

1. General Description of Data to be Managed

1.1. Name of the Dataset or data collection project [→ gmd:title].

Carbon Tracker Observing System

1.2. Keywords that could be used to characterize the data, and vocabulary from which those keywords were obtained (e.g., GCMD, CF Conventions, etc.) [→ gmd:MD_Keywords]

CO2

carbon dioxide

methane

CH4

greenhouse gases

carbontracker

trace gases

1.3. Summary description of the data to be generated [→ gmd:abstract].

The NOAA ESRL GMD Carbon Cycle Greenhouse Gases group (CCGG) makes ongoing discrete measurements of up to 45 atmospheric trace gases from a network of land and sea surface sites (from approximately 70 locations around the globe) and from small aircraft platforms (currently 15 sites, primarily focused on the North American continent). The group also makes these discrete measurements and continuous measurements of carbon dioxide, methane and carbon monoxide, from a network of tall towers (currently 7 sites) in the United States and from a subset of the five NOAA ESRL GMD baseline observatory sites.

1.4. Anticipated temporal coverage of the data [→ gmd:EX_TemporalExtent].

Measurements began in 1967 and continue to present. Coverage varies from location to location.

1.5. Anticipated geographic coverage of the data [→ gmd:EX_Extent]

Global coverage from approximately 70 sites.

1.6. What data types will you be creating or capturing? (e.g., digital numeric data, photographs, video, acoustic records, database tables, spreadsheets, paper records, physical samples, etc.)

Digital numeric data

1.7. How will you capture or create the data? (e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, etc.)

Data comes from measurement of air samples collected at surface sites, airplanes, and both short and tall towers above the surface.

1.8. Where will this plan be stored electronically besides in the NOAA DMP Repository?

File system for ESRL/GMD data management

1.9. What volume of data is anticipated to be collected in the Project Time Frame?

3Tb

1.10. Will the data contain Personally Identifiable Information or any information whose distribution may be restricted by law or national security?

No

2. **Points of Contact** (Give name, title, location, e-mail address, phone number and mailing address, as appropriate.) [→ gmd:CI_ResponsibleParty]

2.1. Who can, or could, represent this data collection project on NOAA's Data Management Integration Team (DMIT)? Current members of DMIT are listed at https://geo-ide.noaa.gov/wiki/index.php?title=DMIT_Membership.

Ken Masarie, Kenneth.Masarie@noaa.gov

2.2. Who is the overall point of contact for the data collection?

Don Neff, Don.Neff@noaa.gov

2.3. Who is responsible for verifying the quality of the data?

Tom Conway, Thomas.I.Conway@noaa.gov

Ed Dlugokencky, Ed.Dlugokencky@noaa.gov

Kirk Thoning, Kirk.W.Thoning@noaa.gov

Arlyn Andrews, Arlyn.Andrews@noaa.gov

Colm Sweeney, Colm.Sweeney@noaa.gov

2.4. Who is responsible for answering questions about the data collection?

Tom Conway, Thomas.I.Conway@noaa.gov

Ed Dlugokencky, Ed.Dlugokencky@noaa.gov

Kirk Thoning, Kirk.W.Thoning@noaa.gov

Arlyn Andrews, Arlyn.Andrews@noaa.gov

Colm Sweeney, Colm.Sweeney@noaa.gov

2.5. Who is responsible for data documentation and metadata activities?

Ken Masarie, Kenneth.Masarie@noaa.gov

Kirk Thoning, Kirk.W.Thoning@noaa.gov

2.6. Who is responsible for the data storage and data disaster recovery activities?

The IT group at ESRL/Global Monitoring Division is responsible for data disaster recovery activities. This includes regular backups and off-site storage of all ESRL/GMD data and applications.

- 2.7. Who is responsible for ensuring adherence to this data management plan, including ensuring that appropriate resources are available to implement the data management plan?

Pieter Tans, group chief, Carbon Cycle Greenhouse Gases group, ESRL/GMD

3. Data Stewardship

- 3.1. What quality control procedures will be employed?

Produced through documented, repeatable procedures using standard data sources and include field sampling, validation, and standard quality-control review procedures.

- 3.2. What is the overall lifecycle of the data from collection or acquisition to making it available to customer?

Data is collected and processed as resources permit. The goal is to provide yearly updates of publicly accessible data files.

