CIESIN Geospatial Metadata Writer's Guide

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Sources

Throughout these Guidelines, examples shown for individual metadata elements are drawn from CIESIN's own metadata database as well as from the following metadata records.

Campbell, Reid. April 27, 1995. "USGS Gaging Stations Metadata". [online metadata record]. Raleigh, North Carolina: NC Division of Water Resources. URL: http://www.dwr.ehnr.state.nc.us/metadata/usgsgage.htm#MR

Schweitzer, Peter, N. May 12, 1995. "Planktic foraminifer census data from Northwind Ridge core 5 Arctic Ocean". [online metadata record]. Reston, Virginia: US Geological Survey.
URL: http://geochange.er.usgs.gov/pub/NWR/OFR_91-346/Contents/FGDCmeta.txt

Shaffer, Linda. September 20, 1994. "National Wetlands Inventory (NWI) wetlands data: Hickory". [metadata record]. St. Petersburg, Florida: U.S. Fish and Wildlife Service, National Wetlands Inventory. (In: Federal Geographic Data Committee (FGDC). 1994. *Content Standards for Digital Geospatial Metadata.* Workbook, version 1.0, March 1995. Washington, D.C.: FGDC).

U.S. Geological Survey (USGS). June 10, 1994. "U.S. Geological Survey Digital Line Graph File: Wilmington South". [metadata record]. Reston, Virginia: USGS. (In: Federal Geographic Data Committee (FGDC). 1994. *Content Standards for Digital Geospatial Metadata.* Workbook, version 1.0, March 1995. Washington, D.C.: FGDC).

MANDATORY METADATA ELEMENTS

The following list indicates the metadata elements and sub-elements considered mandatory for minimum compliance with the metadata content requirements of CIESIN. The list also incorporates those metadata elements needed for minimum compliance with the Content Standard for Digital Geospatial Metadata (CSDGM), the Global Information Locator Service (GILS), and the Directory Interchange Format (DIF).

Throughout this document, mandatory metadata elements are followed by an asterisk (*).

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1. Identification Information

Identification Information provides basic descriptive details about a data set or information resource. This section contains definitions and examples for the following metadata elements.

Data Resource Citation
Description
Time Period of Content
Status
Spatial Domain
Keywords
Access and Use Constraints
Point of Contact
Browse Graphic
Data Set Credit
Security Information
Native Data Set Environment
Related Reference(s)

Data Resource Citation *

Definition: A full citation to the data set or information resource being described by this metadata record.

Data Resource Citation requires citation information. Guidelines and examples for applying the metadata sub-elements for Data Resource Citation are contained in Section 5 (Citation Information). Only one Data Resource Citation is allowed per metadata record.

Description *

Description provides a characterization of the data set or information resource. It includes details on what the resource is about, why it was created, and allows for additional information specific to the resource that is not covered elsewhere in the metadata record. This metadata element encompasses the following sub-elements.

*Abstract **

Definition: A concise and informative description of the contents of the data set or information resource. Significant information should be included to provide an accurate representation of the resource described, such as the objectives of the data collection or study, the scope, and an indication of the contents, subject range, and use. The first sentence of an abstract should always identify by full title the item being described.

Format: Free text.

Example:
Abstract: "GIS Coverage of Mexican States" is an Arc/Info coverage (vector based) of Mexican States with associated data items. This digital coverage was digitized by the Environmental Research Institute of Michigan (ERIM) from 1:1,000,000 source maps produced by the Instituto Nacional De Estadistica Geografia E Informatica (INEGI), 1982. Each administrative unit (32 states in all) has the following associated data items (also obtained from INEGI): population in 1990; square kilometers; population density; population by gender; population 6 to 14 years of age that can read and write; population 6 to 14 years of age that cannot read and writer; literate population 15 years of age and older; and non-literate population 15 years of age and older.

Abstract: "HEMDisk" contains information about international organizations and programs associated with the integration and application of science to the measurement and monitoring of the present state or change in the environment and related work on harmonization. Organization and program emphasis is on international bodies, with some national bodies whose work involves strong international connections or significance. Information is global in scope, and is structured within categories such as country, geographic scope, type of organization, and several others. Information was derived from surveys conducted by the United Nations Environment Programme (UNEP), Office of Harmonization of Environmental Management (HEM), since 1989. The HEM Office is part of the Global Environmental Monitoring System (GEMS) and a component of Earthwatch.

*Purpose **

Definition: A brief summary of the intentions with which the data or information resource was developed.

Format: Free text.

Example:
Purpose: To provide access to and enhance the use of information worldwide, advancing understanding of human interactions in the environment, and serving the needs of science, and public and private decision making.

Purpose: The data provide consultants, planners, and resource managers with information on wetland location and type. The data were collected to meet U.S. Fish and Wildlife Service's mandate to map the wetland and deep water habitats of the United States.

*Language**

Definition: The language(s) in which the data or information resource is available. Multiples allowed.

Format: Select from list, or free text.

Example:
Language: English
Language: Chinese
Language: Spanish, English

Project/Campaign/Agency Program

Definition: Scientific endeavor, agency program, or project that the data set or information resource supports.

Format: Select from the following list; or free text.

Project / Campaign / Agency Program list:

MTPE	Mission to Planet Earth
LTER	Long-Term Ecological Research
RCRA	Resource Conservation and Recovery Act of 1976
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
WOCE	World Ocean Circulation Experiment
CAA	Clean Air Act
CWA	Clean Water Act
NWI	National Wetlands Inventory
EPA GCRP	EPA Global Change Research Program
EOSDIS	Earth Observing System Data and Information System
USDA	United States Department of Agriculture

Supplemental Information

Definition: Additional descriptive information about the data set or information resource, such as an alternative title, or other language title it may be known by.

Format: Free text.

Time Period of Content *

Definition: The time period(s) to which the data set or information resource corresponds.

Guidelines and examples for applying the metadata sub-elements for Time Period of Content are contained in Section 6 (Time Period).

Currentness Reference *

Definition: The basis on which the Time Period of Content information is determined. Provides information about the currentness (how up-to-date) the data set or information resource is.

Format: Select from list: ground condition, publication date; or free text.

Status *

Status includes the state of, and maintenance information for the data set or information resource. This metadata element encompasses the following sub-elements.

*Progress **

Definition: The current state of the resource.

Format: Select from list: complete, in work, planned.

*Maintenance and Update Frequency **

Definition: The frequency with which changes and/or additions are made to the data set or information resource after the initial production or publication is completed.

Format: Select from list: continually, daily, weekly, monthly, annually, decennially, unknown, as needed, irregular, none planned; or free text.

Spatial Domain *

Spatial Domain provides the geographic areal domain of the data resource. This metadata element encompasses the following sub-elements.

*Bounding Coordinates **

Definition: The limits of coverage of a data set expressed by latitude and longitude values in the order western-most, eastern-most, northern-most, and southern-most. For data sets that include a complete band of latitude around the earth, the West Bounding Coordinate shall be assigned the value -180.0, and the East Bounding Coordinate shall be assigned the value 180.0 .

Format:

Example:
Bounding Coordinates

West Bounding Coordinate:	-75.625
East Bounding Coordinate:	-75.5
North Bounding Coordinate:	39.75
South Bounding Coordinate:	39.625

Data Set G-Polygon
Coordinates defining the outline of an area covered by the data set.

Data Set G-Polygon Outer Ring

Definition: The closed nonintersecting boundary of an interior area; expressed by latitude and longitude values.

Format: G-Ring Latitude: The latitude of a point of the g-ring .
G-Ring Longitude: The Longitude of a point of the g-ring.

Data Set G-Polygon Exclusion G-Ring

Definition: The closed nonintersecting boundary of a void area (or "hole") in an interior area; expressed by latitude and longitude values.

Format:

Example:

Keywords *

Keywords are words or phrases used to indicate the main ideas and aspects of a data resource. They are also used as an index to the contents. There are two categories of keywords: controlled, and uncontrolled. Controlled keywords are terms taken from an established authoritative list (thesaurus) of indexing terms. Uncontrolled keywords are terms applied as free text and are not derived from an established authoritative list.

