



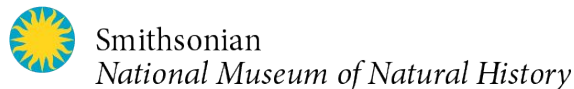
The Complexities of Fossil Data Advances: An Approach by the Smithsonian NMNH Department of Paleobiology

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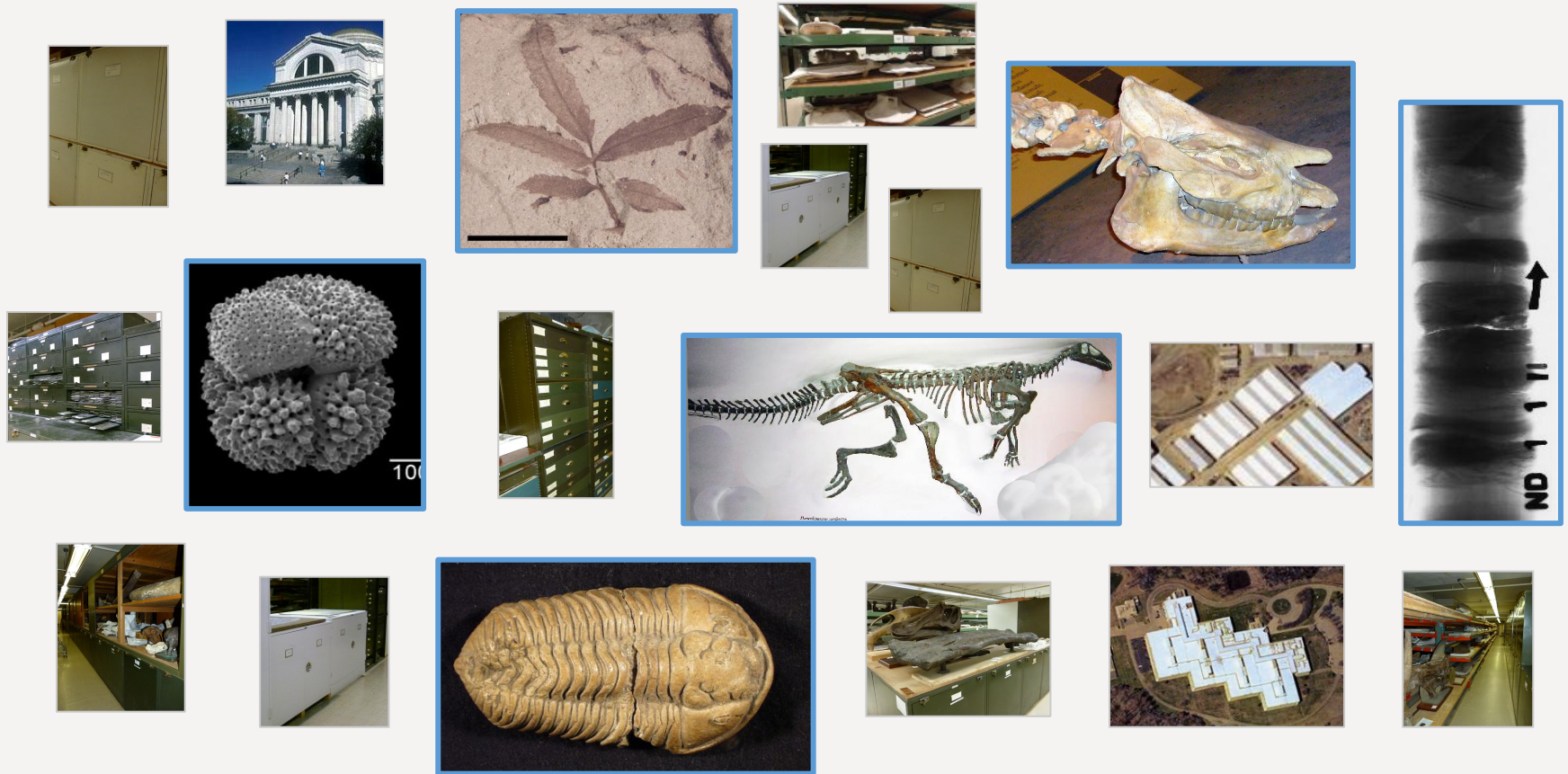




