

I-COADS Data and Products

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Topics

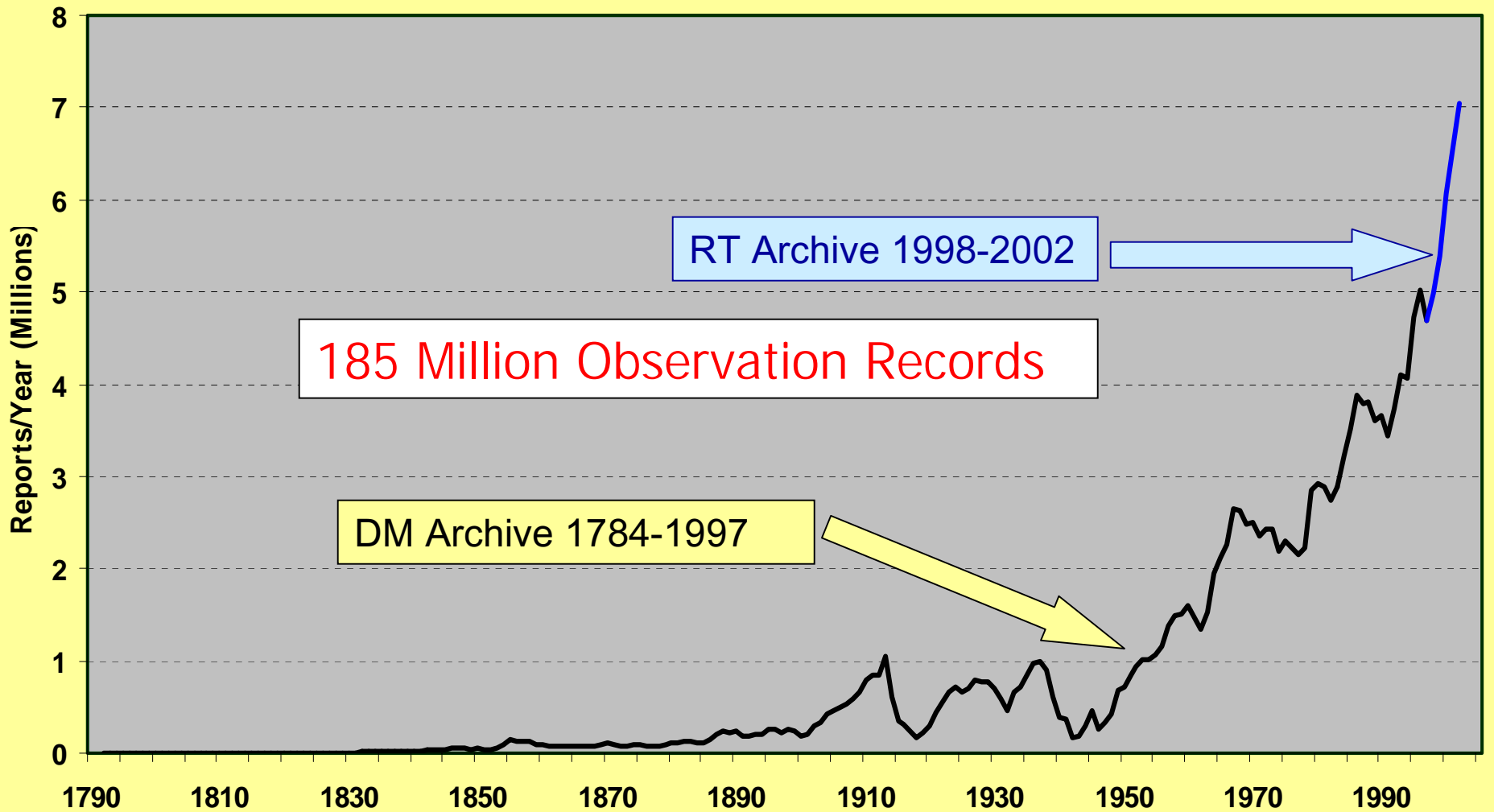
- Background
- Status
- Plans

Background

- Three-way collaboration since 1981
- Partner organizations and PI's
 - NOAA/NCDC, (Dick Reynolds, Joe Elms)
 - NOAA/CDC, (Scott Woodruff)
 - NSF/NCAR, (Steven Worley)
- U.S. Government and Academic @ start
- Now, International-COADS (I-COADS)

