

NOAA SEA SURFACE TEMPERATURE COORDINATION MINI-SESSION

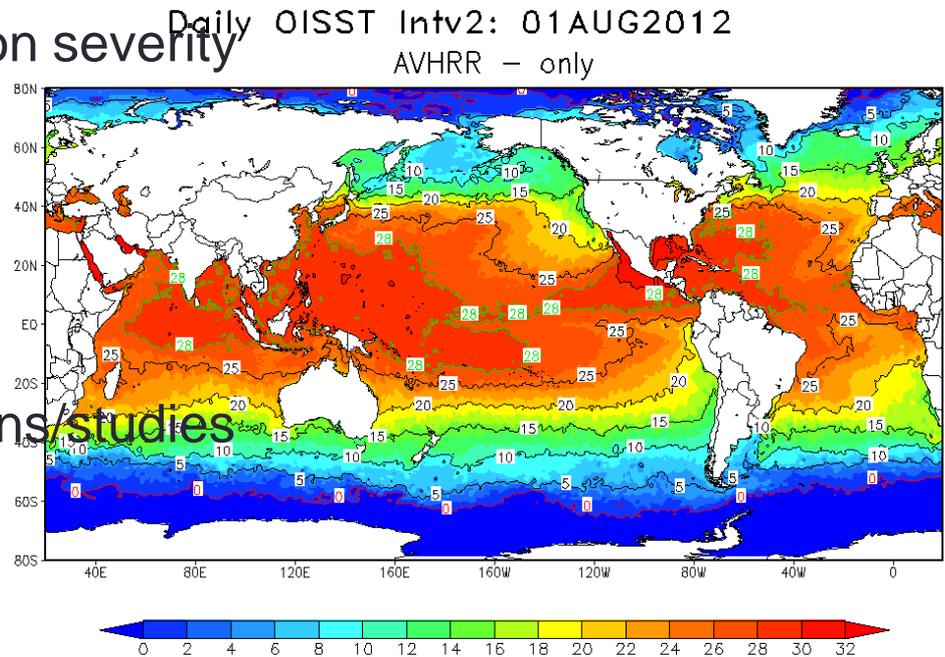
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Sustained Climate-quality SST products within NOAA

- How to sustain and maintain authoritative climate data records within an operational environment
 - Archive and distribution
 - Technology transfer
 - Algorithm “upkeep”
 - Extending Climate Data Records
 - Inclusion of new, latest-and-greatest algorithms
 - Maintaining multiple versions of CDRs
 - Close linkages to user requirements
- Will illustrate many issues with just 2 examples....
- Discussion

OISST : Optimally Interpolated SST

- “Reynolds” SST, blended satellite/in situ
- CDRP’s and NCDC’s most widely used/applied CDR
- Current applications include:
 - Weather and climate modeling
 - Prediction of hurricane/typhoon severity
 - Wildfire correlations
 - Heatwave correlations
 - Fishery yield predictions
 - Monsoon rainfall predictions
 - Coral reef bleaching predictions/studies
 - ENSO predictions/monitoring
 - Oil spill risk assessments