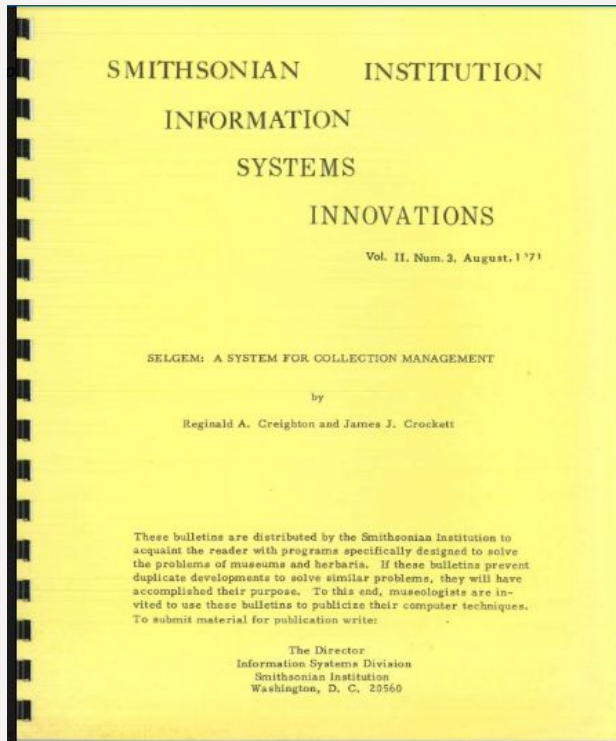
Biodiversity
Information
Standards
T D W G



Smithsonian NMNH Paleobiology



Paleo Data Practices: Legacy



MORPHOLOGY

Category 403

characters available = 64

DEFINITION:

A coding system for vertebrate specimens that allows all skeletal elements represented by a single catalog number to be easily listed.

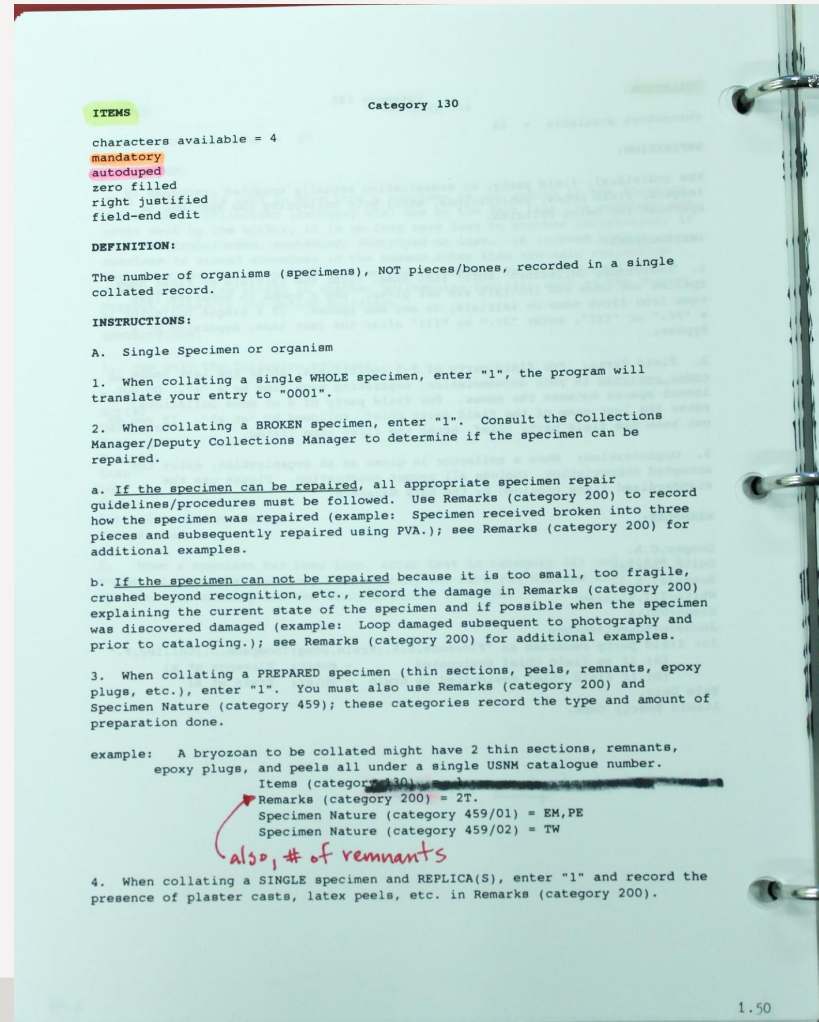
INSTRUCTIONS:

Enter codes selected from the table which follows.

