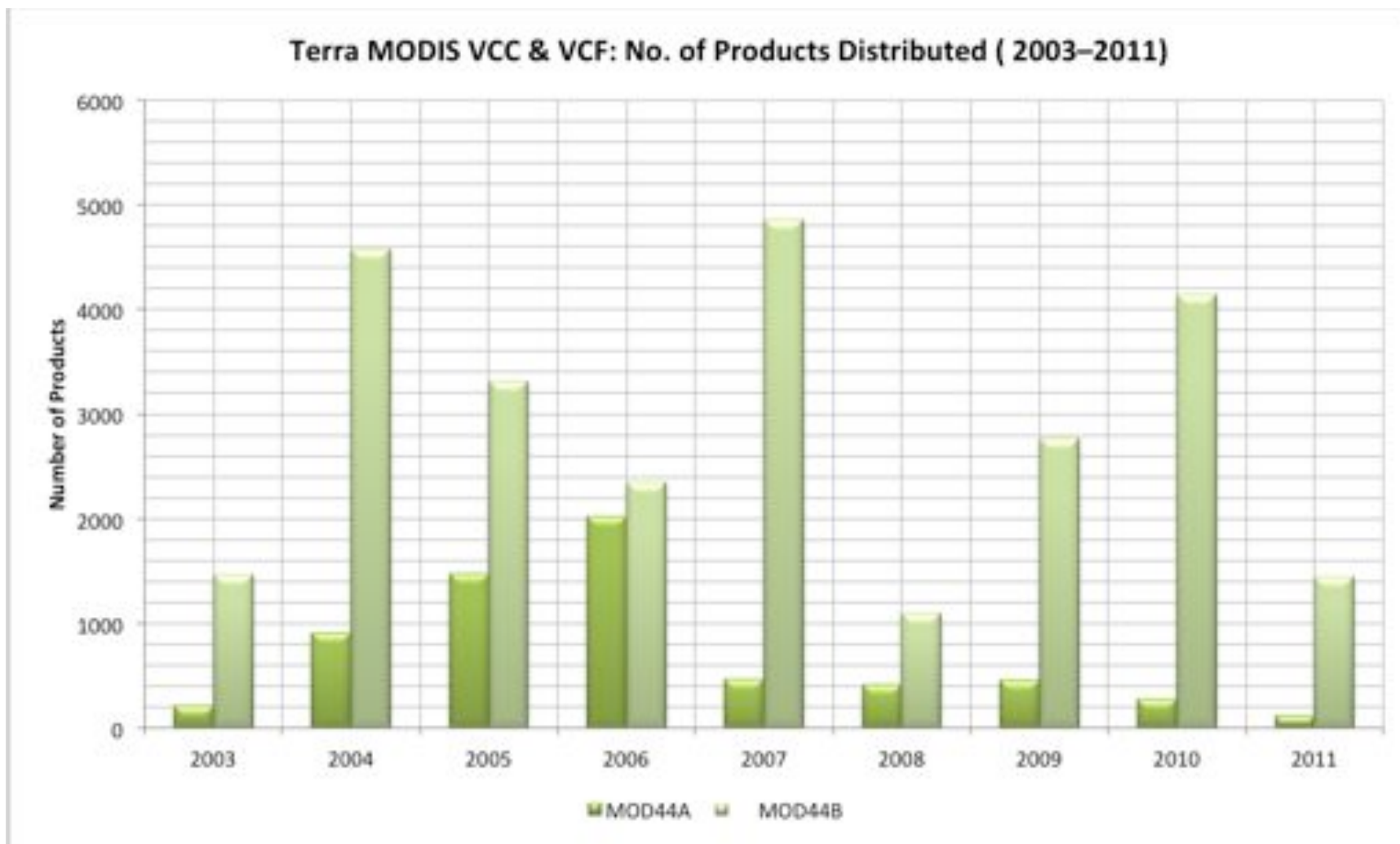
MOD/MYD14 – Thermal Anomalies/Fire