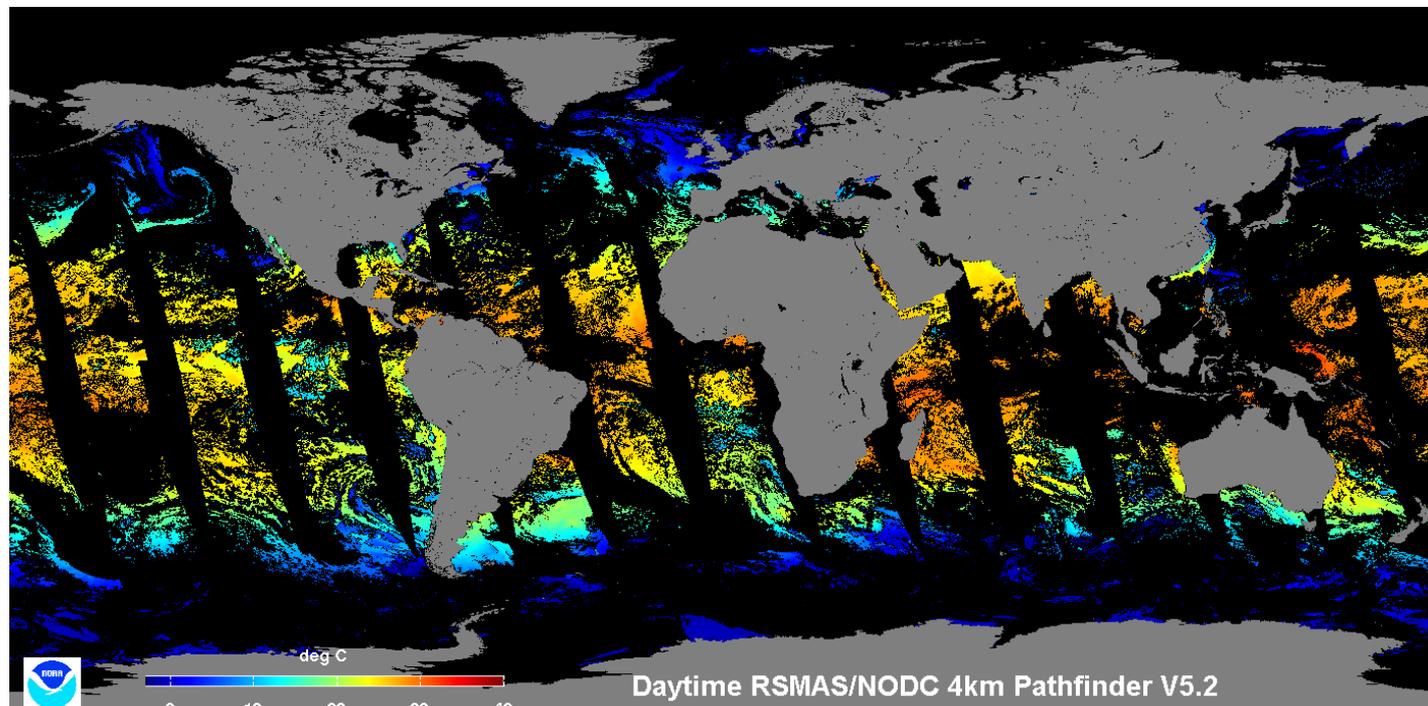


OISST : Optimally Interpolated SST

- Challenges include:
 - OISST has been implemented independently, code base is 25 years old, improved/patched extensively
 - Both NCDC and NWS depend upon a few individuals (incl Dick Reynolds) to maintain code and sustain production
 - Multiple versions being produced, distributed, and used by different NOAA entities
 - NCEP/NWS producing and using V1 and V2 OISST weekly and monthly
 - NCDC producing daily V2 OISST
 - Need to 'harden' code and fully integrate OISST into a broader NOAA operational system
 - Need to sustain concurrent production of multiple versions to meet user requirements
 - Consolidate production to ensure quality/consistency?

Example: Pathfinder SST

- Pathfinder SST developed at UMiami using both NASA and NOAA support
 - Applied to AVHRR, MODIS, VIIRS
- Operational Pathfinder SSTs stewarded by NODC for multiple purposes, CEOS-VC, used in GHRSSST
- Pathfinder AVHRR SST v5.2 became a NOAA CDR in 2011 adhering to CDRP standards
- Served by NODC & partners (e.g. PODAAC) and code/data archived at NCDC



Conflicting Requirements and Drivers

- CDR Program (NCDC) : desires a mature CDR (v5.2), maintain production going forward using latest AVHRR data; needs to extend SST CDR to VIIRS eventually
- NODC & GHRSSST : “cutting edge” best available SST to provide to its users (v6) and CEOS-VC
- UMiami : “bleeding edge” development, pushing the envelope to a better product (v7), VIIRS, MODIS, AVHRR

Are there enough funds to sustain all activities concurrently?

