

1. How can NESDIS improve their services and data?

Key points for NESDIS Improvement on Data Management:

- Online documentation and information products to support data
- Point of contact at data centers for each NOAA dataset, with rapid response, personal approach, part of metadata
- Customer support for finding datasets
- Levels of detail available – searchable layers of metadata (partner with library scientists)
- Provide data in diverse set of formats, determined by user needs
- Improve web and other interfaces to provide easy access
- NESDIS needs to produce position papers on formats, archive plans, etc.
- Get data out quickly

Detailed Suggestions:

- Data available in standard GIS formats – including GeoTIFFs
- Download data for offline access & manipulation
- Use of formally supported standard and formats
- Use w/ COTS software
- HDF, NetCDF easily used and read
- Sensor data should be stored in native format
- NESDIS needs to take the lead to develop converters between formats – make data available in commonly used formats
- How data are stored is different from how data are distributed
- Survey: determine most useful formats
- Collection of organizations developing standards
- Standards and protocols – who is involved?
- Use of XML now being applied by some users for information transfer
- How to move data in cost effective mode netCDF ~ 50% larger than GRIB
- Providing end-user translators (problem of cross-platform compatibility)
- Needs to be easy for user to import & use data
- Translators: server vs. end users
- NESDIS leadership to provide better formats, support and educate users
- Partnerships between data centers & users to develop formats, standards and tools
- Many NESDIS data are provided in ways that are difficult to use
- New software results in new data format needs
- Difference between data access and products – need greater for data
- Requirements preserving long-term archive: level of complexity, version control, format translation (Open Archival Information System (OAIS) reference model)
- Need of NOAA position paper on protocols for long-term archive and data formats
- Needs to be do-able: limited resources require balance between reformatting and making sure data are archived
- Partner with library / information scientists for human interaction perspective
- Data access interfaces: easy to access, easy to interface

- Common metadata tags, single searchable data portals/tools
- Develop / apply appropriate tools using web, software, etc.
- Adapt to level of users: smart interfacing, personnel to assist
- List of publications related to datasets (primary metadata: original source; secondary metadata: later QC, evaluation or application)
- Have subscription services for dataset updates
- Point of contact at data centers for each NOAA dataset, with rapid response, personal approach, part of metadata
- Discussion of distributed vs. centralized data:
 - Data or value added products in hands of & distributed by researchers
 - Accountability of distributed data sets
 - Research vs. archive products

2. How can NESDIS Centers best provide for customer feedback?

- Human customer interface
- Web-based trouble ticket system / feedback buttons
 - With feedback of problem report status
- E-mail user groups and FAQs with archived user group discussions
- Dataset problems, changes maintained as part of metadata
- Regular cycles of user surveys
- Standing advisory panel(s), providing voice for community
 - Communications between high-level policy and user / working levels
 - Nested at given centers
- Continue user workshops
 - User meetings at AMS, AGU, GSA, ESA, etc.
- Online surveys built into request system
- Sets of requirements – who solving problem for

3. Technology of the future -- How can it help?

Driving Factors

Constants

Key Uncertainties (technology, information delivery)

What are the implications for NESDIS today?

Will Change

- Technology: computer , hardware, speed, storage, capacity, cyber-infrastructure
- Data volume, proliferation of data sources
- Geographic boundaries shrinking or disappearing
- Scientific limitations reduced, changed
- Distributed data sets, archives
- Data sharing – users becoming providers
- Political leadership / funding priorities
- Observing platforms, including satellite configurations
- New environmental monitoring sensors
- Greater demands on research community for rapid product turnaround, greater accuracy
- Better educated public
- Climate, population
- Greater importance of space weather
- Greater demands for NESDIS data in K-12 education – broader definition of education and research communities
- More geo-savvy public (citizens and students)
- Personal mobility, viral mobility
- Natural resources – increased demand
- Greater needs, outstripping and cost of resources

Might Change

- Free and open data exchange among countries
- Demand for different formats
- Sensor webs – targeted observations
- Demand for cross-discipline data availability
- Healthcare looking to climate

Technology Drivers:

NESDIS Response

- Work now to facilitate better archives, better long-term preservation and access: ensure data stewardship, shorter availability time, link data centers, link agencies, link data sources, cross agency standards and protocols and data mapping.
- Data set accountability
- Apply developing cyber-infrastructure

- Links to other data centers, other archives
- Broaden definition of education/research community to include K-12
- Increase data capacity, capability
- Provide free data and products – impact of pricing policies on data
- Support a future archive
- Quality of data
- Enhanced metadata, automated metadata production
- Scientific data stewardship: proper migration and archive, end-to-end
- More rapid turnaround of new data
- Cross-agency standards of availability, etc.
- Link data centers across NOAA, across agencies for central data discovery

4. New data acquisitions: What data should NESDIS archive?

- Important to archive metadata along with data
- New instruments or satellites require archive plans
- High-resolution, in situ surface data – especially research data
- Night-time lights products
- General requirements for data preservation, longevity and continued usability with changing formats
- Keep in mind L-T usability and survivability of archived data, paper on protocols

5. New products and services: What should we plan for?

- Data quality more important than speed and accessibility
- Stewardship and accountability of the data
- New data formats
- Interagency responsibilities for data
- Rescue of 19th century and older data
- Declassify and archive military data

6. What other issues need to be addressed?

- Cross-agency standards
- Funding crisis
- Regular migration of media
- Large data influx, volume