The CIESIN metadata management system supports both controlled and uncontrolled keywords, identified as "theme", "place", "stratum", and "temporal". Each of these is described in the following metadata sub-elements.

Theme Keyword *

Definition: A word or phrase used to describe the topic or subject of a data resource. Multiples allowed.

Format: Controlled; format should follow that of the selected thesaurus.

Theme Keyword Thesaurus *

Definition: The title of a formally registered thesaurus or a similar authoritative source list of Theme keywords.

Format: Free text; provide the title of the thesaurus/list used.

Example:
Theme Keyword Thesaurus: CIESIN Indexing Vocabulary
Theme Keyword: population distribution

Place Keyword *

Definition: The name of the geographic location characterized by the data resource. Multiples allowed.

Format: Controlled; format should follow that of the selected thesaurus.

Place Keyword Thesaurus *

Definition: The title of a formally registered thesaurus or a similar authoritative source list of Place keywords.

Format: Free text; provide the title of the thesaurus/list used.

Example:
Place Keyword Thesaurus: Geographic Names Information System
Place Keyword: Leelanaw County
Place Keyword: Yellowstone National Park
Place Keyword: Kuala Lumpur

Stratum Keyword

Definition: The name of the layered, vertical location used to describe the location covered by the data resource (such as seafloor, seabed, troposphere, stratosphere).

Format: Controlled; format should follow that of the selected thesaurus.

Stratum Keyword Thesaurus

Definition: The title of a formally registered thesaurus or a similar authoritative source list of Stratum keywords.

Format: Free text; provide the title of the thesaurus/list used.

Example:
Stratum Keyword Thesaurus: CIESIN Stratum Keyword List.
Stratum Keyword: seabed
Stratum Keyword: stratosphere

Temporal Keyword

Definition: The name of the time period covered by the data resource (such as pre-Colombian, World War II).

Format: Controlled; format should follow that of the selected thesaurus.

Temporal Keyword Thesaurus

Definition: The title of a formally registered thesaurus or a similar authoritative source list of Temporal keywords.

Format: Free text; provide the title of the thesaurus/list used.

Example:
Temporal Keyword Thesaurus: CIESIN Temporal Keyword List.
Temporal Keyword: pre-Colombian
Temporal Keyword: Jurassic
Temporal Keyword: Neolithic

Access and Use Constraints *

Access and Use Constraints provide information regarding any restrictions that may exist on acquiring and using the data set or information resource. This metadata element encompasses the following sub-elements.

Access Constraints *

Definition: Restrictions and legal prerequisites for accessing the resource. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the data set or information resource.

Format: Free text.

Example:
Access Constraints: None.
Access Constraints: This data set is available only to authorized U.S. Federal personnel.

Use Constraints *

Definition: Restrictions and legal prerequisites for using the resource after access is granted. These include any use constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on using the data set or information resource.

Format: Free text.

Example:
Use Constraints: The data are for non-commercial use only. No third party distribution is permitted.

Point of Contact

Definition: Contact information for an individual and/or organization that is knowledgeable about the data resource and can answer questions and provide assistance.

Point of Contact requires contact information. Guidelines and examples for applying the metadata sub-elements for Point of Contact are contained in Section 7 (Contact Information). Multiples are allowed; each Point of Contact listed requires a separate contact record.

Browse Graphic

Browse Graphic provides an illustration or sample of the data resource being described. A legend or explanation should be included to aid in interpreting the graphic. This metadata element encompasses the following sub-elements.

Browse Graphic File Name

Definition: The name of a related graphic file that provides an illustration or example of the data resource.

Format: Free text.

Example:
Browse Graphic File Name: Gages.gif

Browse Graphic File Description

Definition: A text description of the illustration or example.

Format: Free text.

Example:
Browse Graphic File Description: State map showing point data locations.

Browse Graphic Caption

Definition: A one-line text description of the illustration or example used as a caption when the example is displayed.

Format: Free text.

Example:
Browse Graphic Caption: 1980 U.S. Population distribution

Browse Graphic File Type

Definition: The file type of the graphic file.

Format: Select from list; or free text
File Type list: CGM Computer Graphics Metafile
EPS Encapsulated Postscript Format
GIF Graphic Interchange Format
JPEG Joint Photographic Experts Group Format
PBM Portable Bit Map Format
PS Postscript Format
TIFF Tagged Image File Format
XWD X-Windows Dump

Example:
Browse Graphic File Type: GIF, Graphic Interchange Format

Browse Graphic URL

Definition: The address through which the browse product may be accessed.

Format: Follow the Uniform Resource Locator (URL) convention of the Internet.

Example:
Browse Graphic URL: http://www.ciesin.org/demog/browse.html

Data Set Credit

Definition: Recognition and acknowledgment of those who contributed to the data resource.

Format: Free text.

Example:
Data Set Credit: The tables and glossary were compiled by Joseph Smith and Mary Brown.

Security Information

Security Information describes any handling restrictions that may be imposed on a data resource because of national security, individual privacy, or other concerns. This metadata element encompasses the following sub-elements.

Security Classification System

Definition: The name of the classification system.

Format: Free text.

Security Classification

Definition: The name of the handling restrictions that pertain to the data resource.

Format: Select from list or free text; top secret, secret, confidential, restricted, classified, unclassified, sensitive.

Security Handling Description

Definition: Any additional information about the restrictions on handling the data resource.

Format: Free text.

Native Data Set Environment

Definition: A description of the data set in the producer's environment. Include items such as the name of the software (including version), the computer operating system, file name (including host-, path-, and filenames), and the data set size.

Format: Free text.

Example:
Native Data Set Environment: The USGS Stream Gage Program Data Set was written and is maintained in Lotus 1-2-3, version 4, format. This is the standard native data format for this data set. The Division of Water Resources maintains this data on PC's running on a Novell network. As copies of the data set are updated, the improved version is added to the Metadata subdirectory on the file server. In the future this data set will be copied and converted to ATLAS*GIS dbf format which is a dBase file structure.

Related Reference(s)

Definition: Citation to other related data set(s) or information resource(s) that are likely to be of interest.

Each Related Reference takes the form of a citation. Guidelines and examples for applying the metadata sub-elements for Related Reference are contained in Section 5 (Citation Information). Multiples are allowed; each Related Reference requires a separate citation record.

2. Data Quality

Data Quality provides information on, and a general assessment of, the quality of a data set or information resource. This section contains definitions and examples for the following metadata elements.

Methodology
Collection Instrument Name
Attribute Accuracy
Logical Consistency Report
Completeness Report
Lineage
Positional Accuracy
Cloud Cover

Methodology

Definition: A brief description of specific activities associated with the data collection process. This could include: hypothesis formulation, research design, measurement tactics, and analytic techniques, etc.

Format: Free text.

Example:
Methodology: Data for the National Core and the National Core and Supplement Files were collected annually through 1981 and have been collected every two years since that time. Each household completes a set of core questions about housing expenditures, taxes, insurance, etc., and an additional set of supplement questions that varies from year to year. The metropolitan area data are collected on a continuous basis and are reported annually. Prior to 1984, these data were collected on a sample of approximately 20 SMSAs per year and were called SMSA Files. Since 1984, data have been collected on a rotating sample of 44 MSAs. Eleven MSAs are surveyed each year, with any given MSA surveyed once every four years.

Collection Instrument Name

Definition: The name of the instrument(s) or hardware used to collect the data.

Format: Select from the following list; or free text.
Collection Instrument List: algorithm
questionnaire
human observer

Example:
Collection Instrument Name: human observer

Attribute Accuracy

Attribute Accuracy provides an assessment of the accuracy of the identification of entities and assignment of attribute values in a data set. This metadata element encompasses the following sub-elements.

Attribute Accuracy Report

Definition: An explanation of the accuracy of the identification of the entities and assignments of values in the data set, and a description of the tests used.

