

Dublin Core Metadata Elements
Best Practices
Version 1.1
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CCDL Metadata Sub-Task Force
Kelley Bachli, Judy Moser and Pat Vince

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Introduction

Purpose of the Metadata Best Practices

The Claremont Colleges Digital Library's (CCDL) Metadata Best Practices provides fundamental guidelines to the seven Claremont Colleges for creating metadata records for digital resources destined for dissemination in the CCDL. Developing these metadata best practices according to standards described in this document will:

- 1) Ensure quality control for metadata records.
- 2) Improve discovery of resources.
- 3) Increase interoperability across all collections created by the Claremont Colleges.
- 4) Increase interoperability with other digital libraries participating in the Open Archives Initiative.
- 5) Inform users on the digital object structure and necessary viewers needed to view the digital resource.
- 6) Assist with management and long-term preservation of digital files.

The best practices address the needs of a diverse audience from the seven Claremont Colleges and accommodate different knowledge backgrounds and metadata skill levels of those charged with creating metadata records, including librarians, authors, administrative assistants, Web page developers, or volunteers. We have attempted to provide clear and concise guidelines and in most cases have followed up with examples.

Metadata Defined

There are many definitions for the term metadata. The most widely accepted and commonly used is descriptive information about digital resources. The term metadata came about with the advent of the World Wide Web and is the modern term for the bibliographic information that libraries traditionally entered into their catalogs or the registration information that museums enter into their systems.

Metadata creation is a necessary part of digital collections disseminated via the World Wide Web and must be incorporated into the project's workflow. Metadata is associated with the digital resource to support the discovery, use, management, and preservation of the digital resource. There are three commonly accepted metadata types with some overlap between the three.

- **Discovery/Descriptive metadata:** information used for the indexing, discovery and identification of a digital resource. Examples are resource title, creator of the resource, and subject of the resource to name a few.
- **Structural metadata:** information used to display and navigate digital resources; information on the internal organization of the digital resource; information on viewer or reader plug-in needed to open the digital resource.

- **Administrative metadata:** information needed to manage the resource over time, including technical information such as the resolution of the image, file size, file format, hardware/software used to produce the digital resource, etc.

What is Dublin Core?

Dublin Core is an internationally recognized metadata standard comprised of fifteen elements used to describe a resource. The semantics of these elements have been established through consensus by an international, cross-disciplinary group of professionals from the library, museum, publishing, computer science and text encoding communities and other related fields of scholarship. The Dublin Core Metadata Initiative (DCMI) Element Set has been approved by ANSI and assigned the number Z39.85.

The CCDL has adopted the Dublin Core Metadata Element Set and Qualifiers as its metadata schema and uses the element set as defined by the Dublin Core Metadata Initiative.

Characteristic of the Dublin Core element set are:

- Simplicity of creation and maintenance allowing a non-specialist to easily and efficiently create descriptive records for digital resources.
- Commonly understood terminology and semantics that are universally understood and supported.
- International in scope ensures that the standard will address the multicultural and multilingual nature of networked resources.
- Extensibility by allowing additional elements to be added that make sense within a specific discipline. Additional elements can be linked to Dublin Core to meet the need for extensibility to aid in additional resource discovery and granularity needed for access.

Using Dublin Core Metadata Elements

Discovery Metadata

Although each element is optional and repeatable in its standard form, the CCDL has made specific recommendations for each element.

Dublin Core Metadata Initiative issued a list of recommended Dublin Core Qualifiers in July of 2000 and is listed on page 12. These qualifiers are used with the 15 elements and are broken into two broad classes:

Element Refinement. These qualifiers make the meaning of an element narrower or more specific. A refined element shares the meaning of the unqualified element, but with a more restricted scope.

Encoding Scheme. These qualifiers identify schemes that aid in the interpretation of an element value. These schemes include controlled vocabularies and formal notations or parsing rules. The definitive description of an encoding scheme for qualifiers must be clearly identified and available for public use.

All metadata mapping is from Dublin Core to MARC21. Mapping can vary when going from MARC 21 to Dublin Core.

