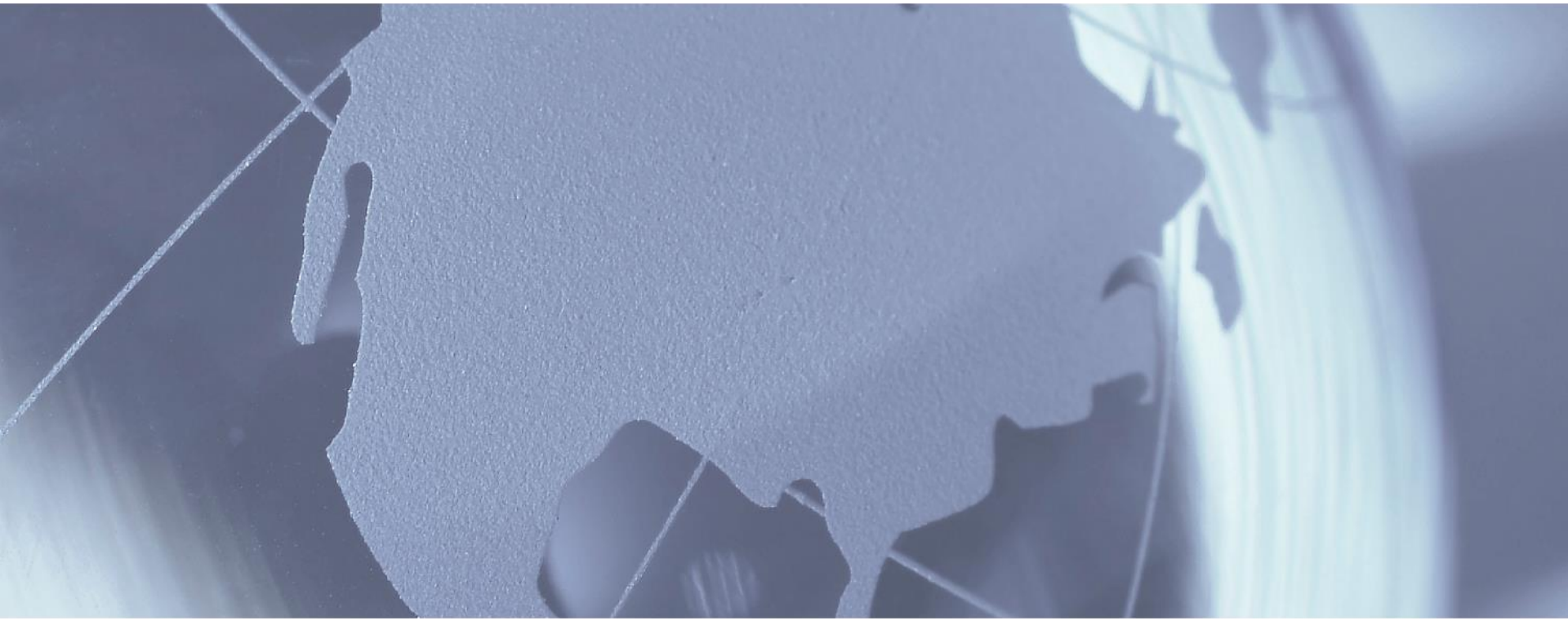


Data Use:

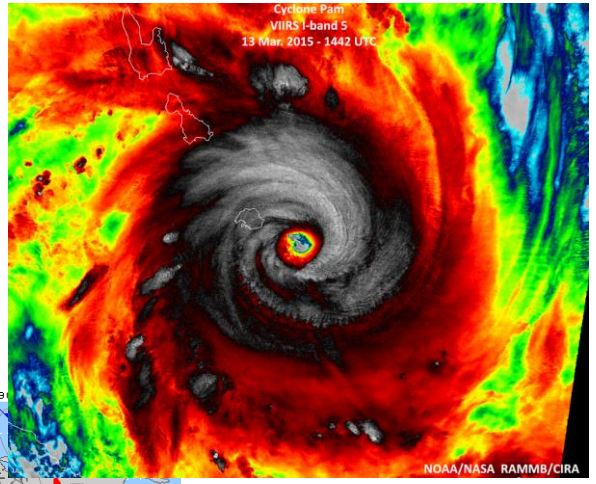
How Does NOAA Use Satellite Data to Fulfill its Mission?

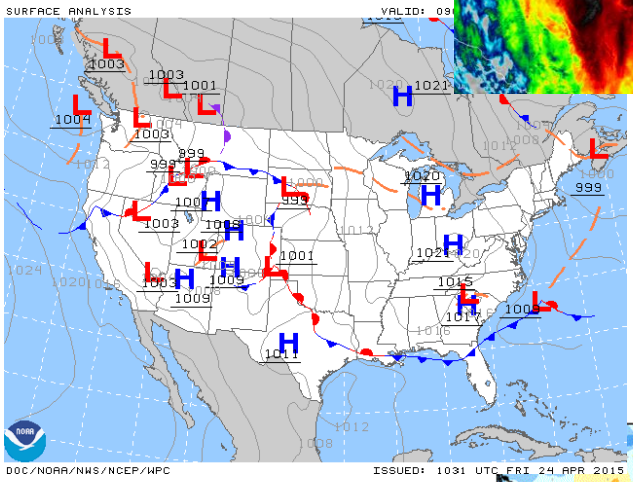
Presented to: NOAA/NESDIS Workshop
Consideration of Commercial Data to Address Our Priority Data Needs