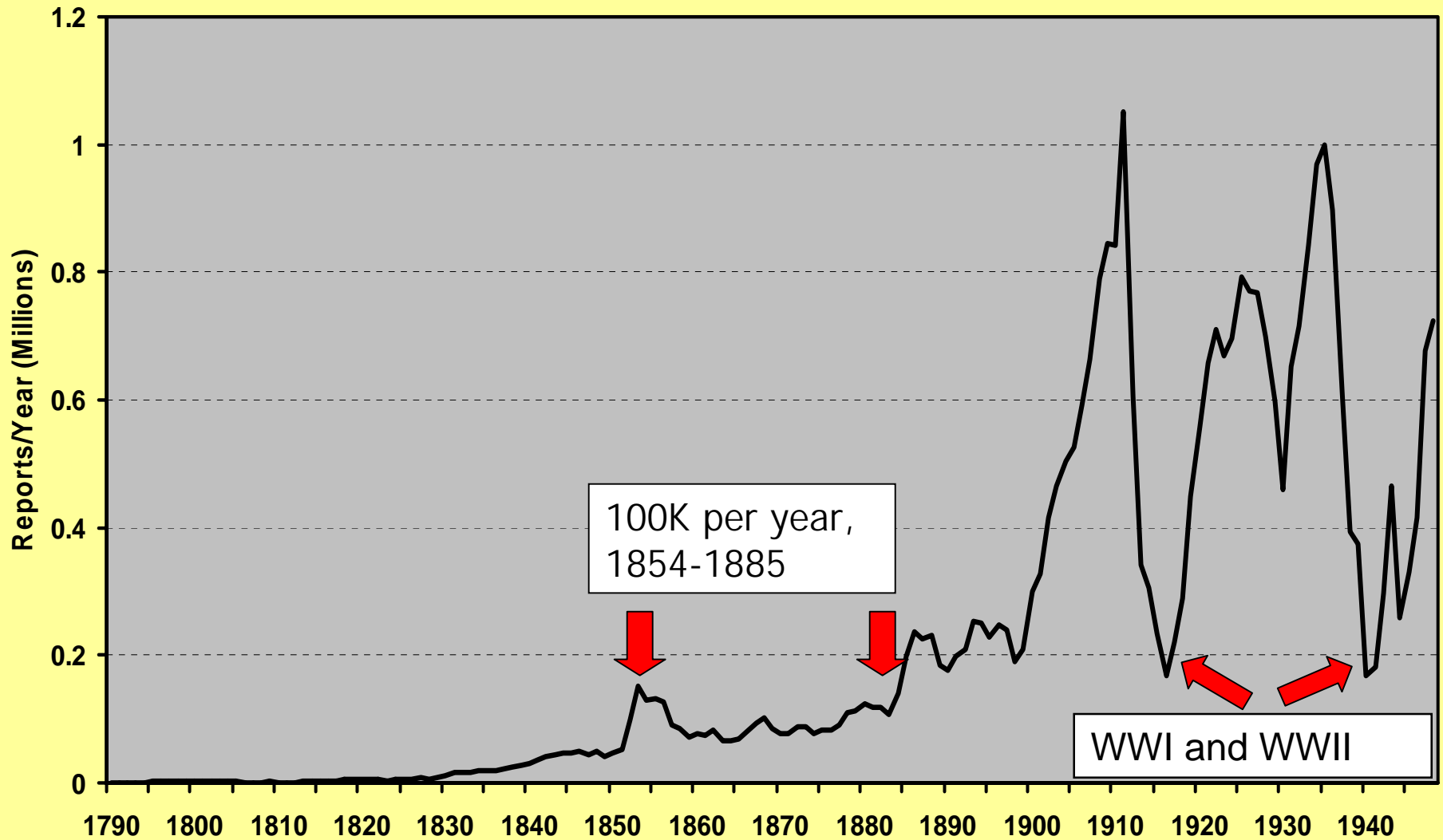
Current Status, Release 2.0

I-COADS Release 2.0, 2003
DM 1784-1997, RT 1998-2002



Current Status, Release 2.0

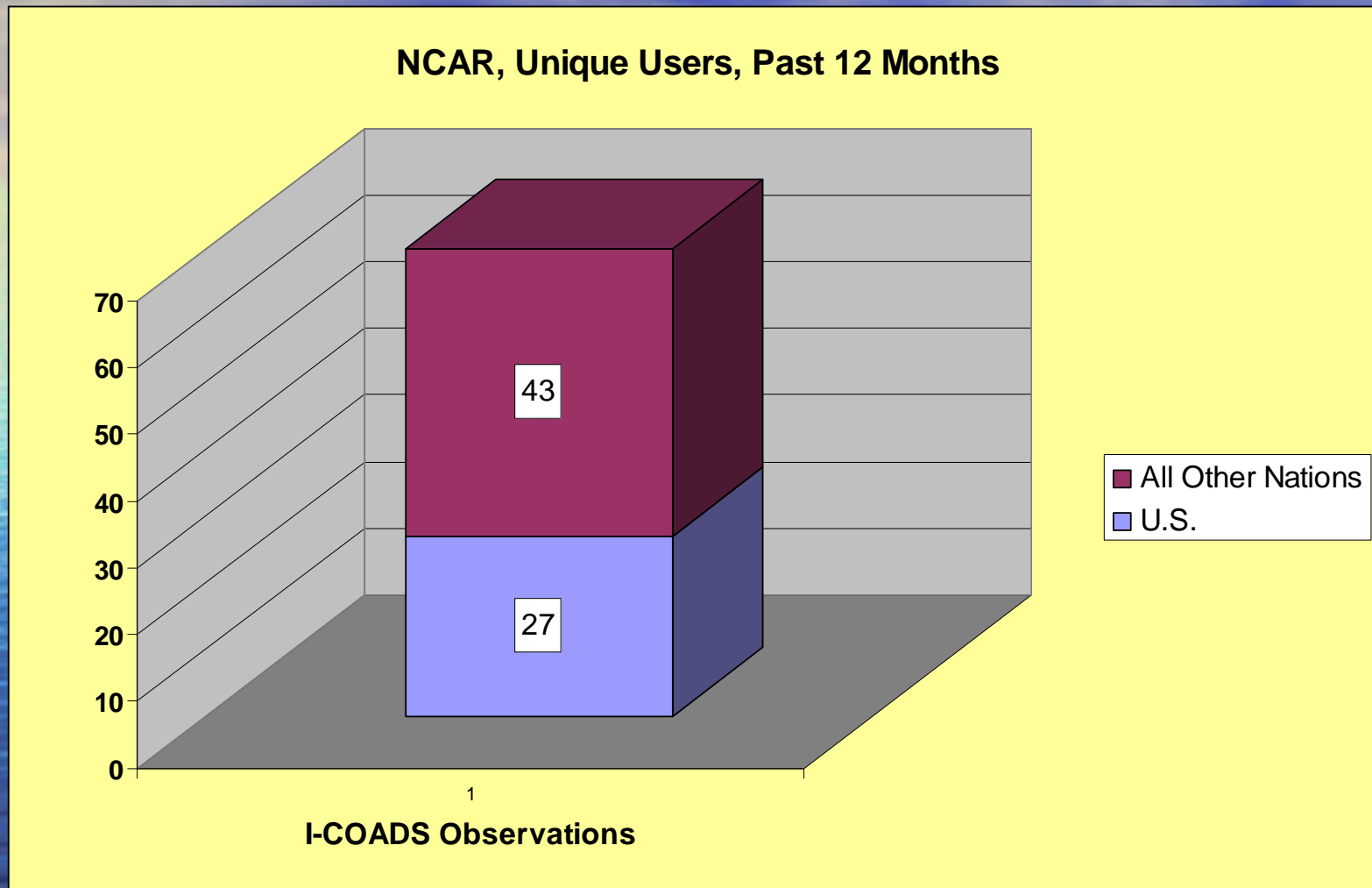
I-COADS Release 2.0, 2003
DM 1784 -1950



Data Availability

- Observations
 - NCAR
 - 1784 - 2002 binary formatted archive is online
 - ASCII format available by online request
 - Select region
 - Select time
 - Select variables
 - Select quality flags and options
 - Delayed mode delivery via pull FTP