EXAMPLES:

SK-Y, MR-L, T-M1-M3

SK-Y, T-L-U-M3



Groundwork



Construction of the U. S. National Museum, 1905, Record Unit 95, Box 33, Folder: 4, Smithsonian Institution Archives, Neg. no. MAH-17531

Guiding Questions

- ❖ What is the purpose of the database?
- ❖ What data is important to record in the database?
What data can be left with the specimen?
- ❖ How much should be considered an authority?
- ❖ What standards have been established already and what new standards are needed?



3427852
 V 11605 Cervus lucasi Hay; holotype; Cervidae : Artiodactyla : Mammalia : Chordata : Items=1 unv. : Mammalia Primary Type: . . Quaternary. : N. Drake, 1897: : United States: Idaho: Ada County: : : : W Side Of Sandy Hollow Near N Boundary Of Nampa Quad



Collection Custody

Museum: NMNH USNM

Department: Paleobiology

Division: Paleogeneral

Catalog: Types: Mammals Terrestrial

Collection name: 1 Mammalia Primary Type

* [Empty field]

Cataloging Details

Prefix: V Catalog number: 11605 Suffix: [Empty]

Barcode: [Empty] Part Number: [Empty]

Whole/Part: [Empty]

Cataloged by: [Empty]

Date cataloged: 14 Jul 1983

Kind of object: Specimen/Lot

PAL-V-11605-

Counts

Specimen count: 1 Modifier: unverified Original count: 1 Modifier: [Empty]

Other Counts

Kind	Value
* [Empty]	[Empty]

Other Numbers

Other Numbers Kind: (Anthro ...	Source	Value
1 SELGEM Number		00058302
2 Cited Catalog Number		11605
3 Inventory Accession Number		367367
* [Empty]		[Empty]



Cervus lucasi Hay : Cervidae : Artiodactyla : Mammalia : Chordata

3061246

Classification

Parent:

Family & No: Cervidae

Genus & No: Cervus

Subgenus:

Species: lucasi

Subspecies:

Other:	Other Rank	Other Value
*		

Seq. Num.:

Hybrid & Parentage

Hybrid?: No

Sex: Parent:

Cultivar Name

Cultivar?: No Name:

Controls

Applicable Code: ICZN Rank: Species

Scientific Name

Automatic?: Yes Name: Cervus lucasi Hay

Currently Accepted Name

Currently Accepted?: Unknown Current Name:

File Edit Select View Tools Tabs Multimedia Window Help



N. Drake : 1897 : United States : Idaho : Ada County : : : 44 0 0 N : 116 0 0 W : W Side Of Sandy Hollow Near N Boundary Of Nampa Quad

3006618

Site Details

Record Classification:

Field/Sample Numbers: *

Site/Station Number: Site Number Source:

Site Name: *

Ocean

Ocean: Sea/Gulf: Bay/Sound:

Continental (Political)

Continent:

Country: United States

Province/State/Territory: Idaho

Precise Locality: W Side Of Sandy Hollow Near N Boundary Of Nampa Quad

District/County/Shire: Ada County

City/Town: No Further Locality Data:

Collection

Locality (1)

Locality (2)

Lat/Long

Mapping (1)

Mapping (2)

Exp/Method

Aquatic

Terrestrial

Depth/Elev.