We recommend the ordering of the metadata elements as follows:

Element Name:	Title
Label:	Title
Definition:	A name given to the resource.
Comment:	Typically, Title will be a name by which the resource is formally known.
Repeatable:	Yes
Mandatory:	Yes
Qualifier:	Alternative Title

CCDL Recommendation: All images must have a title. Use “Untitled” only when the image is specifically named “Untitled.” If no title exists construct one using Describing Archives: A Content Standard (DACS). If the cataloger assigns a title, use a title that best describes the image. The title should describe the image in basic terms, but should not attempt to provide an exhaustive description. If available, use information provided on or with the image.

Element Name:	Creator
Label:	Creator
Definition:	An entity primarily responsible for making the content of the resource.

Comment: Examples of Creator include a person, an organization, or a service. Typically, the name of a Creator should be used to indicate the entity.

Repeatable: Yes

Mandatory: If available

CCDL Recommendation: If no creator can be determined leave blank. In the Notes field enter Creator Unknown. Data entry of the creator name follows the AACr2 format, generally, last name, first name. Creator entries should follow an authority file if available such as the Library of Congress Name Authority for books or the Getty Union List of Artists Names for artwork (<http://www.getty.edu/research/tools/vocabulary/ulan/>). Example: Shakespeare, William, 1564-1616; Joyce, James, 1882-1941 If an item has more than one creator, enter name(s) in the same creator field separated by a semi-colon.

Element Name: **Contributor**

Label: Contributor

Definition: An entity responsible for making contributions to the content of the resource.

Comment: Examples of Contributor include a person, an organization, or a service. Typically, the name of a Contributor should be used to indicate the entity.

Repeatable: Yes

Mandatory: No

CCDL Recommendations: Examples of a contributor include editor, transcriber, illustrator, etc. Follow the same guidelines as the CREATOR field.

Element Name: **Subject**

Label: Subject and Keywords

Definition: A topic of the content of the resource.

Comment: Typically, Subject will be expressed as keywords, key phrases or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.

Repeatable: Yes

Mandatory: Yes

Qualifier: LCSH
MeSH
DDC
LCC
UDC
And other subject authorities deemed appropriate (example: AAT)

CCDL Recommendation: Select a primary thesaurus to use for a collection. The Library of Congress Thesaurus for Graphic Materials (TGM). Use this thesaurus for images created as works of art, for example, snapshots, documentary photographs, amateur photography, etc. Other thesauri may be used if the primary thesaurus does not adequately describe the item. Some of the most commonly used thesauri include:

The Art and Architecture Thesaurus created by the Getty Institute. Use this thesaurus to describe images created as works of art or that document works of architecture.

The Library of Congress Subject Headings. Use this thesaurus for textual documents, such as books or manuscripts.

You do not have to create numerous “Subject” fields for each subject. Enter subject headings separated by a semi-colon. Pay special attention to extra spaces especially, as the database will read them as an entirely different subject heading.

Example: Views; Mountains; Portraits

Spatial and temporal information should also be added to the subject element.

Note: Enter the genre of the object in the subject field. A digital image that is a photograph could be given the subject genre term photograph but its genre type listed in the *Type* element will be “image.” An artist’s book might be given the subject genre term artist’s book while the genre type listed in *Type* element will be “text.”

Element Name:	Description
Label:	Description
Definition:	An account of the content of the resource.
Comment:	Examples of Description include, but is not limited to: an abstract, table of contents, reference to a graphical representation of content or a free-text account of the content.
Repeatable:	Yes
Mandatory:	Yes
Qualifier:	Table Of Contents Abstract

CCDL Recommendations: Enter here a general description of the image. Transcribe anything handwritten, stamped, or printed on the image, mat, or case. Include any descriptive information provided by the holding institution and/or any pertinent information not represented in other fields. Description field may include contextual information about the object. It may include the original publisher.

Examples: Small girl in a field of sunflowers.

Element Name:	Coverage
Label:	Coverage
Definition:	The extent or scope of the content of the resource.
Comment:	Typically, Coverage will include spatial location (a place name or geographic coordinates), temporal period (a period label, date, or date range) or jurisdiction (such as a named administrative entity). Recommended best practice is to select a value from a controlled vocabulary (for example, the Thesaurus of Geographic

Names [TGN]) and to use, where appropriate, named places or time periods in preference to numeric identifiers such as sets of coordinates or date ranges.

Repeatable: Yes

Mandatory: No. Spatial and temporal information should also be added to the subject element.

