

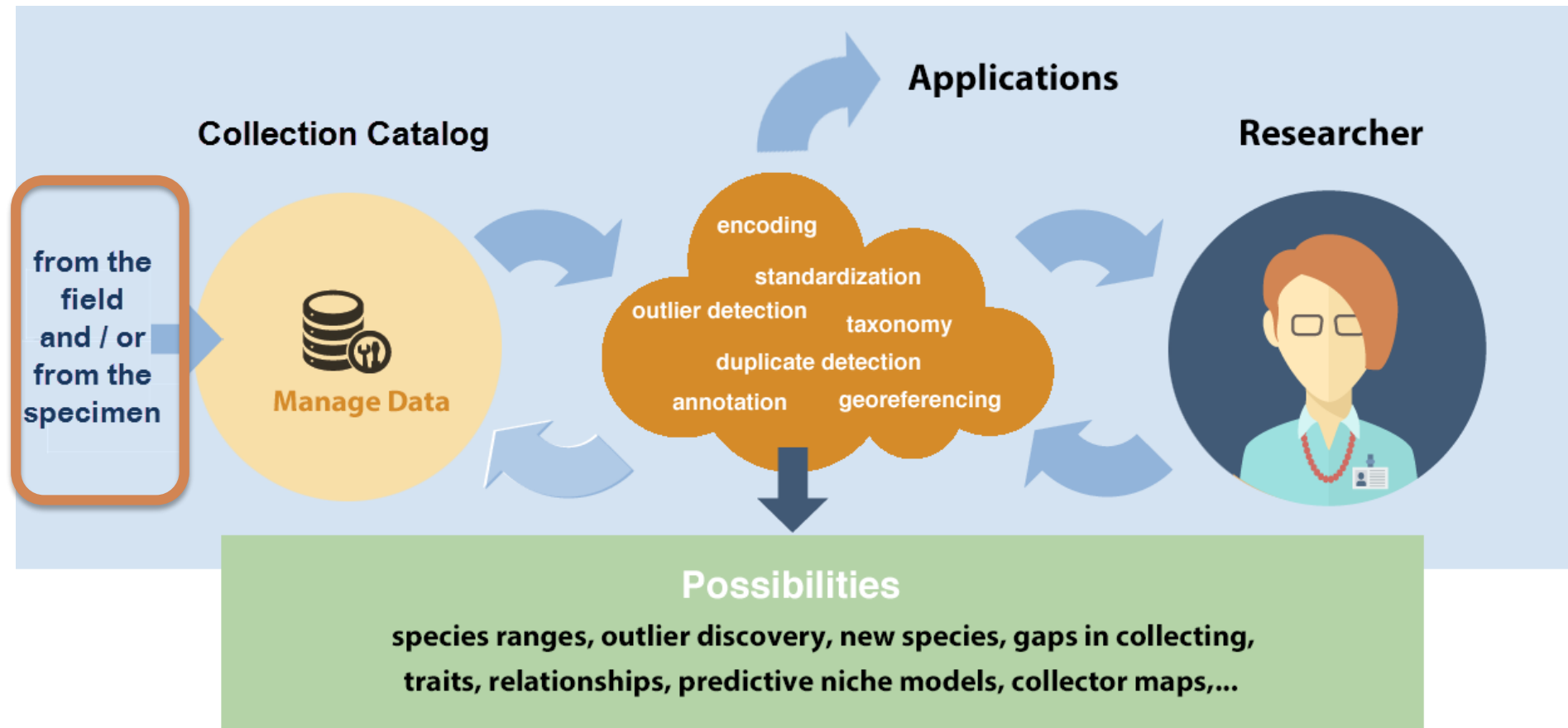


Biodiversity data standards: Darwin Core as an example

Greg Riccardi, Deborah L. Paul
UK-SWANS Digitisation
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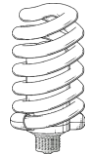
Feeding the Research Data Pipeline



Data > Knowledge > Application

Standards?

- All kinds of standards
- Data sharing standards



HTML



Why use standards?



My database?

Your database?

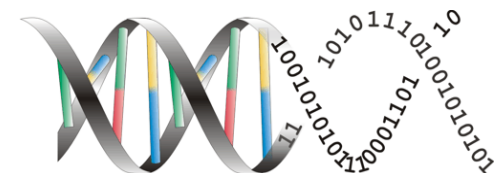
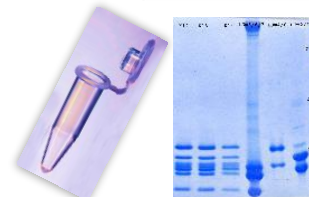
map to a standard!

What are some examples of standards used for sharing biodiversity data? Where do they come from?

| Data | Standards |
|---------------------------------|---|
| specimens & observations | Darwin Core (DwC) |
| specimen & observation datasets | Ecological Metadata Language (EML) |
| media | Audubon Media Core |
| derivatives | Material Sample Core and GGBN Extensions, ... |



CC creative commons What's in the dataset?