Format: Free text.

Example:
Attribute Accuracy: Attribute accuracy is tested by manual comparison of the source with hard copy printouts and/or symbolized display of the digital wetlands data on an interactive computer graphic system. In addition, WAMS software (USFWS-NWI) tests the attributes against a master set of valid wetland attributes.

Quantitative Attribute Accuracy Assessment
A value assigned to summarize the accuracy of the identification of the entities and assignments of attribute values in the data set.

Attribute Accuracy Value

Definition: An estimate of the accuracy of the identification of the entities and assignments of attribute values in the data set.

Format: Free text.

Attribute Accuracy Explanation

Definition: The identification of the test that yielded the attribute accuracy value.

Format: Free text.

Logical Consistency Report

Definition: An explanation of the fidelity of the relationships in the data set, and the tests used.

Format: Free text.

Example:
Logical Consistency Report: Polygons intersecting the neatline are closed along the border. Segments making up the outer and inner boundaries of a polygon tie end-to-end to completely enclose the area. Line segments are a set of sequentially numbered coordinate pairs. No duplicate features

exist nor duplicate points in a data string. Intersecting lines are separated into individual line segments at the point of intersection. Point data are represented by two sets of coordinate pairs, each with the same coordinate values. All nodes are represented by a single coordinate pair which indicates the beginning or end of a line segment. The neatline is generated by connecting the four corners of the digital file, as established during initialization of the digital file. All data crossing the neatline are clipped to the neatline and data within a specified tolerance of the neatline are snapped to the neatline. Tests for logical consistency are performed by WAMS verification software (USFWS-NWI).

Completeness Report

Definition: Information about omissions, selection criteria, generalization, definitions used, and other rules used to derive the data set.

Format: Free text.

Example:
Completeness Report: All photo-interpretable wetlands are mapped. In the treeless prairies, 1/4 acre wetlands are mapped. In forested areas, small open water and emergent wetlands are mapped. In general, the minimum mapping unit is from 1 to 3 acres depending on the wetland type and the scale and emulsion of the source aerial photography. In regions of the country where evergreen forested wetlands predominate, wetlands smaller than 3 acres may not be mapped. Thus, a detailed on-the-ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included in this data set.

Lineage

Lineage provides information about the events, parameters, and source data which constructed the data set, and information about the responsible parties. This metadata element encompasses the following sub-elements.

Source Information
Provides a list of sources and a short discussion of the information contributed by each.

Source Citation

Definition: A citation to a source data set.

Each Source Citation takes the form of a citation. Guidelines and examples for applying the metadata sub-elements for Source Citation are contained in Section 5 (Citation Information). Multiples are allowed; each Source Citation requires a separate citation record.

Source Scale Denominator

Definition: The denominator of the representative fraction on a map (for example, on a 1:24,000-scale map, the source scale denominator is 24000).

Format: Integer; Source Scale Denominator >1

Example:
Source Scale Denominator: 24000

Type of Source Media

Definition: The medium of the source data set.

Format: Select from the following list; or free text.

Source Media list:

paper
stable-base material
microfiche
microfilm
audiocassette
chart
filmstrip
transparency
videocassette
videodisc
videotape
physical model
computer program
disc
cartridge tape
magnetic tape
online
CD-ROM
electronic bulletin board
electronic mail system

Source Time Period of Content

Definition: The time period(s) for which the source data set corresponds.

Guidelines and examples for applying the metadata sub-elements for Source Time Period of Content are contained in Section 6 (Time Period).

Source Currentness Reference

Definition: The basis on which the Source Time Period of Content information of the source data set is determined.

Format: Select from list: ground condition, publication date; or free text.

Example:
Source Currentness Reference: Publication date.

Source Citation Abbreviation

Definition: A short-form alias for the source citation.

Format: Free text.

Example:
Source Citation Abbreviation: USGS1
Source Citation Abbreviation: NWR3

Source Contribution

Definition: A brief statement identifying the information contributed by the source to the data set.

Format: Free text.

Example:
Source Contribution: Aerial photo from which wetlands spatial and attribute information are interpreted.

Process Step
Information about a single event.

Process description

Definition: An explanation of the event and related parameters or tolerances.

Format: Free text.

Example:
Process Description: NWI maps are compiled through manual photointerpretation of NHAP or NAPP aerial photography, supplemented by soil surveys and field checking of wetland photo signatures. Delineated wetland boundaries are manually transferred from interpreted photos to USGS 7.5 minute topographic quadrangle maps and then manually labeled. Quality control steps occur throughout the photointerpretation, map compilation, and map reproduction processes.

Source Used Citation Abbreviation

Definition: The Source Citation Abbreviation of a data set used in the processing step.

Format: Free text.

Process Date/Time

Definition: The date and time when the event was completed.

Format: Select from list: Unknown, Not Complete; or free text.

Source Produced Citation Abbreviation

Definition: The Source Citation Abbreviation of an intermediate data set that is: significant in the opinion of the data producer; is generated in the processing step; and is used in later processing steps.

Format: Free text; Source Citation Abbreviations from the Source Information entries for the data set.

Process Contact

Definition: The party responsible for the processing step.

Process Contact requires contact information. Guidelines and examples for applying the metadata sub-elements for Process Contact are contained in Section 7 (Contact Information). Multiples allowed; each Process Contact listed requires a separate contact record.

Positional Accuracy

Positional Accuracy provides an assessment of the accuracy of the positions of spatial objects. This metadata element encompasses the following sub-elements.

Horizontal Positional Accuracy
An estimate of accuracy of the horizontal positions of the spatial objects.

Horizontal Positional Accuracy Report

Definition: An explanation of the accuracy of the horizontal coordinate measurements and a description of the tests used.

Format: Free text.

Example:
Horizontal Positional Accuracy Report: Accuracy of these digital data (if not digitally revised), is based upon the use of source graphics which are compiled to meet National Map Accuracy Standards. NMAS horizontal accuracy requires that at least 90 percent of points tested are within 0.02 inches of the true position. The digital data are estimated to contain a horizontal positional error of less than or equal to 0.003 inches standard error in the two component directions relative to the source graphic. NMAS vertical accuracy requires that at least 90% of well defined points tested be within one half contour interval of the correct value. Comparison to the graphic source is used as control to assess digital positional accuracy. Cartographic offsets may be present on the graphic source, due to scale and legibility constraints. Digital map elements require edge alignment between data sets. Data along each quadrangle edge are tested against the data set for the adjacent quadrangle; tests check for positional accuracy between data sets within 0.02 inches tolerance. Features with like dimensionality, and with or without like attribution, that are within the tolerance are adjusted by moving the feature equally in both data sets. Features outside the tolerance are not moved. All disconnects are identified by edge matching flags that document the mismatch. These edge matching flags are located in the SDTS AHDR Attribute Primary Module in subfields EDGEWS, EDGEWR, EDGENS, EDGENR, EDGEES, EDGEER, EDGESS, and EDGESR. If the digital data underwent limited update revision, then the data meet at least the class 2 positional accuracy specification in the draft "United States National Cartographic Standards for Spatial Accuracy". If the digital data underwent standard update revision, then the data meet the class 1

positional accuracy specifications. Certain attributes and/or entities, e.g. BEST_ESTIMATE, convey data accuracy information; for details refer to the SDTS Data Dictionary Module.

Horizontal Positional Accuracy Value

Definition: An estimate of the accuracy of the horizontal coordinate measurements in the data set expressed in (ground) meters.

Format: Numeric.

Horizontal Positional Accuracy Explanation

Definition: The identification of the test that yielded the Horizontal Positional Accuracy Value.

Format: Free text.

Vertical Positional Accuracy

An estimate of accuracy of the vertical positions in the data set.

Vertical Positional Accuracy Report

Definition: An explanation of the accuracy of the vertical coordinate measurements and a description of the tests used.

Format: Free Text.

Vertical Positional Accuracy Value

Definition: An estimate of the accuracy of the vertical coordinate measurement in the data set expressed in (ground) meters.