CCDL Recommendation: Best practice is to select a value from a controlled vocabulary (for example, the Thesaurus of Geographic Names [TGN]) or USGS Geographic Names Information System (GNIS) and that, where appropriate, named places or time periods be used in preference to numeric identifiers such as sets of coordinates or date ranges.

Element Name: Publisher

Label: Publisher

Definition: An entity responsible for making the digital resource available

Comment: Examples of Publisher include a person, an organization, or a service. Typically, the name of a Publisher should be used to indicate the entity.

Repeatable: Yes

Mandatory: Yes

CCDL Recommendations: Information in this field should contain one of the following name authorities for the Claremont colleges or library responsible for making the digital resource available:

- Claremont Graduate University
- Claremont Colleges
- Scripps College
- Ella Strong Denison Library
- Pomona College (Claremont, Calif.)
- Harvey Mudd College
- Norman F. Sprague Memorial Library
- Claremont McKenna College
- Pitzer College
- Claremont University Consortium
- Honnold/Mudd Library
- Honnold/Mudd Library. Special Collections Dept.
- Seeley G. Mudd Library

Element Name: Date

Label: Date

Definition: A date of an event in the lifecycle of the resource.

Comment: Typically, Date will be associated with the creation or availability of the resource. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF] and includes (among others) dates of the form YYYY-MM-DD.

Repeatable: Yes

Mandatory: Yes

CCDL Recommendations: Use the date of the original resource in one of the following formats. If the date of the original resource is unknown leave the *Date* field blank and write Date Unknown in the *Notes* field.

Date Type	Enter into Date Field:
Known YYYY-MM-DD date	2001-10-19
Known YYYY-MM date	2001-10
Known year	2001
Probable year	probably 1867
One year or another	1892 or 1893
Circa	circa 1843-01
Approximate date	approximately 1925
Decade certain	1970s
Before a time period	before 1867-01-05
After a time period	after 1867-01-05
Date Unknown	undated

Element Name: Language

Label: Language

Definition: A language of the intellectual content of the resource.

Comment: Recommended best practice is to use RFC 3066 [RFC3066] which, in conjunction with ISO639 [ISO639]), defines two- and three-letter primary language tags with optional subtags. Examples include "en" or "eng" for English, "akk" for Akkadian", and "en-GB" for English used in the United Kingdom.

Repeatable: Yes

Mandatory: No

CCDL Recommendation: Use the ISO Standard 3-letter code as follows:

- eng for English
- fre for French
- spa for Spanish
- ger for German
- ita for Italian
- chi for Chinese
- rus for Russian
- jpn for Japanese

If additional languages are needed see ISO Standard 3-letter code

<http://www.loc.gov/standards/iso639-2/langhome.html>

Element Name:	Type
Label:	Digital Type
Definition:	The nature or genre of the content of the resource.
Comment:	Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the DCMI Type Vocabulary [DCT1]). To describe the physical or digital manifestation of the resource, use the FORMAT element.
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendations: Enter a Dublin Core Suggested Type:

- Collection
- Dataset
- Event
- Image
- Interactive Resource
- Service
- Software
- Sound
- Text

Element Name:	Format
Label:	Format
Definition:	The physical or digital manifestation of the resource.
Comment:	Typically, Format may include the media-type or dimensions of the resource. Format may be used to identify the software, hardware, or other equipment needed to display or operate the resource. Examples of dimensions include size and duration. Recommended best practice is to select a value from a controlled vocabulary (for example, the list of Internet Media Types [MIME] defining computer media formats).
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendations: Use non proprietary media types when possible (TIFF, JPEG, JPEG2000, PDF, DOC, etc.).

Element Name:	Identifier
Label:	Resource Identifier
Definition:	An unambiguous reference to the resource within a given context.
Comment:	Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Formal identification systems include but are not limited to the Uniform Resource Identifier (URI)

(including the Uniform Resource Locator (URL)), the Digital Object Identifier (DOI) and the International Standard Book Number (ISBN).

Repeatable: Yes

Mandatory: Yes

CCDL Recommendations: MANDATORY Field. Construct a unique item level URL using the item URL template. Replace only those letters in bold with your collection three letter code and object file name respectively: (We will construct the URL template once we have purchased a DAM system.)

Element Name: Source

Label: Source

Definition: A Reference to a resource from which the present resource is derived.

Comment: The present resource may be derived from the Source resource in whole or in part. Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.

