

Follow-up to WOAP Frascati Workshop on Satellite-related Global Climate Datasets: Dataset inventories

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2007 – AOPC was asked by its surface pressure working group for formal recognition of the group’s database as a GCOS repository

2007 – The GCOS SC decided GCOS should not formally recognize datasets as meeting GCOS requirements; requested instead production of a document to guide dataset generation and documentation

2008 – AOPC reviewed a Guideline drafted by the Secretariat

2009 – First version of guideline “for satellite-based datasets and products ...” was published by GCOS

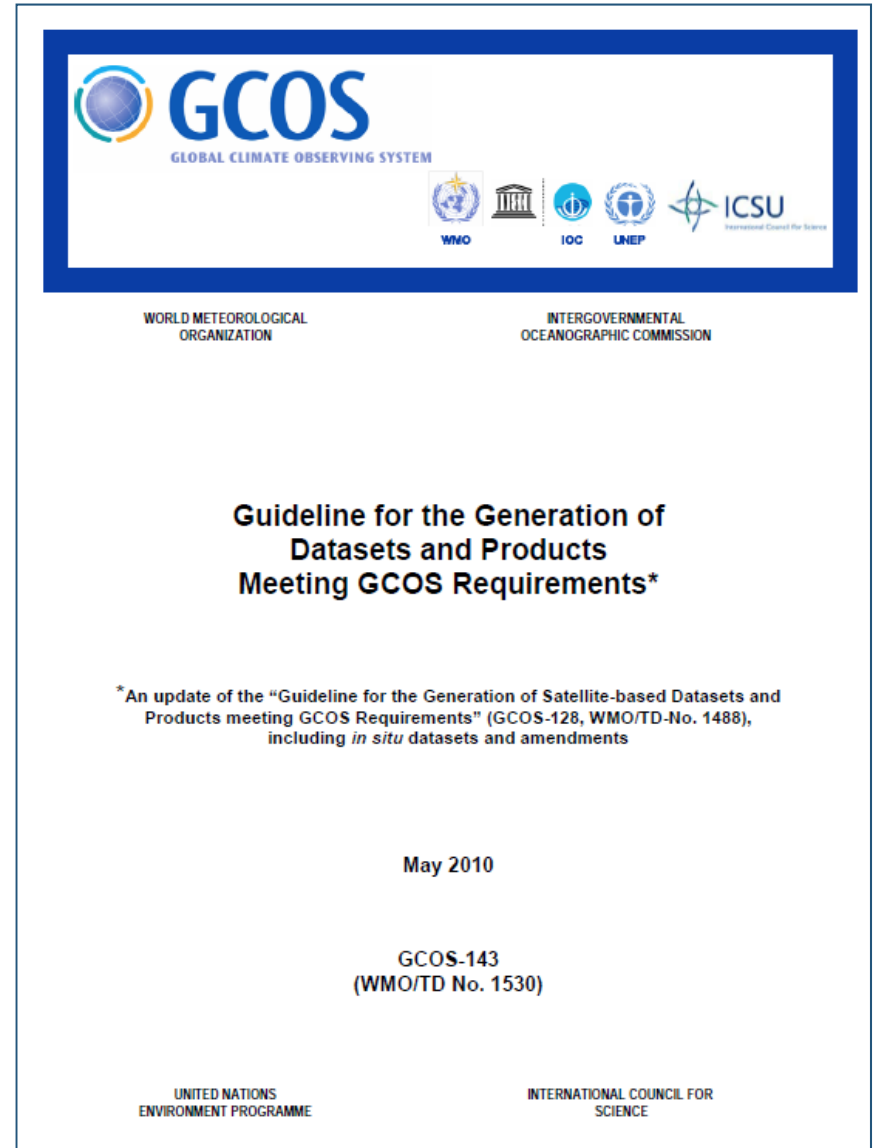
2009 – AOPC asked for a review and extension to cover *in situ* data

2010 – Updated and generalized Guideline was published as GCOS-143

Contents:

1. Purpose of Document
2. Guideline
3. Background: Requirements and guidance
4. Terminology

Annexes



The guideline: Items to which producers of FCDRs and ECV products should pay particular attention

FCDR: Fundamental Climate Data Record

ECV: Essential Climate Variable

1. Full description of all steps taken in the generation of FCDRs and ECV products, including algorithms used, specific FCDRs used, and characteristics and outcomes of validation activities
2. Application of appropriate calibration/validation activities
3. Statement of expected accuracy ⁶ , stability and resolution (time, space) of the product, including, where possible, a comparison with the GCOS requirements
4. Assessment of long-term stability and homogeneity of the product
5. Information on the scientific review process related to FCDR/product construction (including algorithm selection), FCDR/product quality and applications ⁷
6. Global coverage of FCDRs and products where possible
7. Version management of FCDRs and products, particularly in connection with improved algorithms and reprocessing
8. Arrangements for access to the FCDRs, products and all documentation
9. Timeliness of data release to the user community to enable monitoring activities
10. Facility for user feedback
11. Application of a quantitative maturity index if possible
12. Publication of a summary (a <u>webpage</u> or a peer-reviewed article) documenting point-by-point the extent to which this guideline has been followed

which can be achieved through appropriate entries in a web-hosted inventory

2008 – WOAP expressed need for user guidance on quality of reanalysis products, especially due to “proliferation” of reanalyses

