



STATEMENT OF

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HOUSE COMMITTEE on APPROPRIATIONS

SUBCOMMITTEE on COMMERCE, JUSTICE, SCIENCE, and RELATED AGENCIES

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Introduction

Thank you, Mr. Chairman and Members of the Subcommittee for this opportunity to testify on the importance of awareness and support for the National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service, National Climatic Data Center, Climate Data Record Program (CDRP). I am Dr. L. DeWayne Cecil, Program Manager at Global Science & Technology, Inc. I have been at Global Science & Technology since January, 2012. Prior to joining GST I served the nation over a 31-year career in the federal sector with NOAA, NASA, the U.S. Geological Survey (USGS), and the U.S. Army. I appear, today, largely because of my responsibilities as the Climate Data Record Program Manager for GST with a keen understanding of NOAA's Climate Data Record Program for which we are strongly recommending a funding level for FY 14 of \$18M.

I am very appreciative of this opportunity to discuss the need to increase support for the CDRP. Climate Data Records (CDRs) are created by merging data from surface, atmosphere and space-based systems across decades. NOAA's Climate Data Records Program at the National Climate Data Center in Asheville, NC is focusing on data from satellites and from ground- and ocean-based (in-situ) observational networks. By applying knowledge gathered over time about satellites' performance and sensor characteristics and the performance of in-situ networks, the data are reprocessed to create consistent long-term records, allowing insight into changes in the Earth's environmental parameters, such as:

- Atmospheric and sea surface temperatures
- Snow and ice conditions
- Precipitation and clouds

Climate Data Records reveal the Earth's short- and longer-term environmental changes and variations, allowing scientists and decision-makers across society to better:

- Understand the weather and climate system
- Assess the state of the climate on regional, national, and global scales
- Project future climate states
- Inform economic decisions impacted by future weather and climate and extreme events such as the recent (December 2012) Superstorm Sandy

To accurately detect subtle environmental changes, it is vital that the measurements from different satellites be merged together and combined with appropriate data from in-situ observational networks and analyzed using proven scientific techniques. With changes and improvements to in-situ observational networks combined with a succession of satellites with different designs and changing performance qualities, combining all past and current observations into consistent long-term records is a major challenge. NOAA's CDRP addresses this challenge and provides authoritative and traceable long-term records for operation of decision support systems for thousands of stakeholders and partners. That is, these long-term climate data records have been transitioned from a purely research environment, through a systematic process that GST supports NOAA in at NCDC, to an operational basis where they are routinely used for decision support.

GST is helping NOAA develop this operational capability to reprocess archived in-situ and satellite data into long-term, consistent climate records that can be used by industry and scientists to understand and mitigate the impacts of climate variability and climate change. The results will provide trustworthy information on how, where and to what extent the land, oceans, atmosphere and ice sheets are changing. In turn, this information will be used by energy, water resources, agriculture, human health, national security, coastal community and other interest groups. Our CDR data will improve the Nation's resilience to environmental change and climate variability, maintain our economic vitality and improve the security and well-being of the public.

This Subcommittee was introduced to the satellite portion of the Climate Data Record Program in 2009 in a Hearing you convened. With this opportunity to speak with you, we are proud to report in the 3 years since that Hearing, that NOAA has successfully transitioned 12 Climate Data Records from research into an operational environment. An increasing number of stakeholders and users are now relying on the operational CDRs for energy and marine resource management, decision making, and near and long-term planning. Additionally, with routine availability of NOAA's operational CDRs, many stakeholders are improving their own decision processes and systems.

Specific examples of stakeholder engagement and usage of NOAA's operational CDRs are provided here in tabular form. In this table, I have listed the CDR, the sector utilizing these datasets, and the decision(s) that rely on utilizing these data.



Economic Sector, Industry, or Resource	Target Decision	Climate Data Record or Information
Energy	Sale/Purchase of Natural Gas	Outgoing Long Wave Radiation
Marine Resources and Fisheries	Management of National Marine Protected Areas and Commercial Fishing	Sea Surface Temperature (High Resolution)
Maritime Shipping	Ocean Shipping Routes in the Arctic	Sea Ice Extent
Operational Weather and Climate Services	Improved Forecasting and Prediction	Sea Surface Temperature (Low Resolution)
Coastal Resources, Infrastructure, Community Resilience	Hurricane Intensity Estimates, Rainfall estimates	Records Developed from Microwave Sensor data

The examples presented here affect multiple U.S. economic sectors and potentially affect the country's ability to respond to extreme weather events, protect infrastructure, and manage community growth. The decisions enabled by use of these example CDR datasets and associated products range from food and water resource management to the prudent utilization of a resource that is rapidly changing our nation's energy portfolio, natural gas.

But there are major concerns to the sustainability of the Climate Data Record Program in 2014 and beyond.

- (1) Over the last four years, NOAA's CDR Program conducted two competitive funding opportunities and awarded over 18 peer reviewed grants and contracts that will transition from research to operations over 50 additional operational CDRs. Any reduction in the budget will jeopardize this investment by not completing the transition to operations and losing the ability to sustain the new CDRs as well as the existing CDRs over time.
- (2) For the nation to fully realize the potential of utilizing a complete operational portfolio of CDRs and associated products, the funding level for the CDRP needs to be in the range of \$18-20M per year. The Program is currently funded at the FY12 level of approximately \$9M per year. One of the results of having to operate at FY12 funding levels has been significant cuts to GST staff and program expertise. The present funding level has also forced reductions in other competitive contracts and grant awards to the academic sector.
- (3) Any budget cuts to the CDRP would reduce the number of operational CDRs that could be supported. This would diminish the ability of business, industry and resource managers to continue to use operational CDRs for decision making and applications. Higher costs to the American taxpayers may occur due to the loss of the existing



operational CDRs (e.g. higher natural gas prices due to the lack of a 2-week forecast tool).

- (4) The nation's operational seasonal weather forecasts are provided by the National Weather Service's (NWS) Climate Prediction Center (CPC). Researchers at the CPC depend in part on data and records generated by NCDC's CDR Program. The loss or reduction of these data and records seriously jeopardizes our ability to respond to extreme weather and climate events.
- (5) A recent announcement by the NWS that precipitation gauges in the Historical Climate Reference Network throughout the southwest will be capped and no data will be collected due to budget cuts is actually an opportunity for our satellite precipitation CDRs and products to help fill a regional need for data for applications such as drought monitoring and response. This is especially relevant in the southwest. However, if the CDRP realizes further budget cuts from Congress, this application will not be fulfilled and there will be a serious gap in our understanding of and response to drought conditions in this area of the country.

Therefore, we respectfully request that in order to retain existing staff, fill critical staff shortages, maintain the existing operational CDRs and associated products, and develop essential new CDRs; we recommend that the CDRP core budget for 2014 be increased by \$10M annually.

We can't stress enough that by investing in the NOAA / NESDIS NCDC Climate Data Record Program we can significantly improve our understanding of the world around us allowing for more accurate and specific weather and climate forecasts and predictions and associated warnings and an improved understanding of the climate system as well as improved planning for responding to extreme events.

On behalf of Global Science & Technology; thank you so much for your time Mr. Chairman and members of the Subcommittee. We are grateful for this opportunity to request additional support for the NOAA / NESDIS NCDC Climate Data Record Program.

