1. Overview

As part of the International Surface Temperature Initiative efforts are being made to create a new data holding with provenance and version control of land meteorological records (all variables) at monthly, daily, and sub-daily resolutions. The data rescue component involves partnering with established initiatives in this area and ensuring that their output pulls through. Efforts are underway to secure funding for a crowdsourcing portal for millions of images held in the NOAA Foreign Data Library.

2. The basic problem

There exist very many land meteorological records that are available only in hard copy or image form. These records cannot be readily used in a myriad of scientific contexts without first converting into a digital format and making them easily available through one or more recognized repositories.

• Prior to the 1960s many more non-digitized records than digitized globally
• Even after the 1960s not all data is digitized and readily available
• Data for many regions which are currently poorly sampled in global data records
• Data in many cases is rotting away and seen by the owners as a nuisance. If we do not rescue it now it will be gone forever.
• In other cases owners have economic or political concerns that preclude sharing (despite WMO resolution 40).

• This data underpins science but its rescue is not inherently very appealing to most traditional funders who like to see science analysis and outputs.

3. Applications of rescued data

• Construction of traditional climate data products (e.g. temperatures, precipitation, humidity, pressure)
• Production of long-term reanalysis products (e.g. 20CR reanalysis)
• Construction of normals and extremes indices for use by science, industry and society
• Creation of derived products such as heat stress / thermal comfort
• Improved understanding of historical climate variability and changes
• Application to impact studies

4. Data rescue coordination

The authors of this poster have set up a task team to ensure that any existing data rescue activities get ingested into the databank and to explore novel techniques for improving the prospects of data rescue. This is not an exclusive team and we both need and welcome help from others (e.g. you) to ensure the most comprehensive and usable archive possible.

• Databank prototype is available at http://www.iedro.org/
• Local scientists will almost certainly have the best local knowledge and connections regarding what data exists. Also, likely best placed to access the data and argue for their release.
• Data from a single station is still useful, we do not need a thousand stations to be interested.
• Data from regions or eras that are currently poorly sampled are of particular interest.
• Data rescue task team members and the activities they represent can bring a range of tools to address data rescue.
• You can help digitize records through crowdsourcing portals.
• We are working to secure funding for a portal to crowdsource the several million images held in the NOAA Foreign Data Library.

5. Got a lead to a new data source?

Please email data.submission@surfacetemperatures.org and we will help to coordinate with others the most effective way to rescue the data and ensure its addition to the databank.

6. Useful links and resources for land data rescue activities

Data rescue activities
Atmospheric Circulation Reconstructions over the Earth (ACRE) http://www.met-acre.org
International Environmental Data Rescue Organization (IEDRO) http://www.iedro.org
NOAA Climate Database Modernization Program (CDMP) http://www.ncdc.noaa.gov/cgi/data/cdmp/cdmp.html
Mediterranean Climate Data Rescue (MEDARE) http://www.pmm.ucar.edu/MEDARE/index.html

Data rescue coordination http://badc.nerc.ac.uk/browse/badc/corral/images/metobs
Known image repositories
NOAA Foreign Data Library http://docs.lib.noaa.gov/rescue/data_rescue_home.html
British Atmospheric Data Centre http://badc.nerc.ac.uk/browse/badc/corral/images/metobs

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