Format: Numeric.

Vertical Positional Accuracy Explanation

Definition: The identification of the test that yielded the Vertical Positional Accuracy Value.

Format: Free text.

Cloud Cover

Definition: The area of a data set obstructed by clouds, expressed as a percentage of the spatial extent.

Format: Integer; 0 <= Cloud Cover <= 100, Unknown

3. Distribution

Distribution provides information about the availability of a data set or information resource. Along with describing options for obtaining the resource, it includes contact details for the distributor and ordering instructions. This section contains definitions and examples for the following metadata elements.

Distributor
Resource Description
Distribution Liability
Standard Order Process
Custom Order Process
Technical Prerequisites
Available Time Period

Distributor *

Definition: The organization(s) or individual(s) from whom the data set or information resource may be obtained.

Distributor requires contact information. Guidelines and examples for applying the metadata sub-elements for Distributor are contained in Section 7 (Contact Information). Multiples are allowed; each Distributor listed requires a separate contact record.

Resource Description

Definition: The internal identifier by which a data set or information resource is known by the distributor.

Format: Free text.

Example:
Resource Description: NODS8831 > 24000 high resolution images
Resource Description: Ground Water Pilot Project
Resource Description: USGS Open-File Report 91-346

Distribution Liability *

Definition: A statement of the liability assumed by the distributor of a data set or information resource.

Format: Free text.

Example:
Distribution Liability: CIESIN provides these data without any warranty of any kind, either expressed or implied. CIESIN shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by CIESIN.

Distribution Liability: Although these data have been processed successfully on a computer system at the U.S. Geological Survey, no warranty expressed or implied is made by the USGS regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. The Geological Survey will warrant the delivery of this product in computer-readable format, and will offer appropriate adjustment of credit when the product is determined unreadable by

correctly adjusted computer input peripherals, or when the physical medium is delivered in damaged condition. Requests for adjustment of credit must be made within 90 days from the date of this shipment from the ordering site.

Standard Order Process *

Standard Order Process contains descriptive information on the general ways in which a data set or information resource may be obtained or received, and related instructions and fee information. This metadata element encompasses the following sub-elements.

*Ordering Instructions **

Definition: General instructions and advice about obtaining the data resource from the distributor. Include details about any special terms and services provided. If the data resource is available in both digital and non-digital form, specify instructions for each.

Format: Free text.

Example:
Ordering Instructions: For digital data orders on 3.5" floppy disk, a maximum order of ten quads is allowed. Data may be ordered in latitude/longitude or State Plane Coordinate System coordinates (Universal Traverse Mercator coordinates are standard). Latitude/longitude coordinates are not available with GRASS format. For this service, the user must order data through USGS-ESIC for delivery on magnetic media. Please specify the desired coordinate system when ordering. Non-digital form: please specify wetlands overlay or wetlands overlay composited with USGS base map.

*Fees and Terms **

Definition: Specific details regarding any fees or terms under which the data resource may be obtained.

Format: Free text.

Example:
Fees and Terms: This data resource is available at no charge via FTP delivery. For delivery on 3.5" floppy disk, a base cost recovery charge and

shipping and handling will apply. Contact Customer Services for specific details.

Fees and Terms: The online copy of the data set may be accessed without charge. For delivery on magnetic tape, the charge for one data set is $40; for 2 data sets is $60, for 3 data sets is $80, for 4 data sets is $100, for 5 data sets is $120. When ordered in groups of 6 or more data sets, the charge is $7 per data set plus a $90 base fee.

Turnaround Time

Definition: An estimate of the time needed for filling an order.

Format: Free text.

Example:
Turnaround Time: Orders placed Monday through Thursday, 8:00a.m. to 5:00p.m. will be shipped the following day. Orders placed on Friday through Sunday, and holidays, will be shipped on the next business day.

Non-digital Form

Definition: A description of options for obtaining the data resource on non-computer-compatible media.

Format: Free text.

Example:
Non-digital Form: A Print edition of "Global Environmental Projections for the 21st Century" is available upon request.

Non-digital Form: Hardcopy NWI wetlands maps at various scales, on diazo paper or mylar, composited with or without the USGS base map.

Digital Form
Details providing options for obtaining the data resource on computer-compatible media.

Digital Transfer Information
A description of the form of the data to be distributed.

Format Name

Definition: The name of the data transfer format.

Format: Select from the following list; or free text.

Format Name list:

ARCE	ARC/INFO Export format
ARCG	ARC/INFO Generate format
ASCII	ASCII file, formatted for text attributes, declared format
BIL	Imagery, band interleaved by line
BIP	Imagery, band interleaved by pixel
BSQ	Imagery, band interleaved sequential
CDF	Common Data Format
CFF	Cartographic Feature File (U.S. Forest Service)
COORD	User-created coordinate file, declared format
DEM	Digital Elevation Model format (U.S. Geological Survey)
DFAD	Digital Feature Analysis Data (Defence Mapping Agency)
DGN	Microstation format (Intergraph Corporation)
DIGEST	Digital Geographic Information Exchange Standard
DLG	Digital Line Graph (U.S. Geological Survey)
DTED	Digital Terrain Elevation Data (MIL-D-89020)
DWG	AutoCAD Drawing Format
DX90	Data Exchange '90
DXF	AutoCAD Drawing Exchange Format
ERDAS	ERDAS image files (ERDAS Corporation)
GRASS	Geographic Resources Analysis Support System
HDF	Hierarchical Data Format
IGDS	Interactive Graphic Design System Format
IGES	Initial Graphics Exchange Standard
MOSS	Multiple Overlay Statistical System export file
netCDF	network Common Data Format
NITF	National Imagery Transfer Format
RPF	Raster Product Format (Defense Mapping Agency)
RVC	Raster Vector Converted format (MicroImages)
RVF	Raster Vector Format (MicroImages)
SDTS	Spatial Data Transfer Standard (Federal Information Processing Standard 173)
SIF	Standard Interchange Format (DOD Project 2851)
SLF	Standard Linear Format (Defense Mapping Agency)
TIFF	Tagged Image File Format
TGRLN	Topologically Integrated Geographic Encoding and Referencing (TIGER) Line format (Bureau of the Census)
VPF	Vector Product Format (Defense Mapping Agency)

Format Version Number

Definition: The version number of the format.

Format: Free text.

Example:
Format Version Number: 4.0

Format Version Date

Definition: The date of the version of the format.

Format: Free date.

Format Specification

Definition: The name of a subset, profile, or product specification of the format.

Format: Free text.

Example:
Format Specification: Atlas Graphics Format for DOS or Windows.

Format Information Content

Definition: a description of the content of the data encoded in a format.

Format: Free text.

Example:
Format Information Content: Spatial data, attribute information, and unique identifiers.

File Decompression Technique

Definition: Recommedations of algorithms or processes (including means of obtaining these algorithms or processes) that can be applied to read or expand data sets to which data compression techniques have been applied.

Format: Select from the following list; or free text.

File Decompression Technique: pkzip (DOS)
no compression applied
unzip (UNIX)
compress (UNIX)
tar (UNIX)
gzip (UNIX)
.sit (MAC - Stuffit)
.sea (MAC - Self-Extracting Archive)
.hqx (MAC - BinHex)

Example:
File Decompression Technique: No compression applied.

Transfer Size

Definition: The size, or estimated size, of the transferred data set in megabytes.

Format: Transfer Size > 0.0

Digital Transfer: Online Option
The means and media by which a data resource is obtained from the distributor. Information should specifically address the details on how to directly obtain the data resource electronically, and provide instructions for establishing communications with the distribution computer. The electronic address from which the data resource can be obtained from the distribution computer should also be included.

Network Resource Name

Definition: The name of the file or service from which the data resource can be obtained. Where appropriate, a Uniform Resource Locator (URL) should be provided.

Format: Free text.

Dialup Instructions
Information required to access the disribution computer remotely through telephone lines.