Data Availability, Observations @ NCAR



<http://dss.ucar.edu/pub/coads/forms/>

Data Availability

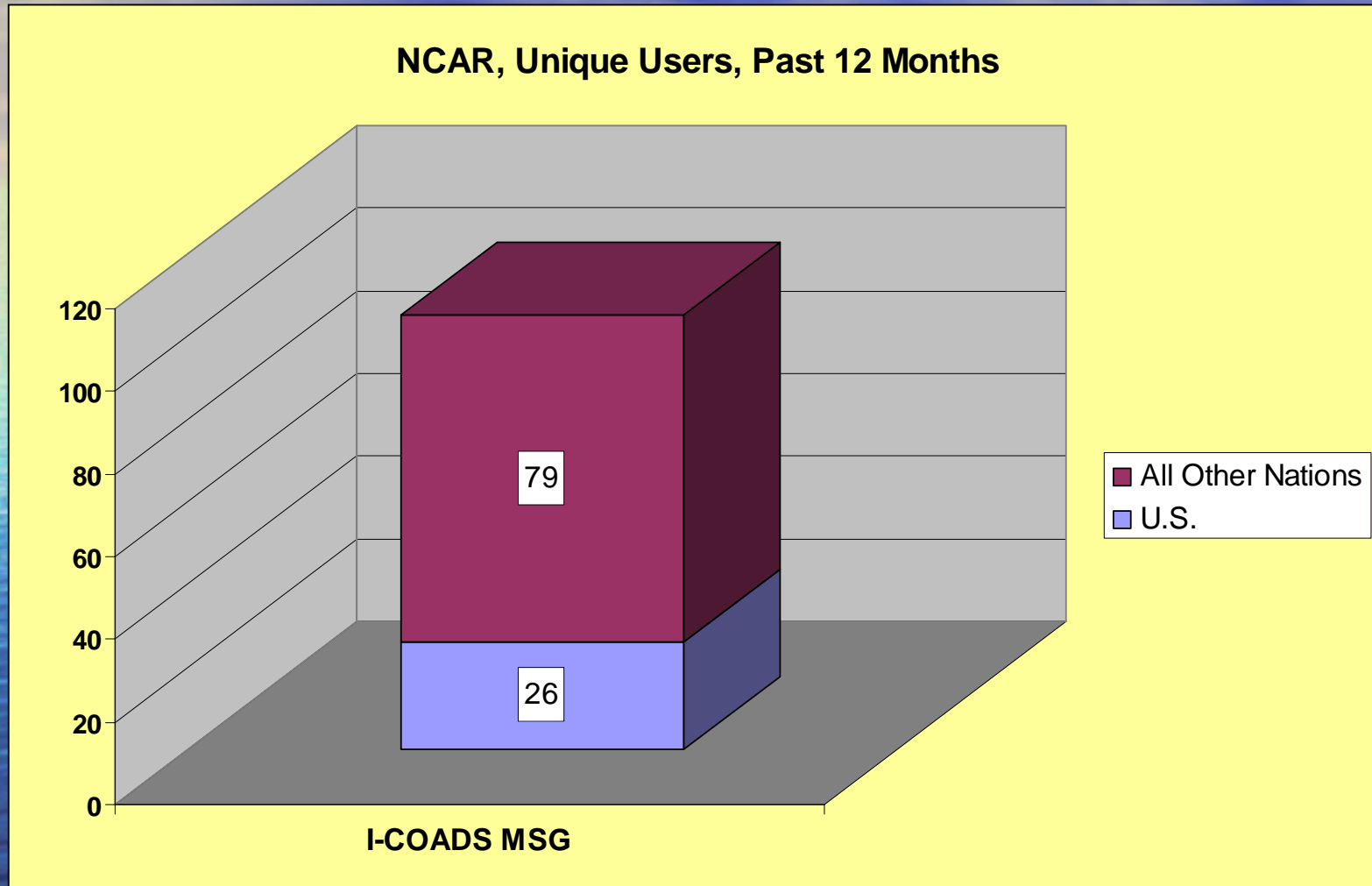
- Observations
 - CDC
 - Derived from NCEP GTS
 - 1991-current, online, ASCII
 - Updated monthly
 - Only Basic Variables
 - Primary Usage
 - Extend I-COADS to near real-time

<http://www.cdc.noaa.gov/coads/nrt.html>

Data Availability

- Monthly Statistics
 - $1^{\circ} \times 1^{\circ}$, 1960 - 1997
 - $2^{\circ} \times 2^{\circ}$, 1800 – 2002
- NCAR
 - Access equivalent to observations
 - Full binary format archive is online
 - ASCII format with subset selection capability
 - Very popular user interface

Data Availability, MSG @ NCAR



<http://dss.ucar.edu/pub/coads/forms/>

Data Availability

- Monthly Statistics
 - CDC
 - I-COADS 1° and 2° netCDF format files
 - Through 1997 now, to be updated through 2002
 - 2° extension based on NCEP GTS
 - ASCII 1998 - current
 - NetCDF 1991 - current

http://www.cdc.noaa.gov/coads/coads_cdc_netcdf.shtml


<http://www.cdc.noaa.gov/cdc/data.nmc.marine.html>

Data Availability

- Monthly Statistics
 - CDC, Live Access Server (LAS), Public Debut
 - Interactive interface
 - Database – CDC I-COADS netCDF archive
 - To be updated through 2002 soon
 - visualize
 - subset variables, choose output file format
 - compare (difference) data grids

<http://www.cdc.noaa.gov/coads-las/servlets/dataset>

Data Availability, CDC LAS, Constraints Interface



I-COADS Data Server

Search:

[single data set](#) [compare two](#)

[Datasets](#)
[Variables](#)
Constraints
[Output](#)

[Output Options](#)
[Previous Output](#)

[Define variable](#)

[About](#)

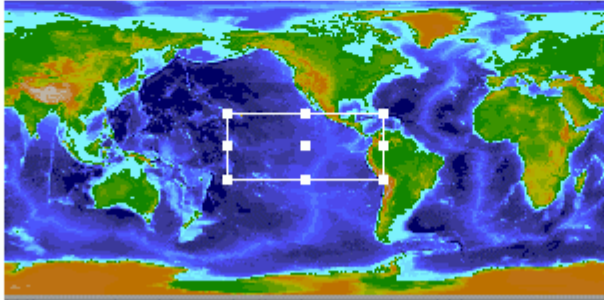
Datasets > NCEP Real-time Marine > 1. Sea Surface Temperature
Variable(s): **1. Mean of Sea Surface Temperature**

Select your desired view (geometry of output) and output (type of product). Then set the 4-D region (lon-lat-depth-time) and any additional constraints. [Help](#)

Select view:

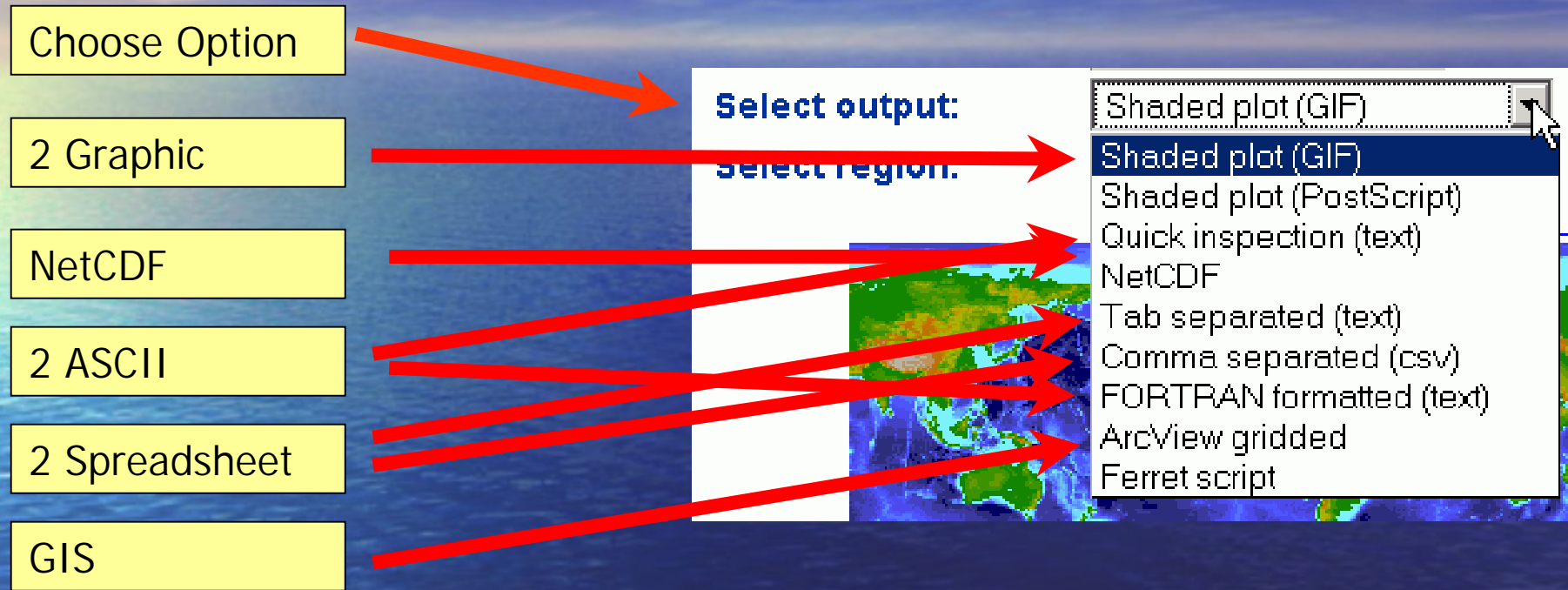
Select output:

Select region: [Don't use map applet](#)

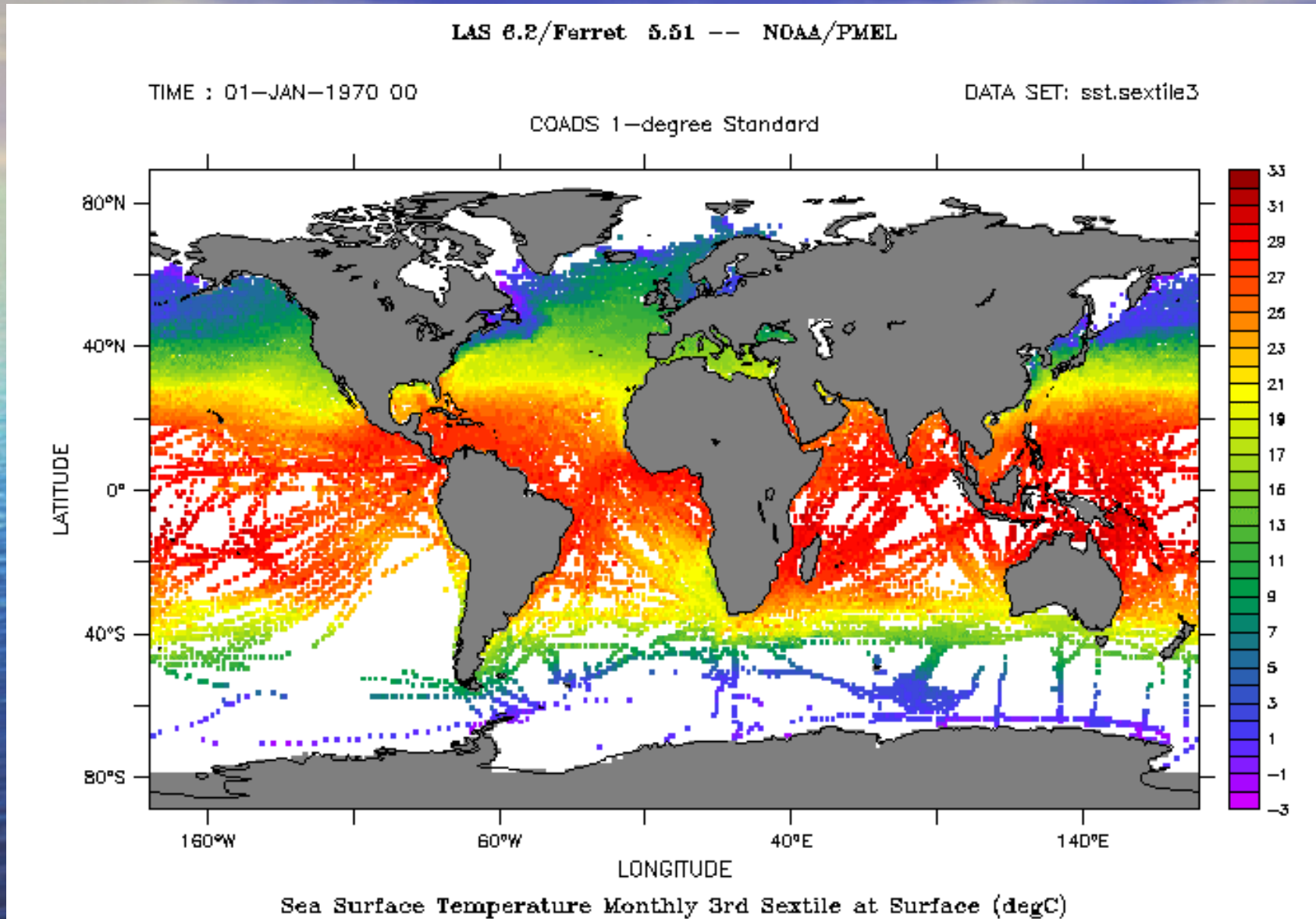


Select time:

Data Availability, CDC LAS, Output Options



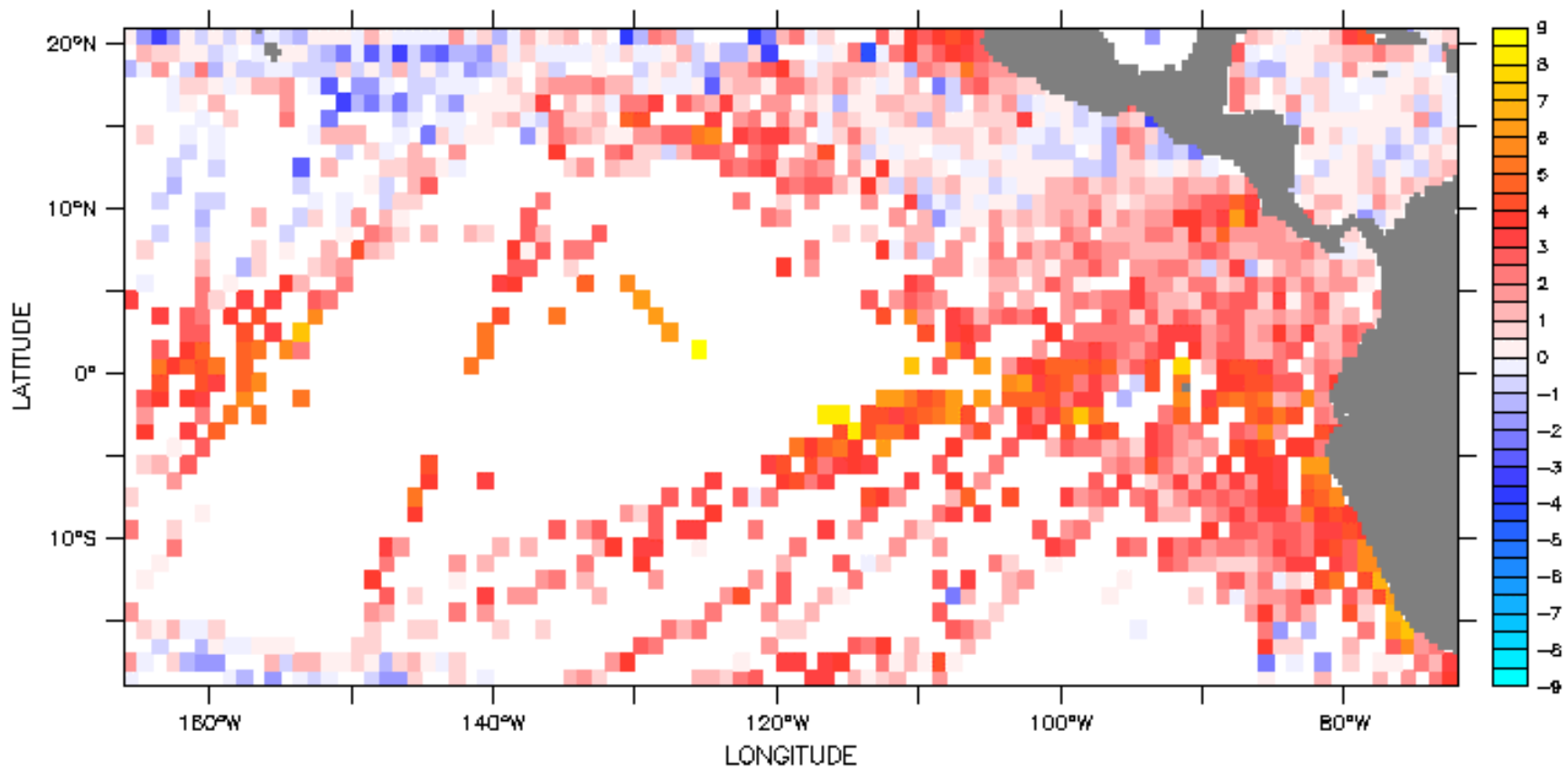
Data Availability, CDC LAS, 1° 01/1970 SST Median



Data Availability, CDC LAS, 1°, SST Median, Jan.1983 – Jan.1989, Niño – Niña difference

LAS 6.2/Ferret 5.51 -- NOAA/PMEL

Time(1):'01-Jan-1983' Time(2):'01-Jan-1989



File (Median) of Sea Surface Temperature from COADS 1-degree Enhanced(1) - 2. Third Sextile (Median) of Sea Surface Temperature from COADS 1-degree

Data Availability

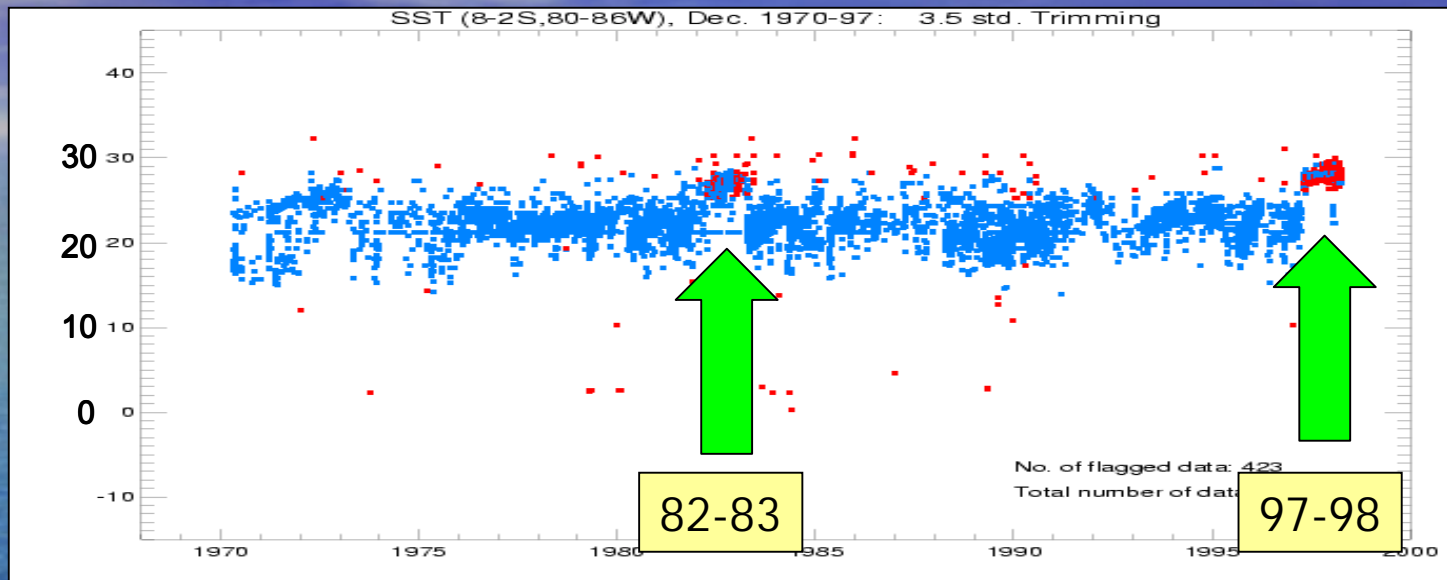
- **Advanced Products and Analyses**
 - **New Adaptive QC trimming**
 - **Monthly SST, 2°x2°, 1800-1997**
 - **A few details**
 - **Authors: Tom Smith (NCDC) , Xiao-Wei Quan (CDC)**
 - **Observational outliers are trimmed according to a reference climatology that varies with the climate signal**
 - **See link for other details and publication references**
 - **Access from NCAR, binary or ASCII (subsets)**