Repeatable: Yes

Mandatory: No

CCDL Recommendations: Use the source element to cite or describe any other resource from which the digital resource was derived, which may include free text combined with a formal identification system (such as an ISBN to describe a book). Can also include the dimensions of the original object. Examples include the following:

Source	Comments
Original letter: Letter from B.B King to Moe Joe Black, June 23, 173, Moe Joe Black Papers, Dearing State University, Special Collections, Accession No. 2843, box 9, folder 3	Digitized original handwritten letter described in <i>Source</i> element
Original version: 35 mm slide of a Newcomb Pottery dark b slide no. 215 in the Newcomb Pottery Slide Collection, The Historic New Orleans Collection	Digitized image from an original slide described in <i>Source</i> element
Excerpted from: 30 minutes audio cassette recording of interview with Ernest Hemingway in Ketcham, Idaho on Sunday, July 25, 1961.	Encoded audio clip taken From a audio cassette Recording described in <i>Source</i> element.
Original artifact: A defence of the right of the public to the Batture of New Orleans (City of Washington: Printed for the author 1809).	Textual description
Original artwork: Ink on paper, 9 ½ x 14 inches, Accession	

Element Name:	Relation
Label:	Relation
Definition:	A reference to a related resource.
Comment:	Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendation: Include sufficient information in the Relation element to enable users to identify, cite, and either locate or link to the related resource. Such as:

- 1) Record the URL to the collection home page by constructing a unique collection level URL using the following collection URL template. Replace only those letters in bold with your collections three letter collection code: (We will construct the URL template once we have purchased a DAM system.).
- 2) When applicable, use one of the recommended Dublin Core qualifiers as follows:
 - a. Is Version Of
 - b. Has Version
 - c. Is Replaced By
 - d. Replaces
 - e. Is Required By
 - f. Requires
 - g. Is Part Of
 - h. Has Part
 - i. Is Referenced By
 - j. References
 - k. Is Format Of
 - l. Has Format
 - m. Conforms To

Element Name:	Rights
Label:	Rights Management
Definition:	Information about rights held in and over the resource.
Comment:	Typically, Rights will contain a rights management statement for the resource, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights (IPR), Copyright, and various Property Rights. If the Rights element is absent, no assumptions may be made about any rights held in or over the resource.
Repeatable:	Yes
Mandatory:	Yes

CCDL Recommendations: Each collection can have its own rights management statement. If one is not created, then the following generic statement can be used:

- Physical rights are retained by the institution. Copyright is retained in accordance with U. S. Copyright laws.

Dublin Core Elements Qualifiers

DCMES Element	Qualifier Element Refinement(s)	Qualifier Element Encoding Scheme(s)
<u>Title</u>	<u>Alternative</u>	-
<u>Creator</u>	-	-
		<u>LCSH</u>
		<u>MeSH</u>
<u>Subject</u>	-	<u>DDC</u>
		<u>LCC</u>
		<u>UDC</u>
<u>Description</u>	<u>Table Of Contents</u>	-
	<u>Abstract</u>	-
<u>Publisher</u>	-	-
<u>Contributor</u>	-	-
	<u>Created</u>	
	<u>Valid</u>	
	<u>Available</u>	
<u>Date</u>	<u>Issued</u>	<u>DCMI Period</u>
	<u>Modified</u>	<u>W3C-DTF</u>
	<u>Date Accepted Date</u>	
	<u>Copyrighted</u>	
	<u>Date Submitted</u>	
<u>Type</u>	-	<u>DCMI Type Vocabulary</u>
	-	<u>IMT</u>
<u>Format</u>	<u>Extent</u>	-
	<u>Medium</u>	-
<u>Identifier</u>	-	<u>URI</u>
	<u>Bibliographic Citation</u>	-
<u>Source</u>	-	<u>URI</u>
<u>Language</u>	-	<u>ISO 639-2RFC 3066</u>
	<u>Is Version Of</u>	
	<u>Has Version</u>	
	<u>Is Replaced By</u>	
	<u>Replaces</u>	
	<u>Is Required By</u>	
<u>Relation</u>	<u>Requires</u>	<u>URI</u>
	<u>Is Part Of</u>	
	<u>Has Part</u>	
	<u>Is Referenced By</u>	
	<u>References</u>	
	<u>Is Format Of</u>	
	<u>Has Format</u>	