Lowest BPS

Definition: The lowest or only speed for the connection's communication, expressed in bits per second.

Format: Lowest BPS >=110

Highest BPS

Definition: The highest speed for the connection's communication, expressed in bits per second. Used in cases when a range of rates are provided.

Format: Highest BPS > Lowest BPS

Number DataBits

Definition: The number of data bits in each character exchanged in the communication.

Format: 7<= Number DataBits <=8

Number StopBits

Definition: The number of stop bits in each character exchanged in the communication.

Format: 1<= Number StopBits <=2

Parity

Definition: Parity error checking used in each character exchanged in the communication.

Format: Select from list: None, Odd, Even, Mark, Space

Compression Support

Definition: The data compression available through the modem service to speed data transfer.

Format: Select from list: V.32, V.32bis, V.42, V.42bis; or free text.

Dialup Telephone

Definition: The telephone number of the distribution computer.

Format: Free text.

Dialup Filename

Definition: The name of a file containing the data resource on the distribution computer.

Format: Free text.

Access Instructions

Definition: Specific instructions on how to access the data resource.

Format: Free text.

Example:
Access Instructions: Contact CIESIN User Services (ciesin.info@ciesin.org) for assistance.

Online Computer and Operating System

Definition: The brand of distribution computer and its operating system.

Format: Free text.

Example:
Online Computer and Operating System: The data set was developed and is stored on IBM PC compatible computers, running on a Novell network.

Digital Transfer : Offline Option
Information about media-specific options for obtaining the data resource.

Offline Media

Definition: The name of the media on which the data resource can be obtained.

Format: Select from the following list; or free text.

Offline Media list:
CD-ROM
3-1/2 inch floppy disk
5-1/4 inch floppy disk
9-track tape
4 mm cartridge tape
8 mm cartridge tape

1/4-inch cartridge tape

Recording Density

Definition: The density in which the data resource can be recorded.

Format: Recording Density > 0.0

Example:
Recording Density: 1.4

Recording Density Units

Definition: The units of measure for the recording density.

Format: Select from list: bpi, gb, kb, mb; or free text.

Example:
Recording Density Units: mb

Recording Format

Definition: The options available, or method used to write the data set to the medium.

Format: Select from the following list; or free text.
Recording Format list:
cpio
tar
High Sierra
ISO 9660
ISO 9660 with Rock Ridge extensions
ISO 9660 with Apple HFS extensions

Example:
Recording Format: MS DOS 5.0
Recording Format: ISO 9660

Compatibility Information

Definition: The description of other limitations or requirements for using the medium.

Format: Free text.

Example:
Compatibility Information: MS DOS Version 5.0

Custom Order Process

Definition: A description of customized distribution services that may be available, and the terms and conditions for obtaining these services.

Format: Free text.

Example:
Custom Order Process: Contact CIESIN User Services (ciesin.info@ciesin.org, telephone: 914-365-8988) for further information.

Technical Prerequisites

Definition: A description of any technical capabilities that the user must have to utilize the data resource in the form(s) provided by the distibutor.

Format: Free text.

Example:
Technical Prerequisites: Check NWI's ftp site, maps directory for an explanation of the wetland codes. Check NWI's ftp site, software directory for a program that will parse the wetland codes to fixed length format. Check NWI's ftp site, software directory for an AML to convert NWI DLG files to ARC/INFO coverages.
Technical Prerequisites: Must be able to read a Lotus 1-2-3 V. 4.0 file format.

Available Time Period

Definition: The time period when the data resource will be available from the distributor.

Available Time Period requires time period information. Guidelines and examples for applying the metadata sub-elements for Available Time Period are contained in Section 6 (Time Period).

4. Metadata Reference

Metadata Reference provides information on the party responsible for compiling and maintaining the metadata for the data set or information resource being described. This section contains definitions and examples for the following metadata elements.

Metadata Status
Metadata Contact
Metadata Standard
Metadata Access and Use
Metadata Security Information
Metadata Source Reference(s)

Metadata Status *

Metadata Status contains administrative information designed to assist in the metadata management process by providing a record of the current and long-term status of a data resource. This metadata element encompasses the following sub-elements.

Entry ID

Definition: A unique identifier for the metadata record.

Format: System assigned.

*Filename **

Definition: A shortened, recognizable version of the the data resource title.

Format: Text; words separated by underscore (_)

Example:
Filename: global_environ_policy_db
Filename: archive_census_products

Metadata Creation Date

Definition: The date the metadata were created.

Format: System assigned.

Metadata Revision Date

Definition: The date the metadata were last updated.

Format: System assigned.

Metadata Status Code

Definition: A letter code indicating the current status of the metadata record.

Format: Select from list: I (In process), GP (General Public; released), ER (External Review), H (on Hold), W (Withdrawn), T (Test).

Metadata Contract Code

Definition: Identifier for the project(s) or organization(s) which support the metadata management for this information resource. Assign the Metadata Contract Code(s) to indicate which metadata collection the resource belongs.

Format: Select from the following list; or free text.

ATSDR	Agency for Toxic Substance and Disease Registry
CIESIN GILS	CIESIN - Government Information Locator Service
EPA-national	Environmental Protection Agency - national
GCMD	Global Change Master Directory
GCRIO	Global Change Research Information Office
GLREIS	Great Lakes Region Environmental Information System
LQI	Land Quality Indicators
SAIC	Science Applications International Corporation
SEDAC	Socioeconomic Data and Applications Center
US Federal GILS	US Federal - Government Information Locator Service
USDA	United States Department of Agriculture
IMS	Information Management System
WDC-A	World Data Center A for Human Interactions in the Environment

Example:
Metadata Contract Code: SEDAC
Metadata Contract Code: GCMD

*Metadata Review Date **

Definition: The date of the latest review of the metadata record.

Format: yyyy-mm-dd (year-month-day).

Example:
Metadata Review Date: 1997-03-26

*Metadata Future Review Date **

Definition: The date indicating when the metadata record should be reviewed again.

Format: yyyy-mm-dd (year-month-day).

Example:
Metadata Future Review Date: 1998-03-26

Metadata Time Convention

Definition: The form used to convey time of day information in the metadata record. Used if time of day information is included in the metadata for a data resource.

Format: Select from list: local time, local time with time differential factor, universal time.

Example:
Metadata Time Convention: local time.

Metadata Reviewer(s)

Definition: The person(s) responsible for reviewing the content of the metadata record for accuracy and completeness.

Metadata Reviewer(s) requires contact information. Guidelines and examples for applying the metadata sub-elements for Metadata Reviewer(s) are contained in Section 10 (Contact Information). Multiples are allowed; each Metadata Reviewer listed requires a separate contact record.

Metadata Contact *

Definition: The party responsible for the metadata content. The Metadata Contact should be the organization or person that can answer questions about the metadata and can receive reports about updates or errors in the metadata record.

Metadata Contact requires contact information. Guidelines and examples for applying the metadata sub-elements for Metadata Contact are contained in Section 7 (Contact Information). Multiples are allowed; each Metadata Contact listed requires a separate contact record.

Metadata Standard *

Definition: The name of the metadata standard used to document the data resource.

Format: Select from the following list:

CSDGM	Content Standards for Digital Geospatial Metadata
GILS	Government Information Locator Service
DIF	Directory Interchange Format

Example:
Metadata Standard: CSDGM Content Standards for Digital Geospatial Metadata
Metadata Standard: DIF Directory Interchange Format

Metadata Standard Version*

Definition: Identification of the version of the metadata standard used to document the data or information resource.

Format: Free text.

Example: Version 2.0

Metadata Time Convention

Definition: The form used to convey time of day information in the metadata record. This sub-element is used if time of day information is included in the metadata for a data or information resource.

Format: Select from the following list: local time, local time with time differential, universal time.

Metadata Access and Use

Metadata Access and Use provides information regarding any restrictions that may exist on accessing and using the metadata for a particular data set or information resource. This metadata element encompasses the following sub-elements.