Darwin Core Categories and Fields

DwC Categories

- **Record Level (19)**
- Occurrence (19)
- Organism (7)
- Material Sample (1)
- Event (15)
- Location (44)
- Geological Context (18)
- Identification (8)
- Taxon (33)

Record Level fields

dcterms:type | **dcterms:modified** |
dcterms:language | **dcterms:license** |
dcterms:rightsHolder |
dcterms:accessRights |
dcterms:bibliographicCitation |
dcterms:references | **institutionID** |
collectionID | **datasetID** |
institutionCode | **collectionCode** |
datasetName | **ownerInstitutionCode** |
basisOfRecord |
informationWithheld |
dataGeneralizations |
dynamicProperties

<http://rs.tdwg.org/dwc/terms/index.htm>

Darwin Core Categories and Fields

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<http://rs.tdwg.org/dwc/terms/index.htm>

Occurrence fields

occurrenceID | catalogNumber |
recordNumber | recordedBy |
individualCount | organismQuantity |
organismQuantityType | sex | lifeStage
| reproductiveCondition | behavior |
establishmentMeans |
occurrenceStatus | preparations |
disposition | associatedMedia |
associatedReferences |
associatedSequences |
associatedTaxa |
otherCatalogNumbers |
occurrenceRemarks

Darwin Core Categories and Fields

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Location fields

locationID | higherGeography | continent |
waterBody | islandGroup | island |
country | countryCode | stateProvince |
county | municipality | locality |
verbatimLocality | verbatimDepth |
locationRemarks | decimalLatitude |
decimalLongitude | geodeticDatum |
verbatimCoordinates |
verbatimLatitude | verbatimLongitude
| georeferencedBy | georeferencedDate
| georeferenceProtocol |
georeferenceSources |
georeferenceRemarks ...

<http://rs.tdwg.org/dwc/terms/index.htm>

Questions

- Do I have to change all names of my database fields to match Darwin Core?
- What is mapping? and how often do I have to do this?
- Where do I get help if I don't understand?

Your turn,
let's map some of your data to Darwin Core terms

- <http://bit.ly/ukswansdigitise>

Royal Albert Memorial Museum – Biology screen

Find Find All Sort Print Menu List Accon History Geol Loan Docu Cap Web

NATURAL HISTORY DESCRIPTION [Inventory Record Display T...](#)

Accession Loan No. Simple Name Collection Class
Full Name

Identification:

Form NH_Form Form description NH_Form.description

Sex NH Age NH_Age

Kingdom KINGDOM Type? NH_Type NH_Type.Text

Phylum Phylum Phase NH_Phase Conservation Statu Status

Class Class

Order Order

Family Family

Genus Genus Genus Authority Genus_Authority

Species Species Species Authority Species_Authority

Determined NH_Determined

Common Name Common_Name

Other Identification Other_Identification

Synonym Synonym

Source of Info Geology.Source.of.Information

Collection:

Continen Collection.Continent

Area/Region Collection.Area.Region

Country Collection.Country

County Collection.County

Vice County Vice.County

Town Collection.Town

Parish Collection.Parish

Place Name Collection.Place.Name

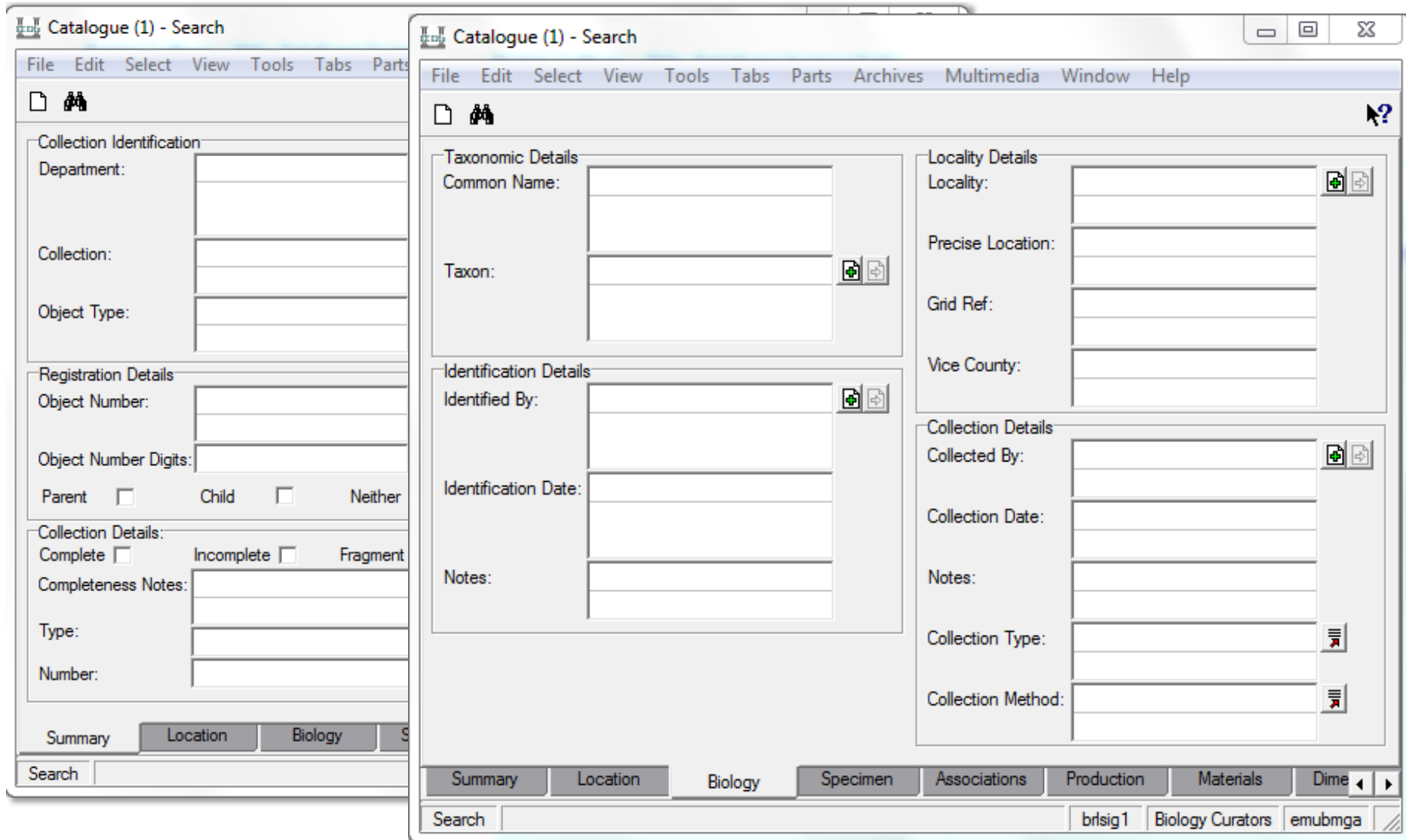
Detail Location.Detail

Biology screen –
specimen information

Royal Albert Memorial Museum – Detail record

| GEOLOGY | | |
|--|--|-----------------|
| 79/1992/4 | fossil: reptile | Fossils |
| RHYNCHOSAURIDAE: <i>Fodonyx spenceri</i> (Benton): rhynchosaur | | |
| Identification: | | |
| Form | Type? | |
| FOSSIL: | | MINERAL: |
| Kingdom | ANIMALIA | Class |
| Phylum | CHORDATA: VERTEBRATA | Silicates |
| Class | REPTILIA | Hey Index |
| Order | RHYNCHOSAURIA | ROCK: |
| Family | RHYNCHOSAURIDAE | Type |
| Genus | <i>Fodonyx</i> | Class |
| Species | <i>spenceri</i> | |
| Determined | | |
| Common Name | fossilised rhynchosaur skeleton | |
| Other Ident. | | |
| Synonymy | <i>Rhynchosaurus spenceri</i> | |
| Source of Info | | |
| Detail | slightly scattered but virtually complete skeleton of di only spine and ribs; no skull present | |
| Collection: | | |
| Continent | Europe | |
| Area/Region | Northern Europe | |
| Country | United Kingdom: England | |
| County | Devon | |
| Vice County | 3: South Devon | |
| Town | Budleigh Salterton, near | |
| Parish | | |
| Place Name | | |
| Detail | Ladram Bay | |
| NGR | | Accuracy |
| Other Coordinates | | Accuracy |
| Other Position | | Accuracy |
| Collector | Method | Date |
| Ex. Coll | Taxidermist/preparator | |
| Stratigraphy / Age: | | |
| Period | Triassic 251 – 199 mya | Detail |
| Epoch | Mid Triassic | Otter Sandstone |
| Stage | | |
| Years | | |

Bristol Culture – EMu Database Screenshots



Left Screenshot: Catalogue (1) - Search

File Edit Select View Tools Tabs Parts

Collection Identification

Department:

Collection:

Object Type:

Registration Details

Object Number:

Object Number Digits:

Parent Child Neither

Collection Details:

Complete Incomplete Fragment

Completeness Notes:

Type:

Number:

Summary Location Biology S

Search

Right Screenshot: Catalogue (1) - Search

File Edit Select View Tools Tabs Parts Archives Multimedia Window Help

Taxonomic Details

Common Name:

Taxon:

Identification Details

Identified By:

Identification Date:

Notes:

Locality Details

Locality:

Precise Location:

Grid Ref:

Vice County:

Collection Details

Collected By:

Collection Date:

Notes:

Collection Type:

Collection Method:

Summary Location Biology Specimen Associations Production Materials Dime

Search brsig1 Biology Curators emubmg