	<u>Conforms To</u>	
<u>Coverage</u>	<u>Spatial</u>	<u>DCMI Point</u> <u>ISO 3166</u> <u>DCMI Box</u> <u>TGN</u>
	<u>Temporal</u>	<u>DCMI Period</u> <u>W3C-DTF</u>
<u>Rights</u>	<u>Access Rights</u>	-
	<u>License</u>	<u>URI</u>
<u>Audience</u>	<u>Mediator</u>	-
	<u>Education Level</u>	-
<u>Provenance</u>	-	-
<u>Rights Holder</u>	-	-
<u>Instructional</u>	-	-
<u>Method</u>	-	-
<u>Accrual Method</u>	-	-
<u>Accrual Periodicity</u>	-	-
<u>Accrual Policy</u>	-	-

Recommended Non Dublin Core Elements

Notes

This is a general entry field for information the cataloger feels should be included in the record, but does not fit in any other field. Examples include but are not limited to:

- Creator unknown.
- Date unknown.
- Citations of sources used for researching the object.

Staff Only

The *Staff Only* field is for notes that are relevant to digital reference services and does not display to the patron.

Cataloged By

Cataloger's initials are entered in lowercase while in the draft stage, then changed to uppercase as a record is completed.

Catalog Date

Used to enter the date the digital item was cataloged. Enter the date the record is cataloged in YYYY-MM-DD format. Example: Catalog Date: 2001-10-12

Object File Name

Used to enter the eight-character file name for single page images or the thirteen character file name for multiple page images.

Example of Single Page Items: om000001

Example of Multiple Page Items: om000001_0001

Structural Metadata

Element Name: **Viewer Information**

Label: Viewer Information

Definition: Special viewers needed to see and/or hear this material and a link for downloading the special viewer.

Comments: The majority of the CCDL collections can be seen and read without special viewers. However, in some collections you may provide sound recordings, films, additional high-resolution images, and text with enhanced navigation. Just as you need special equipment to play videotapes, cassettes, CDs, and DVDs at home, patrons will need special viewers to see and hear these materials.

Element Name: **Object Structure**
Label: Object Structure
Definition: Information that describes the arrangement of a multiple page object (post cards, documents and monographs).
Comments: **Information would include things like chapters, pages, etc.**

Digital Records for Preservation

Creating digital resources is both labor intensive and costly, so we are challenged to ensure long-term access to digital resources. Effective preservation of digital resources requires (a) attention early in the life cycle, at the moment of creation, and (b) ongoing management (with attendant costs) to ensure continued usability. The preservation process is made more efficient when attention is paid to issues of consistency, format, standardization and metadata description. To aid in preservation and management, each digital resource must have accompanying structural and administrative metadata.

Administrative Metadata

Administrative metadata is technical information regarding how the files were created, the format in which they are stored, their size in kilobytes (KB) and use characteristics. Until an administrative metadata schema has been determined a standard, the CCDL will capture the following information:

Element Name: **Image Resolution**
Label: Image Resolution
Definition: Dots-per-inch. Example: 300dpi, 600dpi

Element Name: **Image Bit-Depth**
Label: Image Bit-Depth
Definition: Number of different colors or shades of gray that can be stored in each pixel of an image. Examples: 8-bit, 24-bit

Element Name: **Color Mode**
Label: Color Mode
Definition: Color (no shades of gray) or Grayscale (no color tones) or Black/White

Element Name: **Extent**
Label: Extent
Definition: Indicates the range over which a digital object reaches as expressed in space or time. Digital object extent types include pixel dimensions for scanned image (WWW:HHH) and duration for playing time of an audio recording or motion picture (HHH:MM:SS:SSS). Example: 1:1, 3600 x 6000.

Element Name: **Image Manipulation**

Label: Image Manipulation

Definition: Image enhancements such as applying sharpen mask, and adjusting histograms.

Element Name: **File Size**

Label: File Size

Definition: The number of Kilobytes (KB) comprising the digital image.

Element Name: **Hardware/Software**

Label: Hardware/Software

Definition: Brand name of hardware/software used in creating the digital image.

Example: Hardware: Epson Expression 1640XL Scanner; Software: Adobe Photoshop 7.0

Element Name: **Digitized By**

Label: Digitized By

Definition: Initials of who digitized the item.

Element Name: **Digitized Date**

Label: Digitized Date

Definition: The date item was digitized.