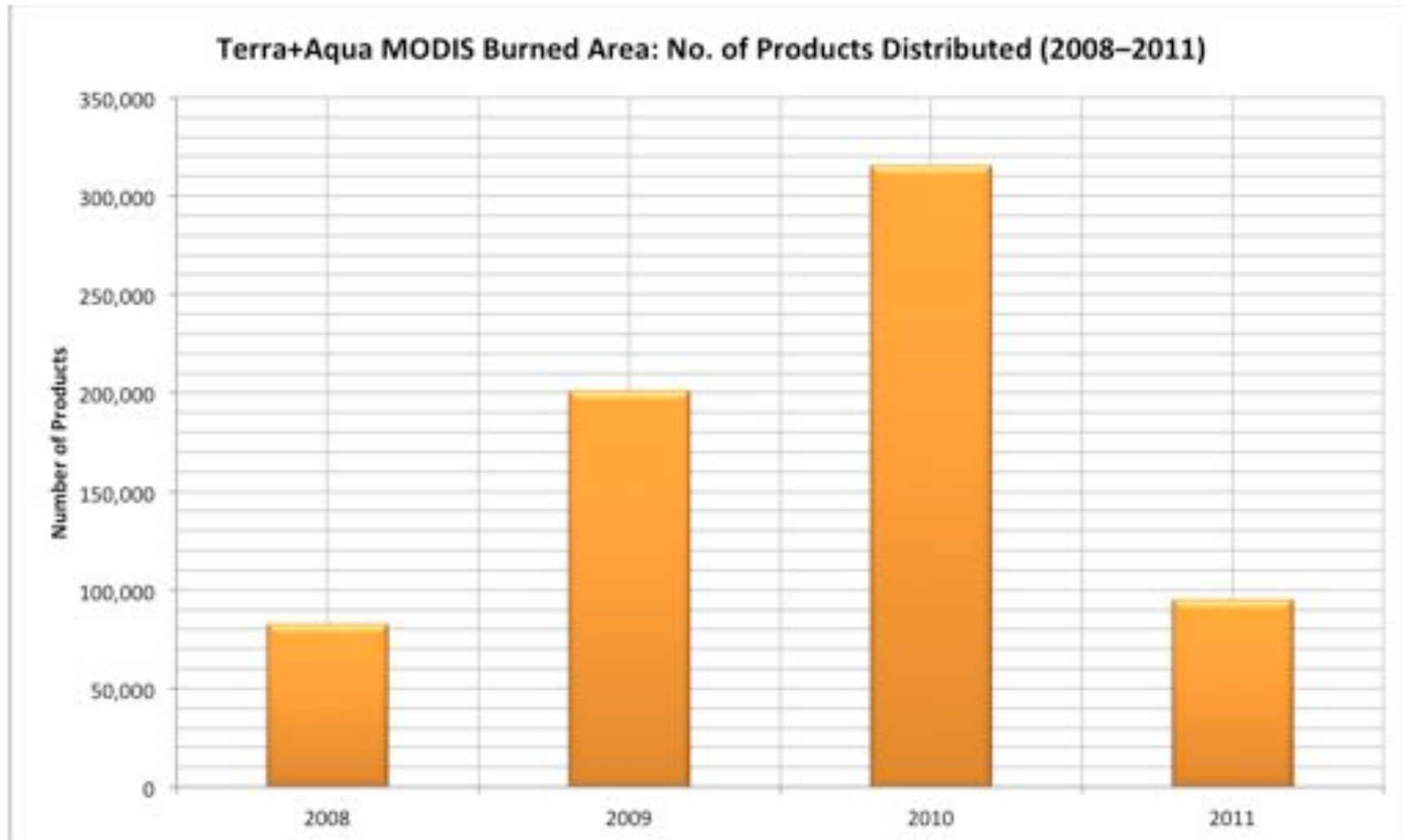
MxD12 – Land Cover Type/Dynamics



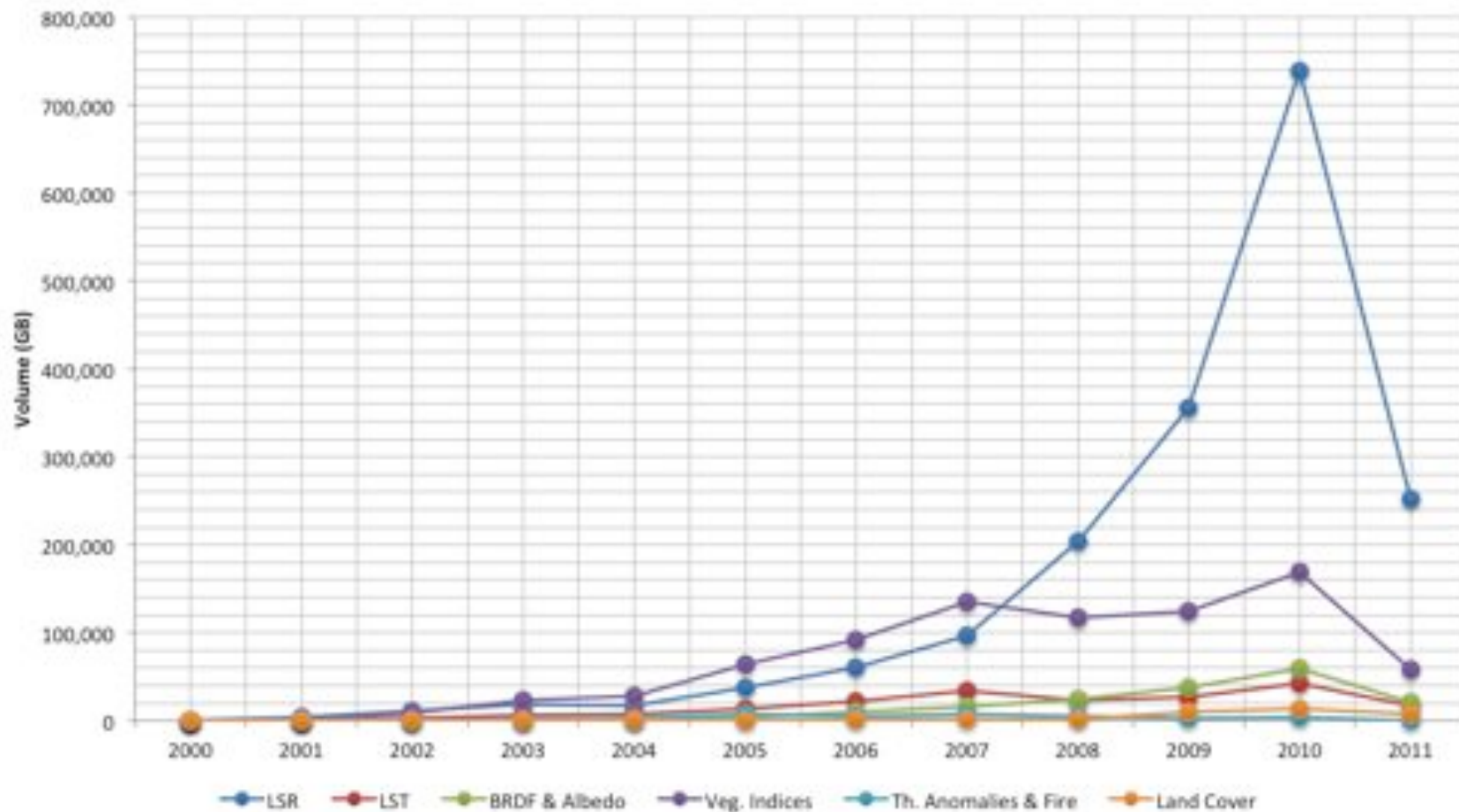