<http://dss.ucar.edu/pub/coads/forms/msg/msga.form.html>

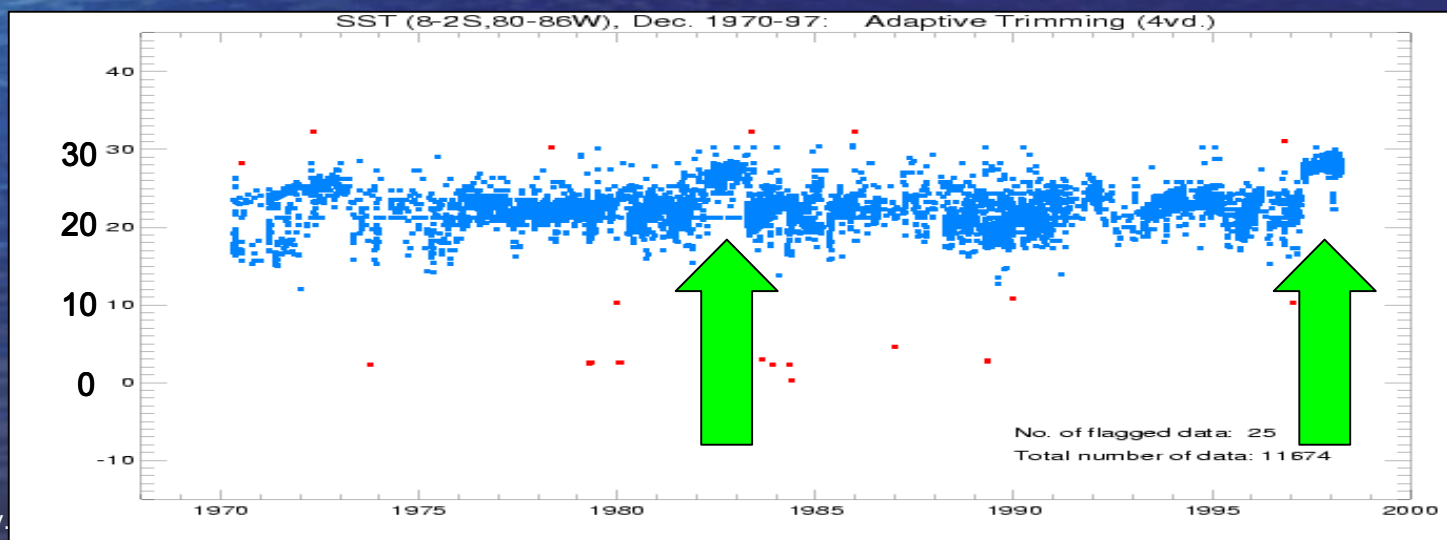
Data Availability, Adaptive QC SST

Decembers 1970-1997, 8-2S, 80-88W , Red = Trimmed Observations

Original
Trimming
via
fix climate



Adaptive
Trimming
via
varying climate



Data Availability

- **Advanced Products and Analyses**
 - **Extended Reconstructed SST and SLP**
 - Authors Tom Smith and Dick Reynolds (NCDC)
 - Monthly SST, 2°x2°, Global, 1854-2002, continuing
 - Monthly SLP, 2°x2°, Global, 1854-1997
 - Land and Ocean
 - **Access from NCDC, ASCII format**

<http://lwf.ncdc.noaa.gov/oa/climate/research/sst/sst.html>

<http://www.ncdc.noaa.gov/oa/climate/research/slp/index.html>

Plans

- Transitioning archive to IMMA format
 - International Marine Meteorological Archive (IMMA)
 - Why?
 - IMMA is an ASCII format – easier to use?
 - Gaining acceptance by WMO – JCOMM Expert Team for Marine Climatology
 - Encourage I-COADS data contributors to use it
 - Insures accuracy from data providers
 - Easier to grow I-COADS
 - Well documented, and proven successful
 - Project examples: CLIWOC, RT at NCDC, NCEP GTS

Plans, IMMA

- **Basic format concepts**

Core segment – fixed length

+

Original data attachments

Historical data
GTS data
Special formats
Aux. QC info.



Working Principles

- Core segment
 - All commonly used variables
 - Fixed length ASCII (108 characters)
 - Alone will be sufficient for most users
- Original data attachments
 - Contains special fields not in Core
 - Can be used to improve, repair, and recreate Core

Great format for:

- an irreplaceable data archive
- ensure easy software access (ascii based)

<http://www.cdc.noaa.gov/coads/e-doc/imma/>

Plans, Real-time data for I-COADS

- Observations from NCDC
 - Features
 - Based on NCDC GTS data stream
 - Web and FTP access
 - Pilot activation date: September 2004
 - Fast access b/c database system
 - Will include the full historical archive
 - Preparation so far
 - Cross-checks NCDC GTS and NCEP GTS streams
 - show good agreement and mutual accuracy

Plans, Real-time I-COADS data

- Steps beyond real-time data provision
 - Archive two GTS data streams
 - Compute Monthly Statistics
 - Generate @ CDC
 - Lag time ~ 1 month
 - Benefit:
 - More complete records
 - Standard QC
 - Standard format
 - Currently not high priority

