



NOAA Data Access Procedural Directive

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I. Purpose

NOAA environmental data are produced at public expense and should be broadly accessible to the public. Furthermore data gathered for a specific purpose may be found useful in other contexts, and the ability to easily obtain and combine data from multiple sources may support decision-making, disaster response, or new economic opportunities. Finally, a mandate for public access is expressed in both federal policy and in NOAA Administrative Order (NAO) 212-15, *Management of Environmental Data and Information*.¹

The purpose of this Directive is to declare that all NOAA environmental data (with limited exceptions, upon approval of a waiver) shall be made discoverable and accessible via the Internet in a timely fashion.

II. Scope

This Directive applies to:

- Digitally formatted environmental data² and derived data products resulting from observing systems, numerical models, product generation, or research performed within NOAA, or by NOAA contractors, or by Cooperative Institutes using NOAA facilities.

¹ http://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_212/212-15.html

² See definitions in Section XI.

- All past, current, and future data from current or future Programs.
- All legacy data archived in digital form at the NOAA National Centers for Environmental Information (NCEI).³

This directive recognizes that some data may not be made accessible for legal or technical reasons, but decisions to withhold access must be explicit and justified per the Waiver option below.

This Directive does not apply to:

- Data produced by NOAA grantees or Cooperative Institutes, which are instead subject to the *NOAA Data Sharing Policy for Grants and Cooperative Agreements*.⁴
- Third-party data purchased or acquired from external sources, which are instead subject to the *NOAA Recommended Practice for Use of External Data*.⁵ However, derived products created by NOAA from third-party data are subject to this Directive unless the acquisition agreement prohibits making such derived products accessible.
- Legacy data that were produced by NOAA Programs which no longer exist, and were never archived, unless those results are deemed worthy of public access by an existing Program which identifies the necessary resources for accessibility.
- Non-digital media (such as paper or analog tape), physical specimens, and preserved samples.
- Text-based warnings, advisories, forecasts, and similar textual products.
- Data that have been determined to have no value to NOAA (for example, outputs from experimental runs of a numerical model).
- Access statistics, forecast performance metrics, and other business process information that are about data but do not themselves constitute environmental data.

Approved requests for information submitted pursuant to the US Freedom of Information Act (FOIA) shall supersede access restrictions permitted by this Directive.

III. Authority

This Directive has been issued by the NOAA Environmental Data Management Committee (EDMC), with the approval of the NOAA Chief Information Officer (CIO) Council and the NOAA Observing System Council (NOSC), pursuant to the authorities granted in NAO 212-15.

Relevant agency and national policy:

- NOAA Environmental Data Management Framework⁶
- US Digital Government Strategy⁷
- US Open Data Policy (OMB Memorandum M-13-13)⁸
- OSTP Memorandum on Increasing Public Access to the Results of Federally-Funded Research⁹
- OMB Circular A-16 Revised¹⁰

³ NCEI includes the organizations previously referred to as National Climatic Data Center (NCDC), National Geophysical Data Center (NGDC), and National Oceanographic Data Center (NODC).

⁴ <https://www.nosc.noaa.gov/EDMC/PD.DSP.php>

⁵ <https://www.nosc.noaa.gov/EDMC/RP.UED.php>

⁶ <https://www.nosc.noaa.gov/EDMC/framework.php>

⁷ <http://www.whitehouse.gov/sites/default/files/omb/egov/digital-government/digital-government.html>