MOD44B – Veg. Cont. Fields/Water Mask



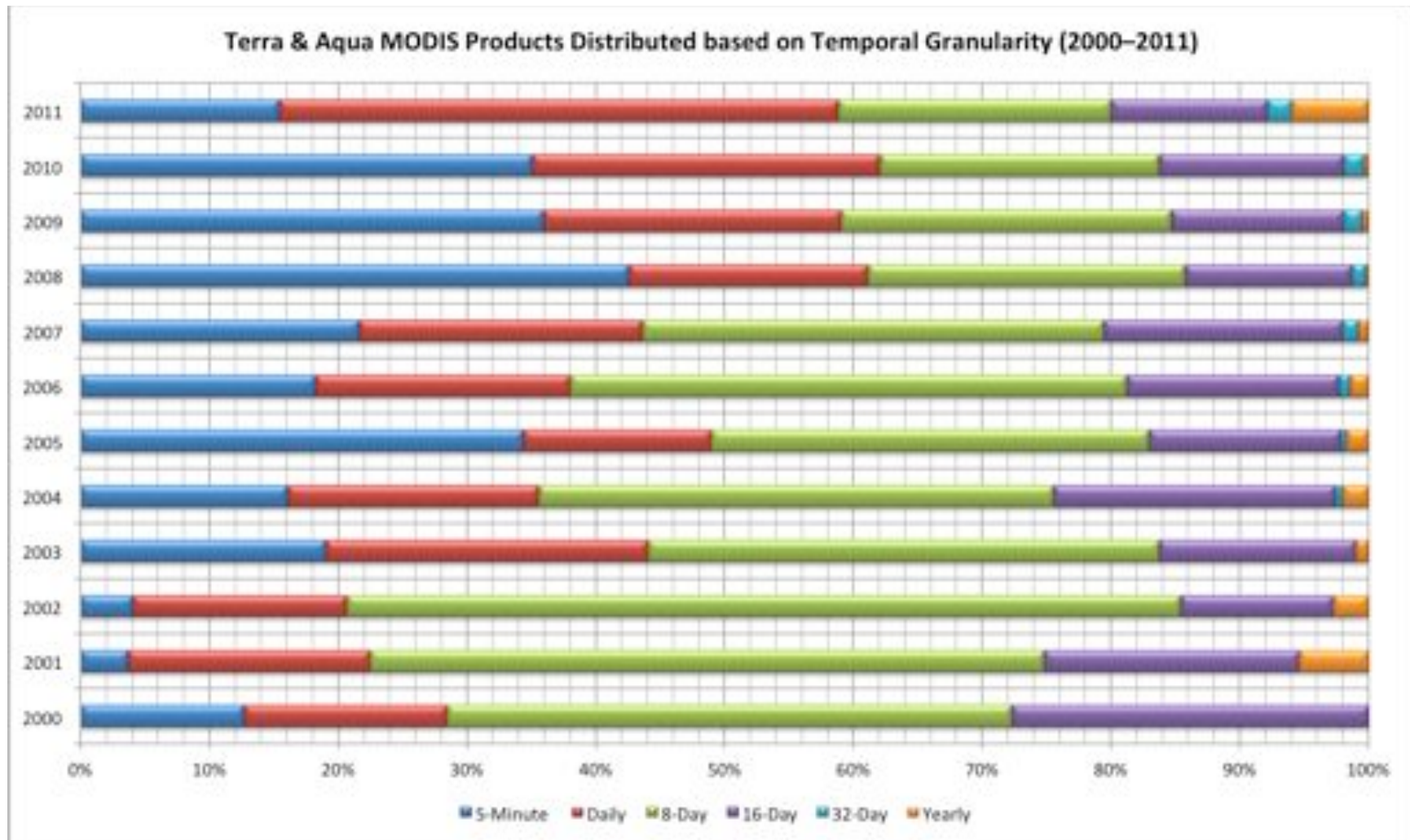