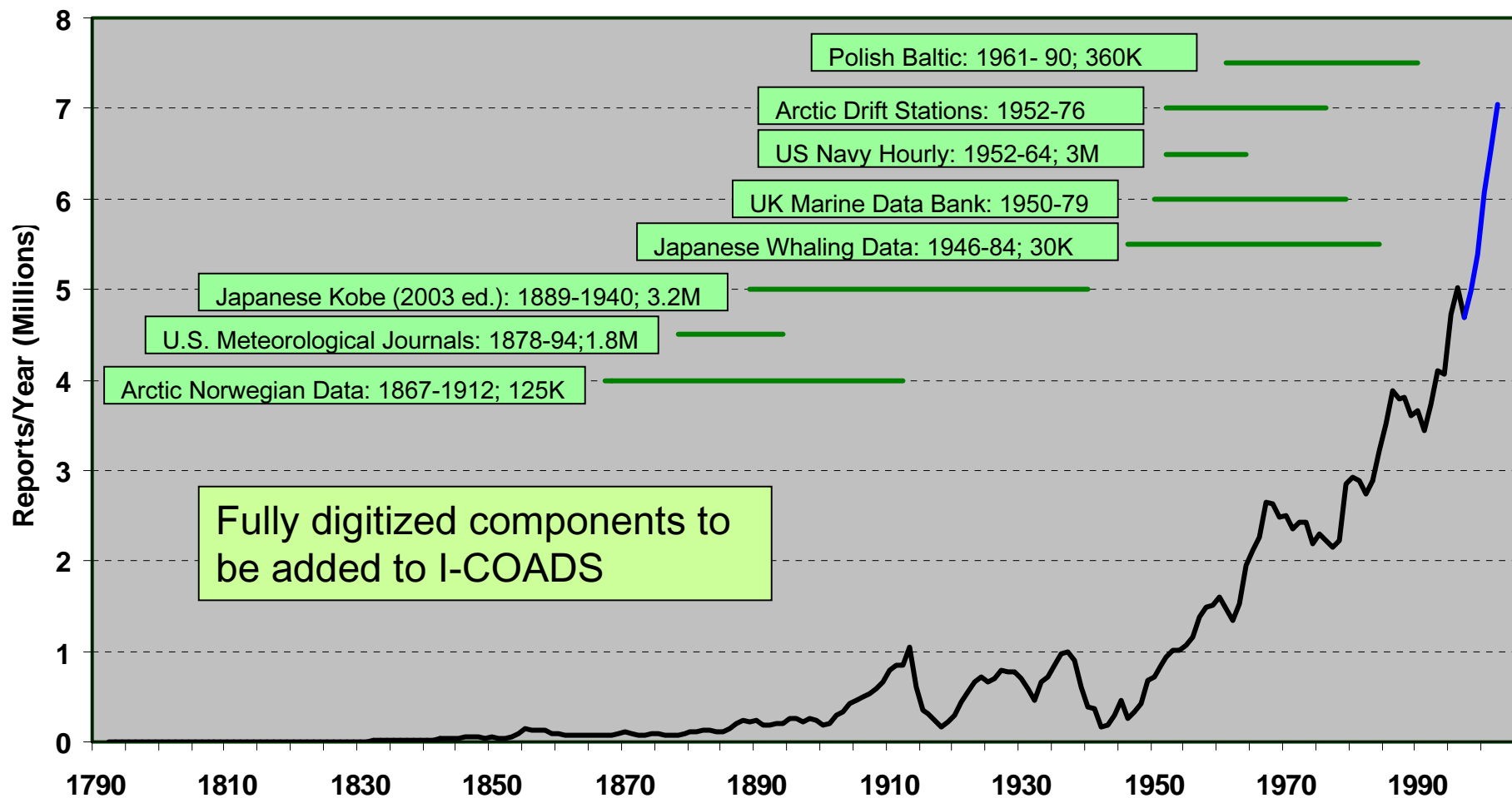
Plans, Future data Inclusions

- Details given by Scott Woodruff in a presentation for 150th Celebration
- [Light overview here](#)

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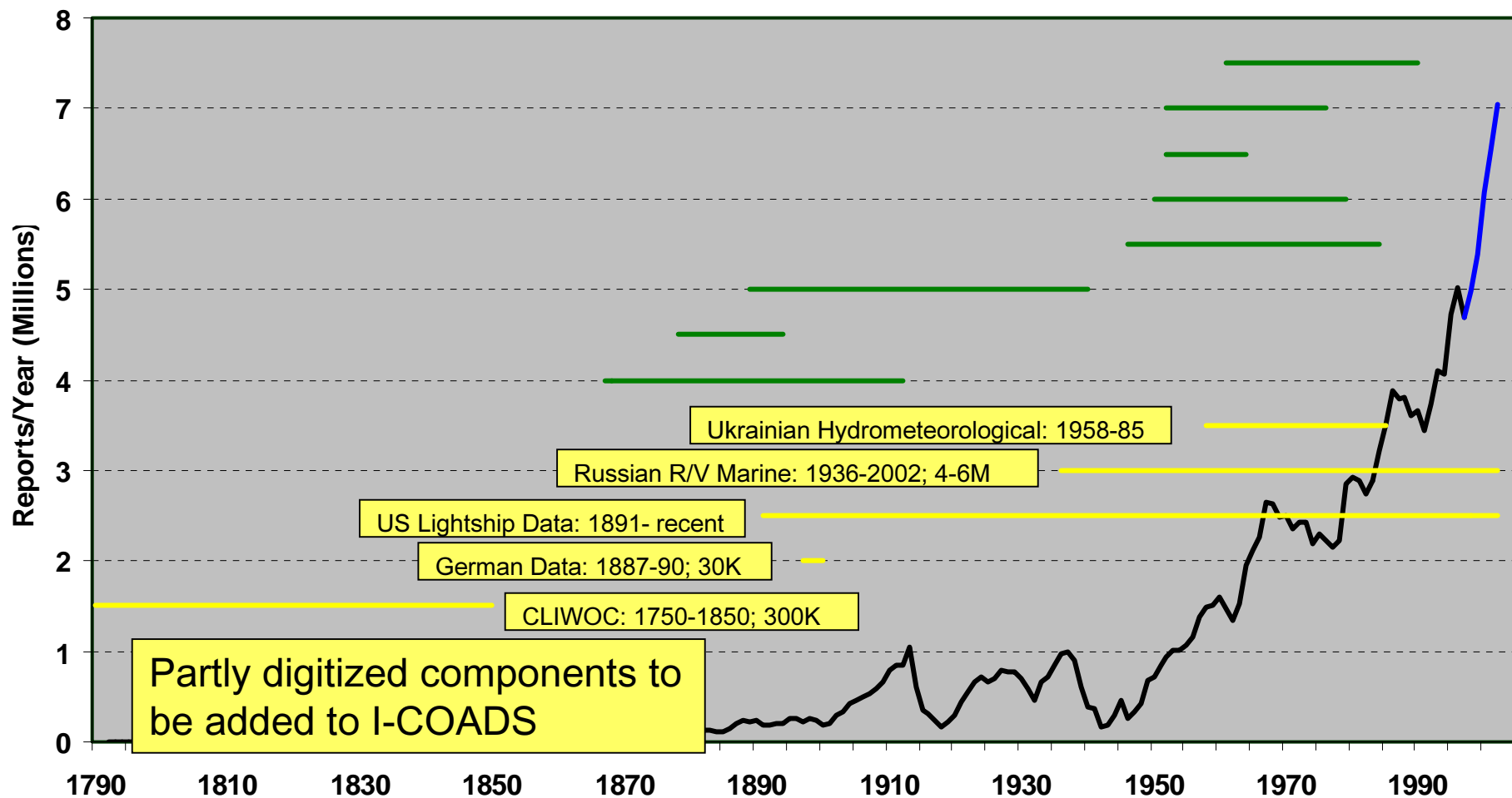
Future Candidates: red(undigitized), yellow (partly), green (fully)