⁸ <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-13.pdf>

⁹ http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf

IV. Directive

1. **Discoverability:** NOAA environmental data shall be discoverable by the public, unless a waiver has been granted.
 - 1.1. Approved submission of data to the NOAA National Centers for Environmental Information, and inclusion of the data in a public NCEI inventory, shall be considered to meet all the provisions of this requirement for discoverability.¹¹ Data not submitted to NCEI, or not made discoverable by NCEI, shall independently satisfy the requirements below.
 - 1.2. Datasets shall be listed in NOAA's public data catalog, currently established at <https://data.noaa.gov/>.
 - 1.3. Catalog entries shall include one or more links for data access satisfying requirement 2.3 below.
 - 1.4. Catalog entries shall be constructed from formal metadata records.
 - 1.4.1. All new metadata records shall be compliant with the EDMC *Data Documentation Procedural Directive*.¹²
 - 1.4.2. Legacy metadata records compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM) and its extensions (e.g., Biological Data Extension) shall be accepted by the Catalog until this provision is rescinded.
 - 1.4.3. No other metadata standards or formats shall be accepted by the NOAA Catalog unless this provision is updated.¹³
 - 1.5. Metadata records shall be placed in a Web-Accessible Folder (WAF). A WAF is a web server directory at a specific internet address (Uniform Resource Location, or URL) that directly lists one or more metadata records without an intervening index page.
 - 1.6. The URL of the WAF shall be registered with the Catalog. Registration can be initiated by sending an email request to noaa.data.catalog@noaa.gov.
 - 1.7. Waivers for data that cannot be made discoverable by the public shall be submitted using the form in Appendix A.
2. **Accessibility:** NOAA environmental data shall be accessible by the public, unless a waiver has been granted.
 - 2.1. Approved submission of data to the NOAA National Centers for Environmental Information, and provision of access by NCEI, shall be considered to meet all the provisions of this requirement for accessibility. Data not submitted to NCEI, or not made accessible by NCEI, shall independently satisfy the requirements below.
 - 2.2. Data shall be available in one or more machine-readable digital formats. Open-standard, non-proprietary formats are recommended, per US Open Data Policy.¹⁴

¹⁰ http://www.whitehouse.gov/omb/circulars_a016_rev

¹¹ NCEI follows the provisions of the *NOAA Procedure for Scientific Records Appraisal and Archive Approval* in assessing data submission requests (https://www.nosc.noaa.gov/EDMC/documents/NOAA_Procedure_document_final_12-16-1.pdf).

¹² <https://www.nosc.noaa.gov/EDMC/PD.DD.php>

¹³ Support for harvesting metadata in other dialects or standards shall be at the discretion of EDMC and the Catalog technical support personnel.

¹⁴ Technical recommendations for the Data Access Procedural Directive, including recommended data formats, data access services, and available data and metadata hosting services, will be posted in the NOAA Environmental Data Management Wiki at https://geo-ide.noaa.gov/wiki/index.php?title=Data_Access_Technical_Recommendations

- 2.3. At least one of the following machine-readable data access methods shall be provided:
 - 2.3.1. Data shall preferably be made available via a web service or application programming interface (API) that supports machine-to-machine data access and enables users to request the desired subset of the data. Open-standard, non-proprietary services are recommended, per US Open Data Policy.¹⁴
 - 2.3.2. Data may be made available via bulk download via File Transfer Protocol (FTP) or Hypertext Transport Protocol (HTTP) in addition to via web service(s). However, bulk download as the only method of access shall be discouraged.
 - 2.3.3. Archived data stored on robotic tape drive may be made available via asynchronous ordering service if necessary. Migration to online data and services is encouraged.
- 2.4. Web sites, web pages, or portals requiring human intervention to operate shall not qualify as meeting the machine-readable access requirement 2.3 above, but may be provided as a supplement to machine-readable methods.
- 2.5. Data shall be publicly available over the Internet without requiring a password, registration, or conditions on use. Waivers for data that do not meet these conditions shall be submitted using the form in Appendix A.
- 2.6. Data shall be available free of charge, or at no more than the cost of reproduction when physical media or special delivery mechanisms are required.
3. **Timeliness:** NOAA data shall be made publicly available with minimum time delay after capture.
 - 3.1. Routine, ongoing observations by automated sensors shall be made available with no delay beyond latency imposed by data processing, transmission, and possibly archive ingest.
 - 3.2. Access to data requiring manual data collection, processing, or quality control may be temporarily withheld until processing is completed, for a period not to exceed 1 year after initial collection, unless a Waiver has been approved.
 - 3.3. Principal Investigator holds (i.e., withholding data access solely for the purpose of being the first to publish) shall not be permitted.
 - 3.4. Data shall remain accessible until one of the following conditions has been met:
 - 3.4.1. For data archived at NCEI, the date specified in the Archive Retention Schedule has been reached, in which case Data Center procedures for removal shall be followed.
 - 3.4.2. For data not archived, a waiver has been filed using the form in Appendix A explaining the reasons for eliminating accessibility.
 - 3.4.3. A new version of the data has been made available which supersedes the older version.
 - 3.4.4. Data have been deemed of no future value to NOAA or other potential users.

