






NEON DATA POLICY

PREPARED BY (Name and Signature)	ORGANIZATION	DATE
Tony Beasley	NPR	3/15/2010

APPROVALS (Name and Signature)	ORGANIZATION	DATE
Tony Beasley 	CCB Chairman COO	3/16/2010
Tom Cilke 	CCB Director of Engineering	3/16/2010
Michael Keller 	CCB Chief of Science	3/16/2010
Brian Damiani 	CCB Systems Engineer	3/16/2010

RELEASED BY (Name and Signature)	ORGANIZATION	DATE
Dina Cilke 	CCB Administrator DCS	3/16/2010

Change Record

VERSION	DATE	CRE #	REASON/INITIATION/REMARKS
1.0	1/1/2009		Initial Version (from 2008 PEP)
1.1	1/18/2009		Internal Review comments
1.2	2/20/2009		Modified experiments section
A	05/15/2009	NEON.MGMT.NPR.000047.CRE	Initial release
A.1	10/13/2009		Insert ORD, Sample Management Plan references; discuss ORD requirements transfer; define prerelease policy
B	10/15/2009	NEON.MGMT.NPR.000183.CRE	CCB approved submitted changes
B.1	2/15/2010		Minor wording changes plus addition of public license section 3.8 (placeholder)
C	3/16/2010	NEON.MGMT.NPR.000227.CRE	CCB approved submitted changes

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1 INTRODUCTION

The National Ecological Observatory Network is an observatory comprising more than 60 atmospheric, environmental and biological monitoring locations distributed throughout twenty domains across the United States, Hawaii, Alaska & the Caribbean, which are monitored and controlled in real-time from our headquarters in Boulder, Colorado. A leading-edge, flexible cyberinfrastructure (CI) is being designed to support current and future needs of the Observatory, including acquisition, storage, calibration and distribution of the ecological data.

It is the responsibility of NEON, Inc., in consultation with the National Science Foundation and the scientific community, to implement procedures to effectively manage and provide necessary access to NEON data, while at the same time ensuring the quality, integrity and availability of the information. As a matter of principle, NEON is committed to the free and open scientific exchange of data, and NEON's data policies uphold this principle to the maximum extent allowed by applicable law and regulation. The purpose of this policy is to provide a structured and consistent process to maintain data integrity and to allow necessary data access by researchers, researchers, educators, students, policymakers and citizens.

The functions of the NEON CI are not described by the data policy, although the NEON CI system is responsible for meeting the obligations imposed by the data policy. A separate NEON Sample Use Policy document (RD[02]) outlines procedures to effectively manage and provide necessary access to NEON biological samples, while at the same time ensuring the quality, integrity and availability of the samples.

2 RELATED DOCUMENTS AND ACRONYMS

2.1 Reference Documents

RD[01]	NEON.MGMT.NPR.000008.GEN	NEON Glossary of Abbreviations
RD[02]	NEON.MGMT.NPR.000027.POL	NEON Sample Use Policy
RD[03]	NEON.DSDV.SYS.004206.REQ	NEON Observatory Requirements Document

3 STATEMENT OF POLICIES

Note added September 2009: During fourth-quarter 2009, the System Engineering Product Team is transferring all Observatory requirements (including several stated or implied by this document) into the Observatory Requirements Database (RD[03]). This document remains in the project configuration to provide additional description and context for the NEON data policies.

3.1 Archiving

- All data, whether from core sites, relocatable sites, airborne platform or mobile deployment systems, or experimental programs, will be securely archived within the NEON CI.
- The basic NEON data streams from the AQU, FIU, FSU, LUAP, AOP and experiments, and selected data taken as part of instrument calibration, engineering or software testing, will be open-access and available as soon as possible once basic QA/QC procedures have been applied. Data may be available prior to QA/QC checks by special request.
- Data archives shall include easily accessible information about data holdings; high-level data products, including quality assessments and supporting relevant information Guidance for locating and obtaining the data, will be provided on the NEON Data Portal.