Complicated by Inter-dependencies

Typical for many CDRs

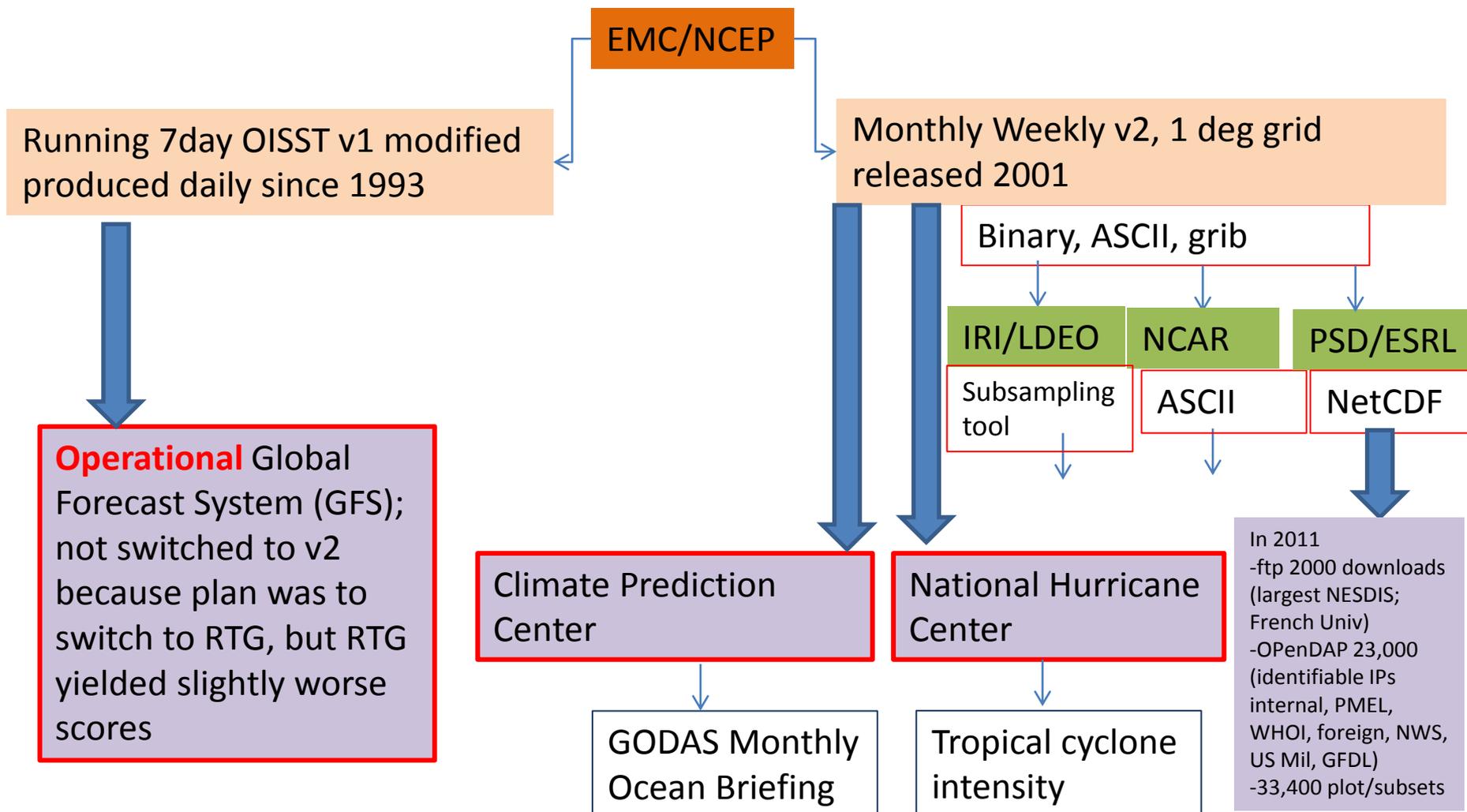
- NOAA's Dependency on UMiami for production
 - NODC can process given the code and coeffs but does not yet have the capability to derive coefficients independently
 - NCDC only has an archive and programmatic functions
 - NCDC/CDRP funding limited
 - NODC funding even more limited
 - UMiami only has limited time and funding
- Need to develop/extend to VIIRS
 - Who can pay for this development?
 - Extend v5.2 to VIIRS? Switch to v6 and then extend to VIIRS?
- Other CDRs : Mittaz and Harris – new AVHRR L1b FCDR
 - How to leverage? New Pathfinder SST effort?

Discussion

Weekly & monthly OISST

Reynolds & Smith (1994) is v1 = 1927 citations

Reynolds et al (2002) is v2 = 1147 citations



Daily OISST v. 2

Reynolds et al. (2007) is v1 = 187 citations

Reynolds (2009) is a web pdf that describes v2