V. Responsibilities

NOAA Programs that produce environmental data or commission its production via contracts shall, within their own budgets, allocate resources and provide methods for data access, or justify the absence of such access. NOAA Program Managers, or their designee, shall enforce the provisions of this Directive for the data they produce internally or support via contracts.

Note: NOAA grantees are subject to the NOAA *Data Sharing Policy for Grants and Cooperative Agreements*⁴ rather than to this Procedural Directive.

- NOAA data producers or stewards: Make environmental data discoverable and accessible, or seek explicit waiver from Associate Administrator or designee.
- NOAA Program Managers: Ensure environmental data produced or stewarded by the Program are discoverable and accessible by the public, or file waiver approved by Line or Staff Office leadership.
- Line Office Assistant Administrators, Staff Office Directors, or their designee: approve or deny waiver requests.
- NOAA National Data Centers: Ensure long-term preservation of data, and provide catalog registration and public access of archival datasets.
- NOAA Environmental Data Management Committee (EDMC): support implementation, tracking, and maintenance of this Directive. Submit Data Access Waivers to repository.
- NOAA Data Management Integration Team (DMIT): review technical recommendations¹⁴ regarding data formats and access services periodically, but no less than every 3 years, and provide updates as needed.
- NOAA Technology Planning and Integration for Observations (TPIO) program: Establish and maintain repository for Data Access Waivers in location accessible to NOAA internal personnel.

VI. Management and Ownership

This Procedural Directive is issued and managed by the NOAA Environmental Data Management Committee. The Directive and its Appendices will be reviewed at least every three years, and revised as needed, by the EDMC or a designated work team.

VII. Intended Audience

The audience for this Directive includes NOAA data producers, data managers, program managers, and data center personnel.

VIII. Implementation Date

This EDMC Procedural Directive shall take effect on 2015 March 1.

Data existing as of this date shall be made publicly accessible, or shall be covered by a Waiver, within one year of this date.

Data collected after this date shall be made publicly accessible, or shall be covered by a Waiver, no later than one year after collection.

IX. Grandfather Exemption and Waiver Option

Grandfather Exemption: This Directive does not apply to non-archived legacy data that were produced by NOAA Programs which no longer exist, unless those data are deemed worthy of being made accessible by an existing Program which identifies the necessary resources for access services.

Waiver Option:

Data may be exempted from access requirements in whole or in part by filing the waiver in Appendix A.

Waivers must be approved by the corresponding Line Office Assistant Administrator or Staff Office Director, or their designee.

Examples of possible reasons for granting a waiver include:

- Data access restricted by law, by United States, Department of Commerce, or NOAA policy, or by commercial or international agreements.
- Data has not met requirements of Information Quality Act.
- Data volume so great that providing access is impossible with available resources and infrastructure.
- Experimental model runs.
- Signal-free data (for example, due to sensor malfunction or absence of phenomena above detector threshold).
- Data of no value to NOAA or other users.

For a waiver based on data volume, the applicant for waiver must provide a plan to index the dataset and provide portions of it upon request.

In the event that data access is prohibited by some statute, that statute must be identified. Exceptions to confidentiality in such statutes must be identified in any application for waiver.

The case where data access is restricted to some individuals but not others should be avoided if possible. In the case of such a restriction, applicants for a waiver shall provide an outreach plan to identify and notify persons with a potential interest in the data and shall describe how data can be provided to authorized employees.

X. Performance Objectives and Measurements

Objective 1: Observations and derived products from all NOAA Observing Systems of Record (as defined by the NOAA Observing Systems Committee) are discoverable and accessible in a timely fashion as required by Part IV.