Metadata Access Constraints

Definition: Restrictions and legal prerequisites for accessing the metadata. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the metadata.

Format: Free text.

Example:
Metadata Access Constraints: None

Metadata Use Constraints

Definition: Restrictions and legal prerequisites for using the metadata after access is granted. These include any use constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on using the metadata.

Format: Free text.

Example:
Metadata Use Constraints: No use constraints currently apply to this metadata record.

Metadata Security Information

Metadata Security Information describes any handling restrictions that may be imposed on the metadata because of national security, privacy, or other concerns. This metadata element encompasses the following sub-elements.

Metadata Security Classification System

Definition: the name of the classification system for the metadata.

Format: Free text.

Metadata Security Classification

Definition: The name of the handling restrictions on the metadata.

Format: Select from list: top secret, secret, confidential, restricted, unclassified, sensitive; or free text.

Metadata Security Handling Description

Definition: any additional information about the restrictions on handling the metadata.

Format: Free text.

Metadata Source Reference(s) *

Definition: A citation to any information resources used to compile the metadata and construct the metadata record.

Each Metadata Source Reference takes the form of a citation. Guidelines and examples for applying the metadata sub-elements for Metadata Source Reference(s) are contained in Section 5 (Citation Information). Multiples are allowed; each Metadata Source Reference listed requires a separate citation record.

5. Citation Information

Citation Information provides the bibliographic details for referencing the data set or information resource being described, as well as any other source material utilized in creating the metadata record. As such, Citation Information is used by multiple sections of these metadata guidelines.

This section contains definitions and examples for the following metadata elements.

Title
Originator
Publication Date
Publication Time
Edition
Journal Information
Series Information
Publication Information
Language
Data Presentation Form
Online Linkage
Other Citation Details
Larger Work Citation

Title*

Definition: The formal, established title of the data or information resource being described. The title is always the full and complete name by which the resource is known. The title should be descriptive enough to allow a user to make a reasonable decision as to whether the resource may be of interest. The title is never changed or abbreviated in the metadata record. If an acronym exists, place it in parentheses following the full title.

Format: Free text.

Example:
Title: Gridded Population of the World (GPW)
Title: Population Database of Mexico
Title: World Treaties for the Protection of the Environment
Title: Public Use Microdata Samples (PUMS)

Originator*

Definition: The name of the organization(s) or individual(s) that developed, created, or authored the data set or information resource. Use the full name of the organization. If an acronym exists, place it in parentheses after the name of the organization. If the name of editors or compilers are provided, the name must be followed by "(ed.)" or "(comp.)" respectively.

Format: Free text.

Examples:
Originator: Center for International Earth Science Information Network (CIESIN)
Originator: John Smith (comp.)

Publication Date/Time*

Definition: The date when the data or information resource was published or otherwise made available. Use the 'copyright' date if available. If there is no established date on or within the item, indicate this by using "[n.d.]" in brackets. If there is no established date on or within the item, but the metadata author knows the date from other sources, treat this as "cataloger supplied" information and indicate the

date by placing it in brackets "[1997]". If relevant, include the time of day when the data set was published or otherwise made available for release.

Format: Free text

Example:
Publication Date: 1997
Publication Date: [n.d.] (no established date available for item)
Publication Date: September 1995
Publication Date: [1997] (date supplied by metadata author; known from a source other than the item itself)
Publication Date: 1997-01-20 / 12:20:03 (date and time)

Edition

Definition: The formally designated version of the data set or information resource being described.

Format: Free text

Example:
Edition: 2.0
Edition: 3rd edition
Edition: Second Edition

Journal Information

Journal Information identifies the journal publication of which the data set or information resource is a part. This metadata element encompasses the following sub-elements.

Journal Title

Definition: The formal established title of the journal publication.

Format: Free text.

Example:
Journal Title: Social Science Quarterly

Volume/Issue Identification

Definition: Information identifying the volume and issue of the journal publication.

Format: Free text.

Example:
Volume/Issue Identification:: 10 (2): 18-27
Volume/Issue Identification:: 53 : 993-1027
Volume/Issue Identification:: vol. 8, no.2, pp.1-12

Series Information

Series Information identifies the series publication of which the data set or information resource is a part. A "series" is generally defined as a succession of continuously numbered volumes or issues on a subject or related subjects. This metadata element encompasses the following sub-elements.

Series Name

Definition: The title of the series publication of which the data set or information resource is a part.

Format: Free text.

Example:
Series Name: Regional Environmental Indicators of Global Climate Change

Issue Identification

Definition: Information identifying the issue of the series publication of which the data set or information resource is a part.

Format: Free text.

Example:
Issue Identification: Number 7: Sub-Saharan Africa

Publication Information*

Publication information contains details for a published data set or information resource. This metadata element encompasses the following sub-elements.

Publication Place*

Definition: The name of the city (and state / province and country if needed to identify the city) where the data set or information resource was published. If no established place of publication can be found on or within the resource, indicate this lack of information as ["s.l."]. If no established place of publication can be found on or within the resource, but the metadata author can confirm the place of publication from other sources, treat this as "cataloger supplied" information and indicate the place of publication by placing it in brackets "[Nairobi]".

Format: Free text.

Example:
Publication Place: London
Publication Place: University Center, Michigan, USA
Publication Place: [s.l.] (place of publication not known)
Publication Place: [Paris] (cataloger supplied information)

Publisher*

Definition: The name of the organization(s) or individual(s) that published the data set or information resource. If an acronym exists for an organization, place it in parentheses following the full organization name. If no publisher is given, or is not evident on or within the resource, indicate this by using "[s.n.]".

Format: Free text.

Example:
Publisher: The World Bank
Publisher: The Center for International Earth Science Information Network (CIESIN)
Publisher: [s.n.] (publisher not known).

Language

Definition: The language(s) in which the data set or information resource is written or otherwise presented.

Format: Free text.

Example:

Language(s): French, German, English
Language(s): Japanese, English
Language(s): Chinese

Data Presentation Form

Definition: The medium, material type, format, or mode in which the data or information resource is presented.

Format: Select from the following list:

Data Form List:
print
computer database
computer file
online
electronic text
multimedia
image
atlas
diagram
globe
map
model
profile
remote-sensing image
section
view

Note: If you are writing metadata for geospatial data in compliance with the FGDC Content Standards for Digital Geospatial Metadata (CSDGM), you must confine your selection to the following terms only: atlas, diagram, globe, map, model, profile, remote-sensing image, section, view.

Examples:
Data Presentation Form: computer file
Data Presentation Form: model
Data Presentation Form: online
Data Presentation Form: section

Online Linkage

Definition: The name of an online computer resource that contains the data set.

Format: Select from the following list:

http://	Hypertext Transfer protocol
ftp://	File Transfer protocol
telnet://	Reference to interactive sessions
gopher://	Gopher protocol
wais://	Wide Area Information Servers
mailto://	Electronic mail address; electronic mailing list address
news:	USENET news
file://	Host-specific file names
nntp://	USENET news using NNTP access
prospero://	Prospero Directory Service
z39.50s://	Z39.50 Session
z39.50r://	Z39.50 Retrieval
nfs://	network file system protocol

Example:
Online Linkage: http://www.ciesin.org/
Online Linkage: ftp://ftp.ciesin.org/

Other Citation Details

Definition: Additional information necessary to complete the citation.

Format: Free text.

Larger Work Citation

Definition: Citation information identifying a larger work of which the data set or information resource is a part.

Format: Free text.

Larger Work Citation requires citation information. Guidelines and examples for applying the metadata sub-elements for Larger Work Citation are contained in Section 5 (Citation Information).

6. Time Period

Time Period contains details about the date and time of an event and provides a means of stating temporal information. As such, Time Period is used by multiple sections of these metadata guidelines.

This section contains definitions and examples for the following metadata elements.

Single Calendar Date / Time
Multiple Calendar Date / Time
Single Range of Dates / Times
Multiple Range of Dates / Times

Single Calendar Date/Time

Definition: A means of encoding a single date and time. Includes the year (and optionally the month, or month and day), followed by the hour (and optionally the minute, or minute and second).