3.2 Accessibility

- Data will be made publicly available to users through an open-access general web interface.
- NEON will utilize community standards for the provisioning of datasets e.g. EML, NetCDF.
- NEON will enforce a principle of non-discriminatory access so that all users will be treated equally.
- Open-access means that data will be freely-distributed without charge; there may be charges for the cost of reproduction and delivery when access is not web-based. Data distribution will be unrestricted (unless for reasons of national security).
- NEON will provide an annual report (online) on use of NEON data. The NEON CI will register and record users of data and this information will be available to investigators seeking to avoid duplication of effort.
- Certain types of data have legal access restrictions, for example, information related to threatened and endangered species. If such data are held in the NEON CI, all legal restrictions will be enforced and access to such data may be limited to forms (e.g. statistical summaries) that do not violate applicable laws and regulations.
- During the construction of the NEON Observatory, all data released to the community will be considered "Pre-Release" data. These data will be offered on a best-effort basis. Pre-release data will not be reprocessed during the period of NEON construction except in extraordinary cases.

3.3 Metadata

- Metadata associated with NEON data must meet or exceed applicable national requirements (e.g., Federal Geographic Data Committee; www.fgdc.gov) and be closely associated with the archived data.
- NEON metadata includes information about data provenance, description, quality, maturity level (raw data streams, automated quality control, processed, derivative products), and collection context, and support interoperability with other observatories, archives, and databases.

- NEON metadata standards will be published and openly-available.

3.4 Experiments

It is planned that the NEON infrastructure will support a wide variety of Principal Investigator (PI)-driven experiment and observational systems at the NEON domains. These systems may return data to the NEON Archive via NEON CI, and be accessible through the NEON web processes. The following policies are identified:

- NEON encourages investigators working in experimental-set aside areas to make their research data freely and openly available as soon as possible and requires data sets so collected to be registered with the NEON data archive.
- NEON will permit restricted data access for a reasonable period not exceeding two years from the end-of-experiment date for data collected by investigators using instruments connected to NEON cyberinfrastructure or through PI-requested deployments of NEON facilities. At the end of a restricted access period, all data will be freely and openly available.
- The restricted period may be extended under exceptional circumstances, but only by agreement between the Principal Investigator and the NEON Director. With the PI's permission, data can be released to a third-party requesting user before it is publicly accessible. Data that has already become public cannot be made proprietary under any circumstances. After the exclusivity limit, the historical data as well as the current stream from the individual PI data source will be made publicly available under the policy described for core and community data. Data which has been published in whole or part becomes publicly available at the time of publication.

3.5 Business systems

The internal computers, networks, application software and data repositories of NEON, Inc. are critical resources of NEON and must be protected against inappropriate access and/or disruption of service. Active measures are necessary to ensure data integrity and reduce the risk of system compromise, especially when sensitive information may be at risk. Established procedures for protection and release of sensitive information must be followed regardless of the platform used to store that data.

3.6 Satellite Sites

It is anticipated that members of the external community may implement some or all of the NEON infrastructure at sites not directly connected to NEON. In those cases, these organizations may choose to provide their data to the NEON archive. These sites are referred to as NEON Satellite Sites. The following policies can be identified:

- NEON Satellite Sites will establish an archival and metadata plan which will be approved by NEON Observatory management.
- Data providers are responsible for insuring that data files for their sites meet NEON metadata standards, including information about data provenance, description, quality, maturity level (raw data streams, automated quality control, processed, derivative products), and collection context, and support interoperability with other observatories, archives, and databases.

3.7 Acknowledgement

Any published papers that use data from the NEON Archive should carry the following footnote or acknowledgement in the text: "The National Ecological Observatory Network is a project sponsored by the National Science Foundation and managed under cooperative agreement by NEON, Inc."

3.8 Public License

All data products published by the NEON Observatory will include the following licensing information:

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4 IMPLEMENTATION

The following implementation policies can be identified:

- The NEON data policies will be implemented in the NEON CI so that they are to the maximum extent possible self-enforcing.
- NEON may allow for exceptions to the guidance contained in this Statement on a case-by-case basis where permitted by law and in the furtherance of the public interest. Request for exceptions to this policy should be sent to the NEON Director.
- NEON shall review and, if warranted, update this data policy as a part of the regular reviews of NEON operations.

These principles are derived from discussions with the community, responses to the survey conducted by the Ecological Society of America, data policies followed by Federal agencies and other NSF facilities.

A subcommittee of the NEON Science, Technology and Education Advisory Committee, with representation from professional societies, will review the NEON Data Policies on a regular basis. A final NEON data policy will be approved by the NEON Board and NSF.

A separate Sample Use Policy document (RD[02]) outlines procedures to effectively manage and provide necessary access to NEON biological samples, while at the same time ensuring the quality, integrity and availability of the samples.