Metric 1a: Percentage of Systems of Record with at least one dataset listed in NOAA Data Catalog.

Metric 1b: Number of System of Record datasets listed in NOAA Data Catalog. *(Note: there is generally more than one dataset per system.)*

Metric 1c: Percentage of Catalog entries for System of Record datasets with functional data access links meeting requirement 2.3 in Part IV.

Objective 2: All NOAA observations, derived products, and model outputs (regardless of Observing System of Record classification) are discoverable and accessible in a timely fashion as required by Part IV.

Metric 2a: Number of datasets listed in NOAA Data Catalog.

Metric 2b: Percentage of Catalog entries with functional data access links meeting requirement 2.3 in Part IV.

Metric 2c: Number of Waivers filed per Part IX justifying limited access.

XI. Definitions

Terminology from NAO 212-15

Environmental data: Recorded and derived observations and measurements of the physical, chemical, biological, geological, and geophysical properties and conditions of the oceans, atmosphere, space environment, sun, and solid earth, as well as correlative data such as socio-economic data, related documentation, and metadata. Numerical model outputs are included in this definition, and relevant model outputs should be made publicly accessible even if they are not archived. Digital audio or video recordings of environmental phenomena (such as animal sounds or undersea video) are included in this definition.

Abbreviations

DMIT: NOAA Data Management Integration Team
EDMC: NOAA Environmental Data Management Committee.
NAO: NOAA Administrative Order.
NCEI: NOAA National Centers for Environmental Information.
OMB: US Office of Management and Budget
OSTP: US Office of Science and Technology Policy

XII. Frequently Asked Questions (FAQs)

Questions about this directive may be sent to noaa.data.access@noaa.gov.
Answers will be posted on the NOAA Environmental Data Management Wiki site at https://geo-ide.noaa.gov/wiki/index.php?title=Data_Access_PD

XIII. Approval

This Directive was approved on 2015 Feb 11 by the Environmental Data Management Committee.



Dr. Jeff de La Beaujardière, EDMC Committee Chair

XIV. Appendices

Appendix A: Application for Data Access Waiver

This form is to be completed by the Manager of the NOAA Program that produces or stewards the data, approved by the corresponding Line Office Assistant Administrator or Staff Office Director or their designee, and submitted to the Data Access Waiver repository by the EDMC representative for that Office.

Applicant contact information

Name:

Title:

Email:

Phone:

Line/Staff Office and division:

Program name:

Type of waiver requested:

Data to be listed in Catalog and publicly accessible, but only by advance registration or special request.

Data to be listed in Catalog but not publicly accessible.

Data not to be listed in Catalog and not publicly accessible. *Note: OMB Memorandum M-13-13 requires that non-public data be disclosed to the US Office of Management and Budget.*¹⁵

Reason for waiver

NOAA environmental data must be publicly discoverable and accessible, except where limited by law, regulation, policy, security requirements, commercial or international agreements, or valid technical considerations.

Justification for waiver (specify the applicable law, regulation, policy, requirement, legal or commercial agreement, archival submission agreement, or technical limitation, and describe why it applies to these data):

¹⁵ Disclosure to OMB may be made through the Open Government contact in the NOAA Office of the CIO.

If the reason is by statute, specify any exceptions to confidentiality in the statute:

If any NOAA employees will be denied access, describe proposed restrictions. Provide an outreach plan to identify and notify potentially interested NOAA employees, and explain how access can be provided to these employees. Include attachment if necessary.

If access is limited due to the size of the data, describe plans for indexing the data and providing access to subsets upon request:

If access is limited due to the size of the data, describe infrastructure enhancements that would enable unrestricted access:

Period of Validity

Waivers should be reviewed periodically to determine whether to renew or rescind; an interval of no more than three years is recommended but is at the discretion of the Associate Administrator or designee. Renewals, if desired, should be sought prior to expiration of the prior waiver. Permanent waivers are to be avoided.

The list of outstanding waivers shall be reported by EDMC at least yearly to NOSC, CIO Council, and OMB.

This Waiver shall expire on _____.

Approval

Name

Title

Signature

Date