Format: yyyy-mm-dd / hh:mm:ss (year-month-day / hour:minutes:seconds)

Example:
Single Calendar Date/Time: 1996-07-24 / 14:02:09
Single Calendar Date/Time: 1997-01-21

Multiple Calendar Dates/Times

Definition: A means of encoding multiple individual dates and times. Includes the year (and optionally the month, or month and day), followed by the hour (and optionally the minute, or minute and second).

Format: yyyy-mm-ddThh:mm:ss (year-month-day / hour:minutes:seconds)

Example:

Multiple Calendar Dates/Times:	1996-01-21 / 09:12:02
	1996-10-14 / 13:20:14
Multiple Calendar Dates/Times:	1976-07-20
	1986-08-18
	1996-07-28

Single Range of Dates/Times

Definition: A means of encoding a range of dates and times. Includes the "beginning date and time" e.g. the year (and optionally the month, or month and day) followed by the hour (and optionally the minute, or minute and second); and the "ending date and time" using the same notation as above.

Format: yyyy-mm-dd / hh:mm:ss / yyyy-mm-ddThh:mm:ss (year-month-day / hour:minutes:seconds)

Example:
Single Range of Dates/Times: 1996-10-24 / 13:20:04 / 1996-12-13 / 10:27:14

Single Range of Dates/Times: 1995-01-01 / 1995-12-31

Multiple Range of Dates/Times

Definition: A means of encoding more that one range of dates and times. Each range of dates and times listed includes a "beginning date and time" e.g. the year (and optionally the month, or month and day) followed by the hour (and optionally the minute, or minute and second); and the "ending date and time" using the same notation as above.

Format: yyyy-mm-dd / hh:mm:ss / yyyy-mm-dd / hh:mm:ss (year-month-day / hour:minutes:seconds)

Example:

Multiple Range of Dates/Times:	1995-01-01 / 1995-12-31
	1996-01-01 / 1996-12-31
	1997-10-01 /
Multiple Range of Dates/Times:	1980 / 1985
	1990 / 1994

7. Contact Information

Contact Information provides the identity of, and the means to communicate with, the person(s) and organization(s) associated with the data set or information resource. This association can take several forms (e.g. technical assistance, distribution information, metadata content, etc.). As such, Contact Information is used by multiple sections of these metadata guidelines.

This section contains definitions and examples for the following metadata elements.

Contact Information - Person
Contact Information - Organization
Address Details
Communication Details

Contact Information - Person

Contact Information - Person contains the name, position title, and contact instructions for the person(s) associated with the data set or information resource being described. Multiples are allowed; a separate record for each individual is required.

This metadata element encompasses the following sub-elements.

Name*

Definition: The name of the individual to whom the contact information applies.

Format: Free text. First, Middle, and Last Name.

Example:
Name: John Smith
Name: Henry David Thoreau

Position Title

Definition: The title of the individual listed as contact.

Format: Free text.

Example:
Position Title: Information Specialist
Position Title: Data Analyst
Position Title: Social Scientist

Hours Available

Definition: The time period when the individual can be contacted.

Format: Free text.

Example:
Hours Available: 9:00 a.m. - 3:00 p.m. EST, Monday - Friday

Contact Instructions

Definition: Additional instructions on how and when to contact the individual.

Format: Free Text.

Contact Information - Organization

Contact Information - Organization contains the name, department, and contact instructions for the organization(s) associated with the data set or information resource being described. Multiples are allowed; a separate record for each organization is required.

This metadata element encompasses the following sub-elements.

Organization Name*

Definition: The name of the organization to which the contact information applies.

Format: Free text.

Example:
Organization Name: Center for International Earth Science Information Network

Organization Acronym

Definition: The acronym of the organization, if one exists.

Format: Free text.

Example:
Acronym: CIESIN

Organization Department

Definition: The department or unit within the organization to which the contact information applies.

Format: Free text.

Example:
Department: Metadata Administration
Department: User Services

Hours Available

Definition: The time period when the organization or department may be contacted.

Format: Free text.

Example:
Hours Available: 9:00 a.m. - 3:00 p.m. EST, Monday - Friday

Contact Instructions

Definition: Additional instructions on how or when to contact the organization or department.

Format: Free text.

Address Details*

Address Details includes information describing the type of address and the individual components of the address for the person or organization to which the contact information applies.

This metadata element encompasses the following sub-elements.

Address Type

Definition: Information describing the nature of the address.

Format: Select from list: mailing address, physical address, mailing and physical address; or free text.

Building/Office detail

Definition: A name or descriptive designation that may be associated with the building, office, or office complex.

Format: Free text.

Example:
Building/Office detail: Southpointe Towers, Suite 205
Building/Office detail: Research Park

Street Address*

Definition: details defining the street location.

Format: Free Text.

Post Office Box

Definition: The post office box number or designation if one exists for the address.

Format: Free text.

City*

Definition: The city of the address.

Format**:** Free text.

State or Province*

Definition: The state or province of the address. The full name of the state or province should be given (do not use abbreviations).

Format: Free text.

Postal Code*

Definition: The Zip code or other postal code for the address.

Format: Free text.

Country*

Definition: The country of the address.

Format: Free text.

Communication Details*

Communication Details includes information describing various means of directly contacting the person or organization to which the contact information applies. This metadata element encompasses the following sub-elements.

Voice Telephone

Definition: The telephone number by which individuals can speak with the person or organization.

Format: Include country code, region (area) code, and local number.

Example:
Voice Telephone: 1-517-797-2700

Facsimile Telephone

Definition: The telephone number of a facsimile machine of the person or organization.

Format: Include country code, region (area) code, and local number.

Example:
Facsimile Telephone: 1-517-797-2600

Electronic Mail Address

Definition: The address of the electronic mailbox (email) of the person or organization.

Format: Free text.

Example:
Electronic Mail Address: jsmith@abc.com

Other

Definition: The name of any other resource that provides a means of communicating with the contact person or organization (such as telex, cable, online linkage, etc.).

Format: If providing an online address, follow the Uniform Resource Locator (URL) convention of the Internet.

Example:
Online Linkage: http://www.ciesin.org/userservices/

TDD/TTY Telephone

Definition: The telephone number by which hearing-impaired individuals can contact the person or organization.

Format: Use standardized format.

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Appendix A

CIESIN Metadata Guidelines for World Wide Web Sites

Records describing World Wide Web sites utilize only two sections of the CIESIN Metadata Guidelines: Identification Information and Metadata Reference. The following presents a summary list of metadata elements from these sections, and guidelines for interpreting and applying these elements to records describing web sites. Where indicated (e.g. "Follow the Metadata Guidelines"), consult the definitions and instructions outlined in Parts One and Two of this document. Additional metadata elements may also be used if appropriate for the web site being described, or to meet specific project requirements.

Metadata Elements

Section 1: Identification Information

- Data Resource Citation:
  - Title
  - Originator
  - Publication Date
  - Publication Information
  - Publication Place
  - Publisher
- Description:
  - Abstract
  - Language(s)
- Keywords:
  - Theme Keyword(s)
  - Place Keyword(s)
  - General Keyword(s)
  - Specialized Project Keyword(s)
- Point of Contact
- Related Reference(s)

Section 4: Metadata Reference

- Metadata Status:
  - Filename
  - Metadata Status Code
  - Metadata Contract Code
  - Metadata Review Date
  - Metadata Future Review Date

- Metadata Contact

- Metadata Access and Use: Metadata Access Constraints
  Metadata Use Constraints

- Metadata Source Reference(s)

Guidelines for applying metadata elements

1. IDENTIFICATION INFORMATION

Data Resource Citation

Title: For web sites the chief source of title information is the first screen of the site being described. The title must be transcribed exactly as it appears (excluding initial articles such as "The").