MCD45 – Burned Area



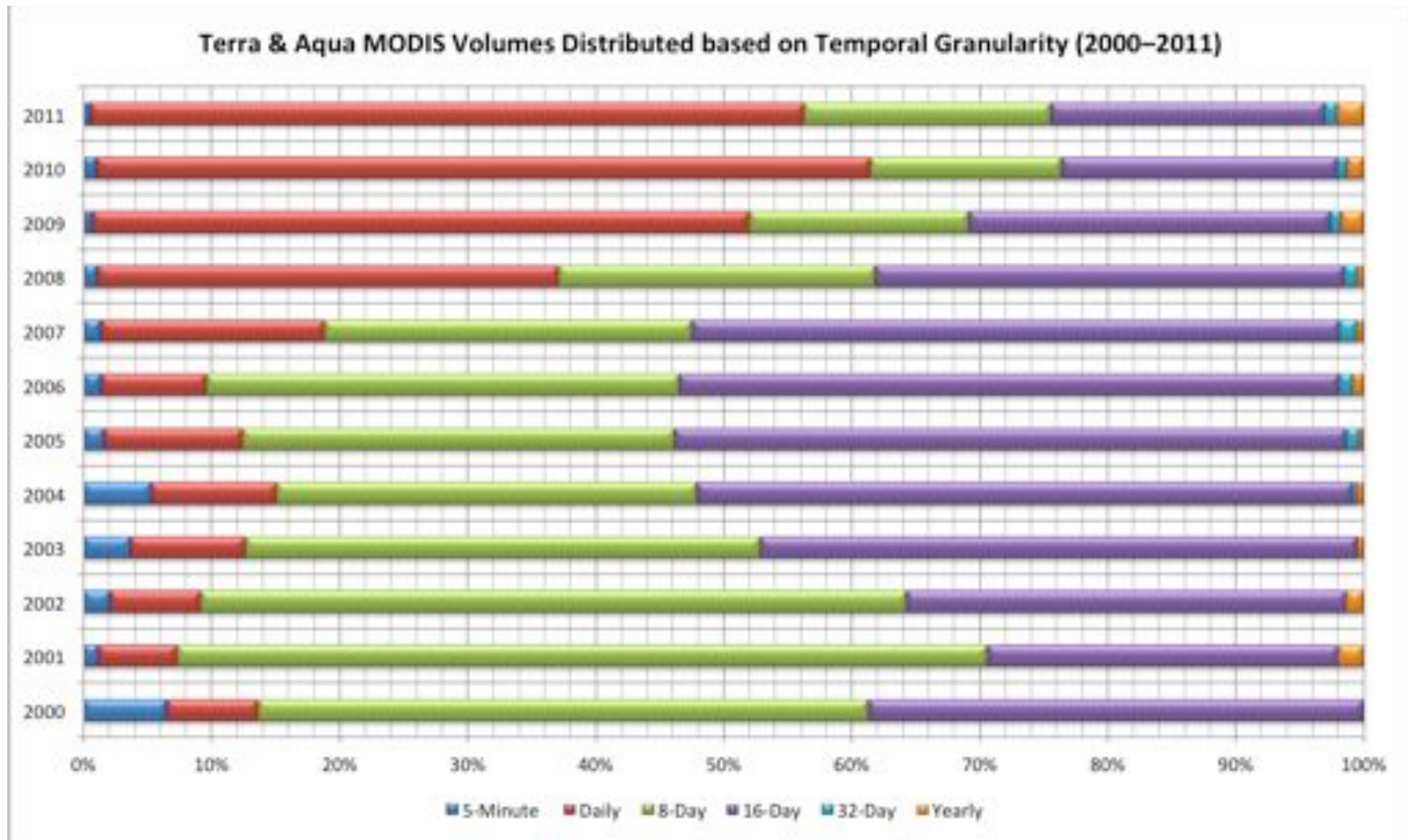
Terra & Aqua MODIS Distribution by Volume (2000–2011)



Temporal Slice by Files



Temporal slice by Volumes



CANDI diagram