Crosswalks

Core/VRA Metadata Crosswalk

Dublin Core	VRA
Title	Title
Creator	Creator
Subject	Subject Style/Period
Description	Description
Publisher	
Contributor	Creator Location
Date	Date
Type	Type Record Type
Format	Measurements Material Format
Identifier	ID Number
Source	Source
Language	
Relation	Relation
Coverage	Date Location Style/Period Culture
Rights	Rights

MARC to Dublin Core Crosswalk (Qualified)

DC Element	DC Qualifier(s)	MARC Fields	Implementation notes
Title		245	
Title	Alternative	130, 210, 240, 242, 246, 730, 740	
Creator		100, 110, 111, 700, 710, 711	See Appendix 1 below.
		720	
Subject	LCSH	600, 610, 611, 630, 650	Second indicator=0
Subject	MeSH	600, 610, 611, 630, 650	Second indicator=2
Subject	LCC	050	
Subject	DDC	082	
Subject	UDC	080	
Description		500-599, except 505, 506, 520, 530, 540, 546	
Description	TableofContents	505	
Description	Abstract	520	First indicator=3
Contributor			See Appendix 1 below; Contributor element not used.
Publisher		260\$a\$b	
Date	Created	260\$c\$g	
		533\$d	
Date	Issued	260\$c	
		008/07-10	
Type	DCMI Type Vocabulary	Leader06, Leader07	See Appendix 2 for Leader-Type rules
		655	Subfield \$2=dct
Format	IMT	856\$q	

	Extent	300\$a	
		533\$e	
	Medium	340\$a	
Identifier	URI	856\$u	
Source	URI	786\$o	
Language	ISO 639-2	008/35-37	Multiple codes need to be parsed by threes.
		041	
	RFC1766	546	
Relation	IsVersionOf	775,786\$n\$t	
Relation	IsVersionOf URI	775,786\$o	
Relation	HasVersion	775\$n\$t	
Relation	HasVersion URI	775\$o	
Relation	IsReplacedBy	785\$n\$t	
Relation	IsReplacedBy URI	785\$o	
Relation	Replaces	780\$n\$t	
Relation	Replaces URI	780\$o	
Relation	Requires	538	
Relation	IsPartOf	760,773\$n\$t	
		440, 490,800,810,811,830	
Relation	IsPartOf URI	760,773\$o	
Relation	HasPart	774\$n\$t	
Relation	HasPart URI	774\$o	
Relation	IsReferencedBy	510	
Relation	IsFormatOf	776\$n\$t	
Relation	IsFormatOf	530	

Relation	IsFormatOf URI	776\$o	
		530\$u	
Relation	HasFormat	776\$n\$t	
		530	
Relation	HasFormat URI	776\$o	
		530\$u	
Coverage	Spatial	522, 651	
		255	Some 255 information equivalent to DC encoding scheme but different syntax
		650\$z	
		752	
Coverage	Spatial ISO 3166	043\$c,044\$c	Defined in MARC in January 2001.
	Spatial TGN	651	Subfield \$2=tgn
Coverage	Temporal	513\$b	
		033\$a	
Rights		506, 540	No qualifiers defined.

Useful Websites for Metadata

Dublin Core Element Set. <http://dublincore.org/documents/dces/>

Dublin Core/MARC/GILS Crosswalk. <http://lcweb.loc.gov/marc/dccross.html>

ISO Standard 3-letter code <http://www.loc.gov/standards/iso639-2/langhome.html>

Library of Congress Home Page. <http://lcweb.loc.gov/>

MARC Home Page. <http://www.loc.gov/marc/marc.html>

Thesaurus for Controlled Vocabulary

Thesaurus for Graphic Material <http://www.loc.gov/rr/print/tgm1>

The Getty Art & Architecture Thesaurus (AAT)
http://www.getty.edu/research/conducting_research/vocabularies/aat/

The Getty Union List of Artist Names (ULAN)
http://www.getty.edu/research/conducting_research/vocabularies/ulan/

The Getty Thesaurus of Geographic Names
http://www.getty.edu/research/conducting_research/vocabularies/tgn/

Thesaurus of Geographic Names. <http://www.getty.edu/research/tools/vocabulary/tgn/>

USGS Geographic Names Information System. <http://geonames.usgs.gov/gnishome.html>

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