Notes

References

Multimedia

Display Record 1 of 1

littleh Paleo SA nmnhlive

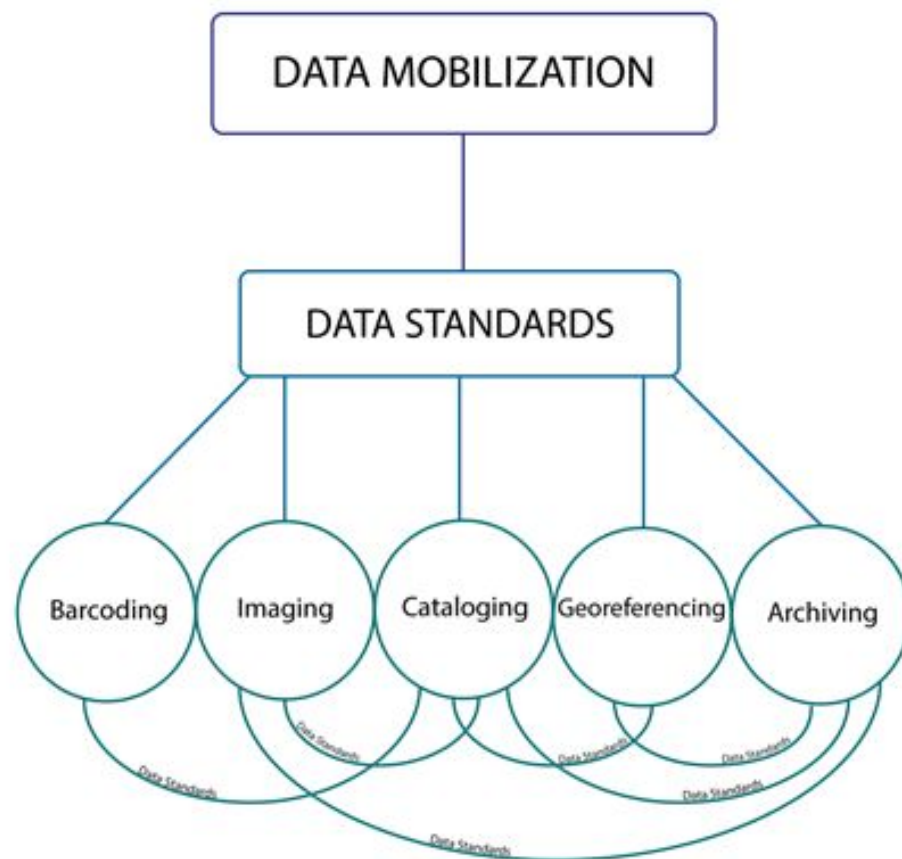
EMu Evaluation

- ❖ Pull usage statistics for all EMu fields
- ❖ Field by field analysis
- ❖ Survey of cataloging needs
- ❖ Visits, discussions, and emails with other institutions using EMu
- ❖ Survey EMu structure and data activities across NMNH divisions
- ❖ Develop a proposal with wireframes and stats for requested changes

Standards

Standards support and pull together all collections efforts across the museum. Good standards promote:

- ❖ Discoverability
- ❖ Interoperability
- ❖ Efficiency
- ❖ Integrity
- ❖ Quality
- ❖ Comprehensiveness
- ❖ Preservation



Standards

- ❖ Specific fields and information in collections database
 - ❖ Common collections activities
 - Barcoding, Georeferencing, Rights and transactions
 - ❖ Elements of digitization workflows
 - Core fields for skeleton records, image composition and quality
 - ❖ Data definitions - what is collections data? What is research data?
-
- ❖ What data do we share?
 - Are the fields that are included in DwC clean?
 - Are there fields that we don't share, but could if they were standardized better?
 - Are there fields that do not map to DwC?
 - Are there other data formats that we could/should be sharing in?
 - What else could be preventing us from working with various aggregators?
 - ❖ How is the data we share used?
 - Participation in collaborative projects, e.g. NSF ADBC TCN
 - External researchers
 - Citizen Science
 - Transcription