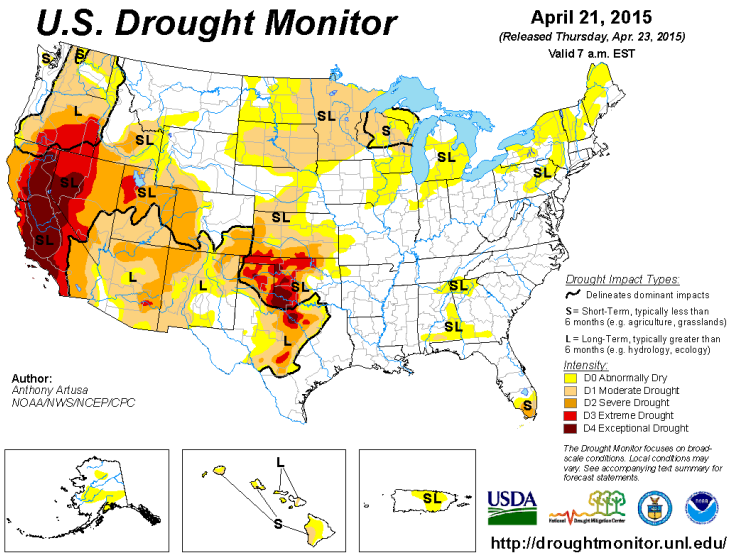
April 28, 2015

How are NOAA's data used?

- Near-term mission
  - Hurricane intensity, Aviation forecasts, etc.
- Long-term mission
  - Drought, El Niño, Climate Data Records, etc.







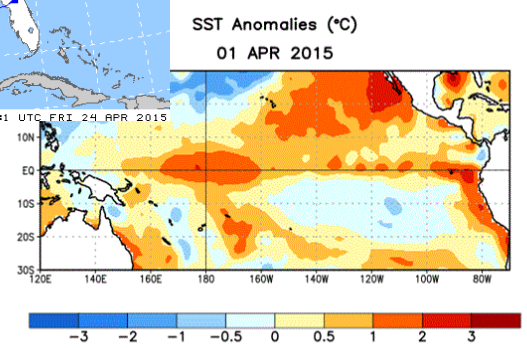


Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 1 April 2015. Anomalies are computed with respect to the 1981-2010 base period weekly means.

Data Flow Process

Ingest Of Data

- NOAA Satellites
- Intergovernmental/ International satellites & partnerships
- Other external sources

Processing/Manipulation/ Reformatting Of Data

- Data quality assurance and calibration/validation
- Creation of products

Distribution Of Data And Products

- Key stakeholders:
  - Numerical Weather Prediction models
  - Field forecaster applications

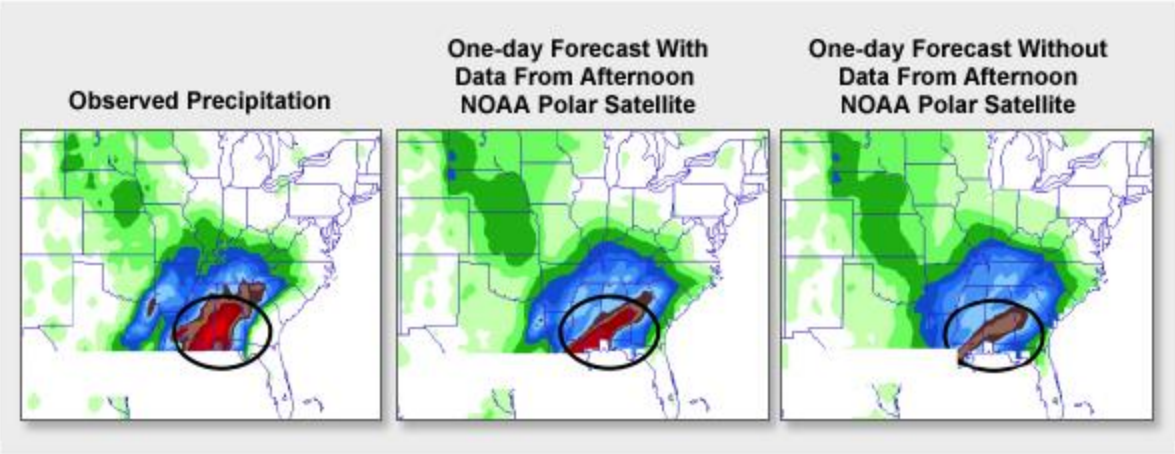
Data/Product Archive And Stewardship

Quality Assurance: Basic Standards

- Are the data reliable, valuable, accurate, timely and sustainable in the long term?
- Are the data available for early testing?
- Have IT security concerns been mitigated?
- Can NOAA easily reach back to data provider for support?
- Is the process cost-effective?

Case Study: JPSS-1 ATMS

- S-NPP data examined as proxy in advance of JPSS-1 launch
- Data received into ground system post-launch and after instruments turned on
  - Photons converted to vertical atmospheric soundings
- Calibration/validation of sounding data to determine its quality and reliability
- Generation and distribution to NCEP/Environmental Modeling Center
  - Evaluation and testing of soundings
  - If acceptable, assimilation into EMC Numerical Weather Prediction models
- Data archived at NCEI for future exploitation



Notional Timeline Example: Data Stream Testing

- Normally prior to launch: NESDIS STAR works with provisional or simulated data
- T+0: NOAA receives test data stream
- +3 to 12 months: Development and testing phase of data stream and/or derived products complete
- +3 to 12 months: Pre-operational testing phase of data stream and/or derived products complete

From T+0: 6 to 24 months — Data/Products Operational
Wide time range depending on type, uniqueness, quality of data, and how early NOAA can test it

Questions and Discussion