Originator: The name of the person or corporate entity (organization, institution, corporation, or department) that created or developed the web site. Use the full name of the organization. If an acronym exists, place it in parentheses after the name of the organization.

Publication Date: Follow the Metadata Guidelines; use the copyright date if one is listed.

Publication Place: Follow the Metadata Guidelines.

Publisher: Follow the Metadata Guidelines.

Data Presentation Form: Follow the Metadata Guidelines; select "online" for web sites.

Online Linkage: Follow the Metadata Guidelines

Other Citation Details: Follow the Metadata Guidelines.

Description

Abstract: The abstract for a web site should very briefly describe the site

itself - the subject range, how it is organized, the nature of the information and data resources it identifies and/or makes available. Include the full title of the web site in the first sentence of the abstract.

Language(s): The language(s) in which the web site is presented.

Keywords

Follow the Metadata Guidelines for:

Theme Keyword(s)
Theme Keyword Thesaurus
Place Keyword(s)
Place Keyword Thesaurus
General Keyword(s) (optional but useful)
Specialized Project Keyword(s)

Point of Contact

The person or corporate entity (organization, institution, corporation, or department) responsible for maintaining the web site and responding to questions regarding access to the site itself or to resources included in that site. Follow the Metadata Guidelines.

Related Reference

Follow the Metadata Guidelines.

4. METADATA REFERENCE

Follow the Metadata Guidelines for this section. Include information for all relevant metadata elements.

Appendix B

CIESIN Metadata Guidelines for Person or Organization

Records describing a Person or an Organization utilize only two sections of the CIESIN Metadata Guidelines: Identification Information and Metadata Reference. The following presents a summary list of metadata elements from these sections, and guidelines for interpreting and applying these elements to Person or Organization records. Where indicated (e.g. "Follow the Metadata Guidelines"), consult the definitions and instructions outlined in Parts One and Two of this document. Additional metadata elements may also be used if appropriate for the person or organization being described, or to meet specific project requirements.

Metadata Elements

Section 1: Identification Information

- Data Resource Citation: Title
- Description: Abstract
  Language(s)
- Keywords: Theme Keyword
  Place Keyword
- Point of Contact
- Related Reference(s)

Section 4: Metadata Reference

- Metadata Status: Filename
  Metadata Status Code
  Metadata Contract Code
  Metadata Review Date
  Metadata Future Review Date
- Metadata Contact
- Metadata Access and Use: Metadata Access Constraints
  Metadata Use Constraints
- Metadata Source Reference(s)

Guidelines for applying metadata elements

1. IDENTIFICATION INFORMATION

Data Resource Citation

Title: The name of the Person or the Organization.

No other metadata sub-elements are needed from Data Resource Citation.

Description

Abstract: Person: A description of expertise, education, and experience of the person being described. This can resemble a professional biographical statement.

Organization: A description of the work, purpose, goals, mission, etc. of the organization being described.

Language(s): The language(s) within which the person or organization works.

Keywords

Theme Keyword: A word or phrase used to describe the topic or subject area on which the work of this person or organization focuses.

Theme Keyword Thesaurus

Place Keyword: The name of the geographic location characterized by the work of this person or organization.

Place Keyword Thesaurus

Point of Contact

Contact information of the person or organization being described. Use only the contact details consented to by the person or organization. Follow the Metadata Guidelines.

Related Reference

Provide full citation information for any relevant data set, publication, or information resource produced, authored, and/or contributed to by the person or organization being described. (If you wish to describe these resources in greater detail, you will need to create a separate metadata record for each Related Reference.) Follow the Metadata Guidelines.

4. METADATA REFERENCE

Follow the Metadata Guidelines for this section. Include information for all mandatory as well as any other relevant metadata elements.

Appendix C

Sample Metadata Records

Appendix D

Overview of Metadata Production Process

The following provides a general outline developed and used by CIESIN for producing metadata.

1. Identify data / information resource
    - determine relevance and appropriateness to collection
    - does metadata already exist for this resource? (search metadatabase)
    - does adequate descriptive documentation exist? Despite how relevant a data resource may seem, it must have adequate descriptive material available. *****See note on Metadata Documentation.

2. Review data / information resource
    - what is it about?
    - who is the audience / user community?
    - how will it be used?
        - content
        - technology
    - what kinds of descriptive information / metadata are essential to include in the record?
    - what information is missing?
        - contact the data owners / data source for additional information
    - how will users access or acquire the data resource?
        - online (need instructions; email, URL, etc.)
        - contact another organization / institution (need full contact information)
    - verify access information

3. Create metadata record
    - establish title
        - for non-CIESIN resources, the title must be recorded exactly as it appears on the item itself. For resources produced by CIESIN, work with staff to establish the title.
    - write abstract
    - determine appropriate indexing terms and keywords
    - complete remaining content and access fields
    - record source(s) utilized in creating the metadata record (references)

4. Review completed metadata record
    - internal review - accuracy, consistency and completeness of metadata content (see #2 above)
    - external review - by data source / data owners (optional)

5. Edit metadata content (if needed) and perform final review

6. Release record to catalog(s) - (metadata status = GP)

7. Metadata maintenance procedures

    - establish time frame for "periodic review" of metadata records. This is listed in the record as "Future Review Date" (e.g. six months or one year from record creation date; should be independently determined per organizational or institutional needs).

    - review and update content
        - is the data/information resource still relevant to CIESIN projects and catalogs?
        - is this resource still available?
        - has the resource changed (has the content/data changed, been updated, added to, etc.)?
        - has the mode of access changed?
        - is contact information still current?

    - conduct internal review (if appropriate); consider currency, accuracy, consistency and completeness of metadata content.

    - external review by data owners/data source (optional)

Part of any metadata maintenance process requires that a periodic assessment be made as to the continued appropriateness of particular data or information resources to the CIESIN catalog(s), (i.e. do certain resources continue to fit the institutional purpose of the catalog?). If a resource continues to be appropriate for inclusion, a complete review and update of the metadata record should be performed on a regular basis. If it is determined that the resource no longer fits within the purpose of the catalog, the metadata record should be removed.

Update or withdrawal of metadata records from a catalog can occur at any time. However, an established time frame for such maintenance tasks ensures a level of consistency and makes best use of staff resources. A few metadata records may always be somewhere in the update process; and this is part of the rationale for establishing a reasonable routine for metadata maintenance procedures. Ultimately, any metadata maintenance must be defined by the catalogers and/or metadata producers.

***** Metadata Documentation

Any metadata record intended for release through the CIESIN catalog(s) must be associated with adequate documentation. "Documentation" here means physical evidence that the item described exists, is available, and has enough descriptive information for a catalog record. Metadata documentation is essentially the source material used to create the metadata. Compiling such documentation is important as it is the primary (and often the only) way to verify the metadata, to ensure that it is accurate and current, and that copyright is not jeopardized. Additionally, it provides a history of the metadata, so reviewing and updating the record at a later date can be done with full knowledge of where the original metadata came from.

For the most part, email messages, notes from phone calls, published catalog lists, or library catalog lists do not constitute adequate documentation for creating metadata, though they would augment the history of a record and should be included in the record file. The following are some guidelines for the types of documentation expected to accompany metadata.

- for print resources: copy of the title page and verso (listing copyright and publisher information), table of contents, foreword, and introduction.

- for computer files: copy of relevant portions of print materials describing this data. A readme file is not adequate metadata documentation by itself, but should be combined with other source material that provides more substantive information on what the data resource is *about*. If a web site was used as the source of metadata, provide a copy of the homepage and include the URL.

- for Internet resources: copy of the homepage with the URL, any other web pages or sites used in creating metadata for the item being described. Note: Never cut and paste a homepage / website, or part of a homepage / website, into the Abstract of a metadata record. This violates copyright and does a dis-service to users searching for specific information. Catalog a website as a 'brief record'. The URL in the Data Resource Citation will enable users to go directly to the site and decide for themselves if it is of interest. Consult the CIESIN Metadata Guidelines for World Wide Web Sites for further metadata instructions.