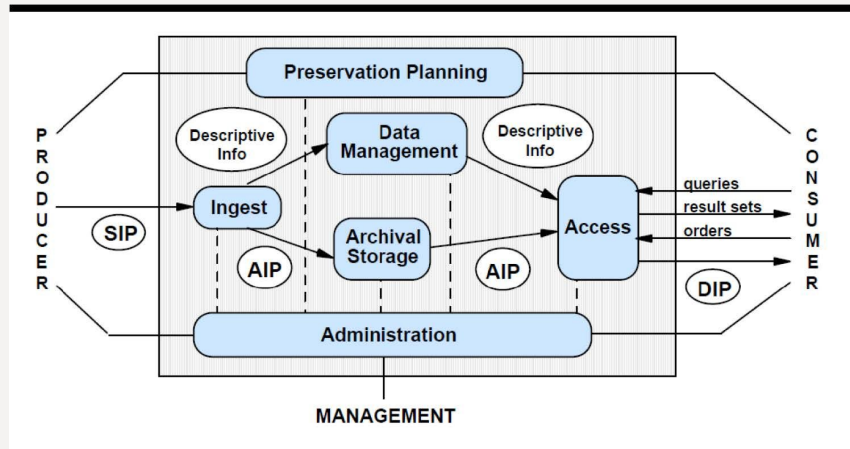
Standardization in Practice

- ❖ Workflows
 - ❖ Storage Locations
 - ❖ Stratigraphy
 - ❖ Casts
 - ❖ Status
 - ❖ Lots
- ❖ Vertebrate Specific
 - Morphology
 - Item Counts
 - Phylogenetic Classifications

**** The paleo community needs to work together to establish definitions for using DwC fields or to identify fields that should potentially be added**

Next Steps

- ❖ Continue database and standards evaluation and development
- ❖ Cleanup and enhancement of legacy data
- ❖ Apply concepts of Digital Curation



Open Archival Information System Reference Model

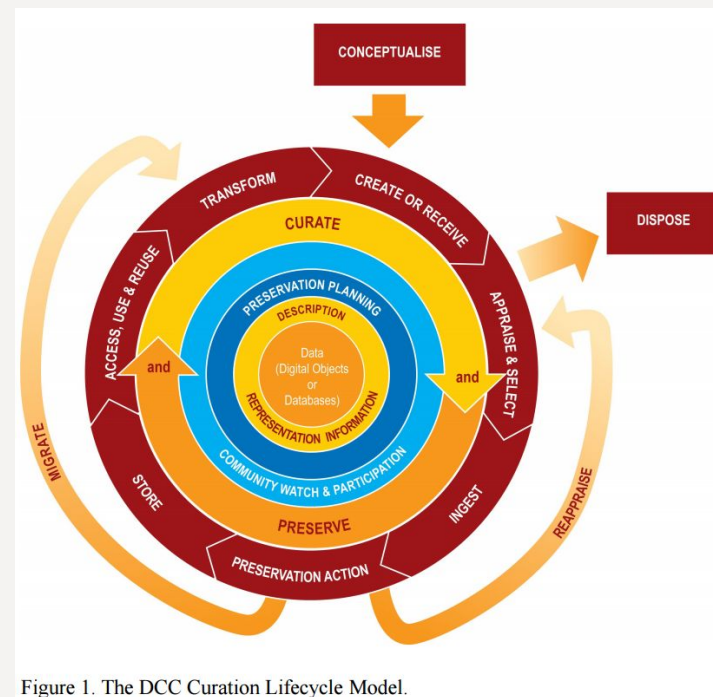


Figure 1. The DCC Curation Lifecycle Model.

Paleo Data Practices: Future



Vertebrate Counting and Morphology Standards

Vertebrate Counting Standards

Specimen Count = the total number of items that are part of a single catalog number. This is a required field for all catalog records.

Valid entries: Any integer: 1, 5, 100.

Invalid entries: Any character that is not an integer.

Specimen Count Modifier = a term that describes what the number in Specimen Count refers to. This is a required field for all vertebrate catalog records.

Valid entries and when they should be used:

count for a discrete number of items that can be physically counted.

total for bulk samples that cannot be reasonably counted.

estimate for an approximate number of items.

Invalid Entries: Leaving the field blank or using a modifier other than those listed above.



Counts	Specimen count: 12	Modifier: Item(s)
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Option 1	Counts	Specimen count: 150	Modifier: estimate
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Option 2	Counts	Specimen count: 1	Modifier: lot(s)
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Digital Asset Management

11:30 Rebecca Snyder

Use of DAMS within a museum context

Questions?

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Smithsonian
National Museum of Natural History