2009 – WCRP and SCOPE-CM expressed concern over need for dataset review and intercomparison

2009 – The GCOS SC called for further elaboration of the issue of peer review of climate datasets, noting that the next meeting of WOAP would be an appropriate forum to consider this subject

2010 – WOAP discussed issue; proposal for workshop was supported by ESA

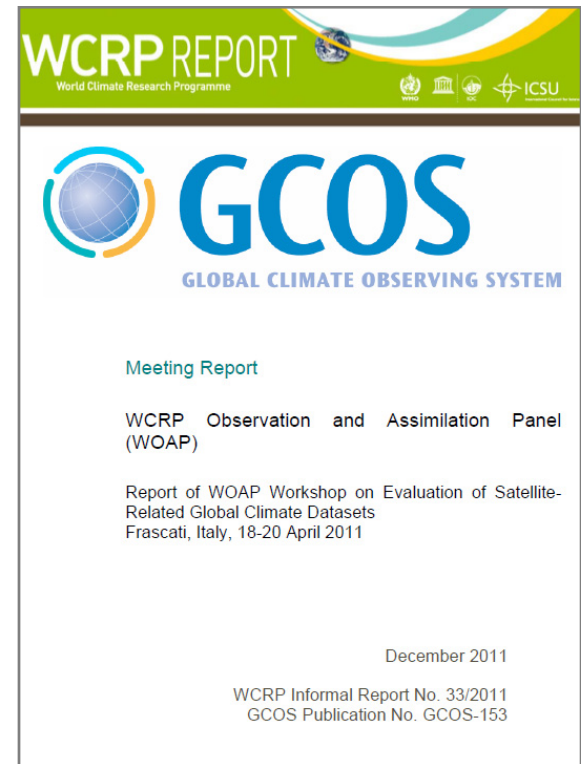
2011 – Workshop on Evaluation of Satellite-Related Global Climate Datasets was hosted by ESA 18-20 April in Frascati

Objectives

- Evaluate some Essential Climate Variable (ECV) datasets against the GCOS Guideline
- Provide a framework for future evaluation of global climate datasets
- Assess value of establishing an inventory of the status of datasets

Ideas were explored and developed for eight ECVs

- Atmosphere:
 - Cloud properties, Surface radiation
- Ocean:
 - Sea ice, Sea-surface temperature, Surface winds
- Land:
 - Fraction of absorbed photosynthetically active radiation, Soil moisture, Snow cover



Workshop developed proposal for inventory of datasets

15 items were identified for each dataset, mirroring many elements of the GCOS guideline

- but one inventory entry reads “Description of how the effort adheres to the twelve GCOS guidelines”; there is some scope for rationalising the inventory and guideline

The GCOS SC supported further GCOS/WCRP collaboration on this, and

- “agreed that GOSIC would be a good place to host the inventory, and negotiations should be carried out with GOSIC to ensure that a robust process can be established and maintained”
- GOSIC is the Global Observing Systems Information Center, a portal to facilitate access to global climate datasets, supported by NCDC and the US GCOS Program

Chair of WOAP subsequently continued discussions with NCDC to this end

A paper has been prepared proposing that NCDC and GCOS develop a joint project, initially for at least three years duration

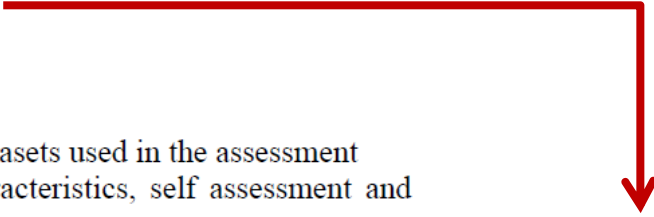
- Inventory entries would be included in new Web Accessible Folder in ISO 19115-2 standard format being implemented by NCDC
- NCDC is developing an online form for dataset producers to supply such metadata
- GCOS/WCRP panels would provide overall assessment of entries

Proposal will be considered by the GCOS SC in September

Other issues

- Link with NCAR Climate Data Guide, obs4MIPs, reanalysis.org, ...
- Link with CEOS Working Group on Climate questionnaire related to ECV inventory
- Need to promote and cater for inclusion of datasets based on *in situ* measurements
- Continuing need to promote independent assessment and intercomparison of datasets

1. Date of this inventory entry
2. Dataset name
3. Lead agency and investigator
4. Geophysical parameter and related ECV
5. Intended uses and users (existing or potential)
6. History and outlook; sustainability
7. Availability (web/ftp, restrictions, is it registered with DOI system)
8. Maturity (e.g. Bates & Barkstrom (2006) maturity index)
9. Description of how the effort adheres to the twelve GCOS guidelines
10. Strengths and weaknesses or limitations
11. Uncertainty estimates, possibly as a function of time
12. Long-term homogeneity and stability
13. Have there been self and independent assessments? Identify other datasets used in the assessment
14. References to the publication of the algorithm theory, FCDR characteristics, self assessment and independent assessments
15. Dataset details:
 - ⤴ Product version number
 - ⤴ Time period covered
 - ⤴ Spatial coverage (global, Arctic, etc.)
 - ⤴ Spatial and temporal sampling intervals
 - ⤴ Based on what fundamental climate data records (FCDR)
 - ⤴ Ancillary inputs used to derive product
 - ⤴ Other datasets used in the development of this product:
 - ⤴ Output data product contents
 - ⤴ Output product format(s)



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