4. Data Documentation

- 4.1. Which metadata repository will be used to document this data collection?

Data.gov

geodata.gov

- 4.2. In addition to discovery-level metadata, what additional metadata or other documentation is necessary to fully describe the data and ensure its long-term usefulness? How will that metadata be collected and updated?" Is there a requirement to document this data collection in other metadata repositories?

Metadata records contain both discovery and use information. Additional documentation is available through the ESRL/GMD CCGG website at <http://www.esrl.noaa.gov/gmd/ccgg/>

Metadata is updated once a year when datafiles are archived on public ftp servers.

- 4.3. What standards will be used to represent data and metadata elements in this data collection. *Note:* The [EDMC Data Documentation Procedural Directive](#) calls for the use of ISO 19115 and related standards for data documentation.

Metadata is in human readable text files and FGDC CSDGM format.

5. Data Sharing

- 5.1. Will the data be made available to the public? If so, what is the expected date of first availability? Is this a one-time data collection, or an ongoing series of measurements? Will there be a Principal Investigator hold or other delay between data collection and publication, and

if so for how long? [Note: the [Data Sharing for NOAA Grants Procedural Directive](#) provides useful guidance for sharing data in a timely manner.]

The data has been made available to the public since the 1980's.

This is an ongoing project that is updated yearly.

There is no hold or delay between data processing and publication.

- 5.2. If the data are not to be made available to the public, explain why and under what authority distribution may be restricted. [NOAA Administrative Order 212-15](#), "Management of Environmental Data and Information" (2010) states that Environmental data will be visible, accessible and independently understandable to users, except where limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements.

N/A

- 5.3. Will users be subject to any access conditions or restrictions, such as submission of non-disclosure statements, special authorization, or acceptance of a licensing agreement?

The data does not require any licensing agreement for download.

- 5.4. What data access protocols will be used to enable data sharing? The use of open-standard, interoperable, non-proprietary web services is recommended (for example, OPeNDAP, or Open Geospatial Consortium (OGC) web services).

Open standards are used for data sharing. The data may be accessed via web pages, ftp sites and web services.

- 5.5. In what catalogs will these services or data be made registered to enable discovery by users and other Catalogs?

Data.gov

WMO World data center for Greenhouse Gases (<http://ds.data.jma.go.jp/gmd/wdcgg/>)

Carbon Dioxide information and Analysis Center (CDIAC) <http://cdiac.ornl.gov/>

6. Initial Data Storage and Protection

- 6.1. Where and how will the data be stored initially (i.e., prior to being sent to a long-term archive facility)?

Data is stored at ESRL/GMD

- 6.2. How will the data be protected from accidental or malicious modification or deletion? Discuss data back-up, disaster recovery/contingency planning, and off-site storage relevant to the data collection.

Data is protected using standard NOAA security practices

The data is backed up on a regular schedule.

Copies are kept off site per disaster recovery requirements.

- 6.3. If there will be limitations to data access, how will these data be protected from unauthorized access? How will access permissions be managed? What process is to be followed in the event of unauthorized access?

N/A

7. Long-Term Archiving and Preservation

Note: NOAA's [Procedure for Scientific Records Appraisal and Archive Approval](#) describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

7.1. In what NOAA Data Center (NODC, NCDC, NGDC) will the data be archived and preserved? Have you begun discussions with that Data Center regarding your intended submission?

None at this time.

7.2. If you have not identified a NOAA Data Center, what is your long-term strategy for maintaining, curating, and archiving the data?

Data are archived the the World Meteorolgal Organization World Data Center for Greenhouse Gases (WDCGG), and with the Carbon Dioxide Information and Analysis Center (CDIAC).

7.3. How will the costs of long-term data archiving be provided and maintained?

N/A

7.4. What transformations or procedures will be necessary to prepare data for preservation or sharing? (e.g., quality control, format conversion, anonymization of personally-identifiable information, etc.). What related information will be submitted to the archive to enable future use and understanding of the data [e.g., metadata, references, reports, research papers, algorithms, audio or video codecs, special character sets or fonts, etc.].

There are no additional requirements necessary for preservation.

Data for archiving is submitted with existing documentation.

Identify the Record Schedule applicable to these data and provide the retention time for these data.

N/A See WDCGG and CDIAC