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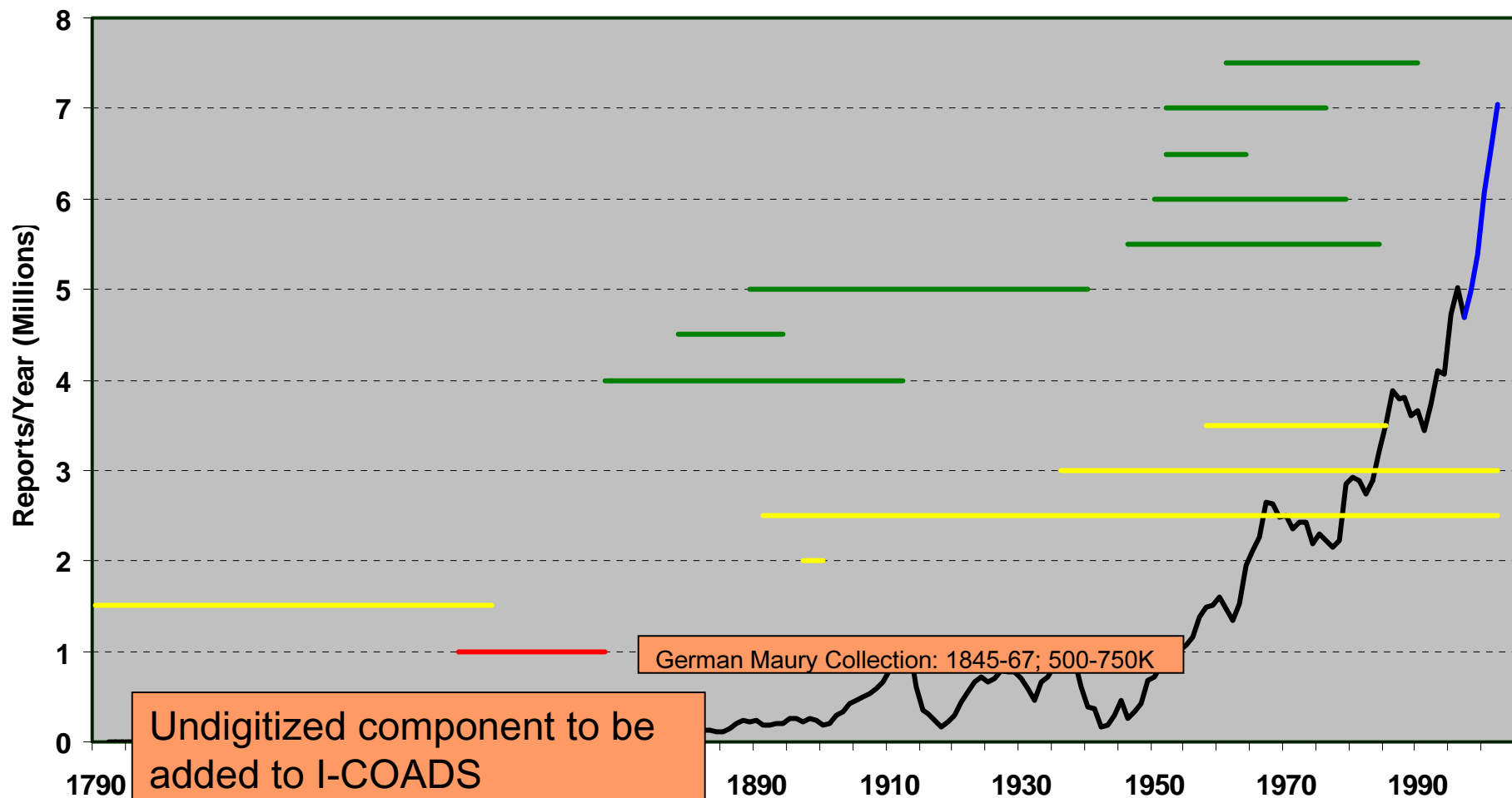
Future Candidates: red(undigitized), yellow (partly), green (fully)



I-COADS Release 2.0, 2003

DM 1784-1997, RT 1998-2002

Future Candidates: red(undigitized), yellow (partly), green (fully)



Plans, Future data Inclusions

- Early access to new data sources
 - Availability before merge into I-COADS
 - Termed “add on” dataset
 - Features
 - Data are subjected to climate trimming
 - In an I-COADS format
 - Unique and important data
 - E.g. Kobe Observatory and CLIWOC data
 - From NCAR

<http://dss.ucar.edu/datasets/ds530.0/>

Plans, Web Status and Developments

- New “Data and Metadata Page”
 - New look
 - Organized by data products
 - Eliminated the CDC/NCAR/NCDC structure
 - I-COADS metadata
 - Software and documentation
 - Graphics and figures to show I-COADS inventories
 - Ship metadata – Pub47 (1973-1999)
 - Most products mentioned here are linked to this page.

<http://www.cdc.noaa.gov/coads/products.html>

Plans, Web Status and Developments

- "Related Data and Resources"
 - Links to Projects and Organizations
 - VOSCLIM
 - CLIWOC
 - JCOMM
 - Links to Associated Data
 - JISAO Climatologies (Mitchell UW)
 - 1° global
 - Extended Reconstructed Analyses (NCDC)

Grow this area, link more projects and data

<http://www.cdc.noaa.gov/coads/related.html>

Conclusions

I-COADS is international

1998-2002 update available now

Many access points and formats

New analyses are available

New format (IMMA) will be future standard

I-COADS real-time observations – coming next year

Thanks!

