

# Estándares: Darwin Core

Publicación de datos de biodiversidad  
en GBIF y en revistas científicas

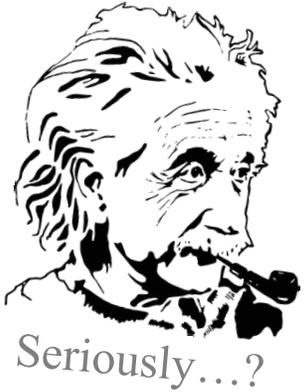
Paula Zermoglio, [pzermoglio@gmail.com](mailto:pzermoglio@gmail.com)  
Universidad de Buenos Aires - VertNet

**Gbif, Es**





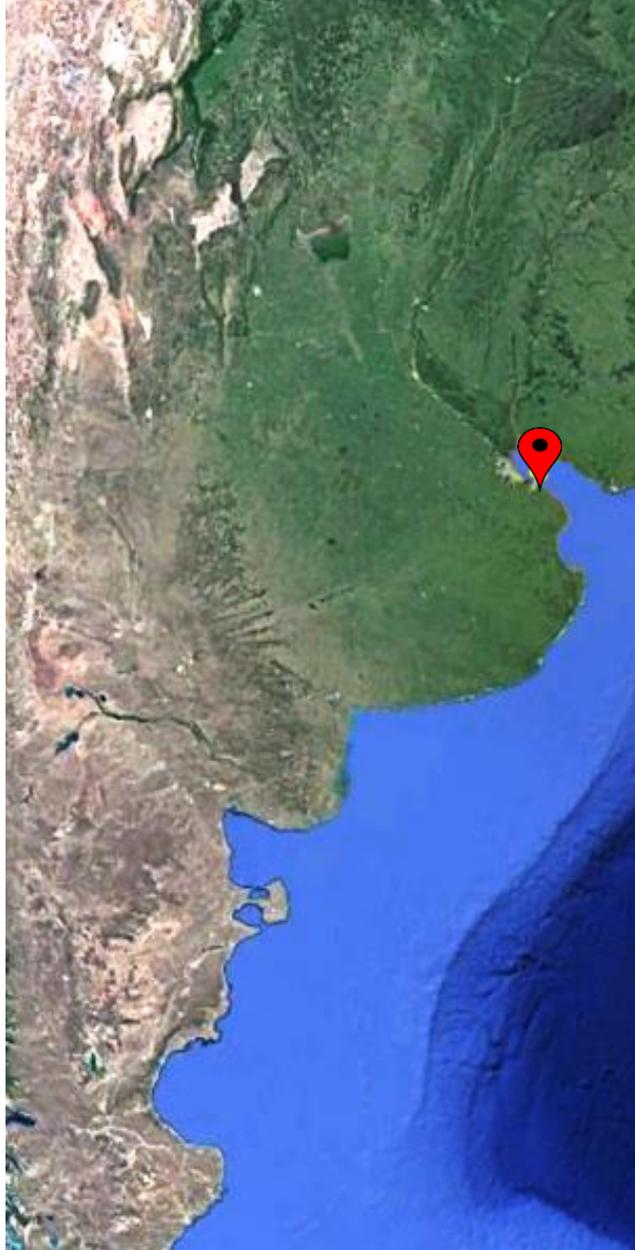
## Un ejemplo sencillo



Einstein dijo Newton se equivocó.  
Einstein, dijo Newton, se equivocó.  
Einstein dijo: Newton se equivocó.



**Los estándares proveen claridad y ayudan a la comunicación**



**34° 54' 32" S 57° 56' 7" W**

- medida - coordenadas geográficas
- formato - grados, minutos, segundos
- sistema numérico - sexagesimal
- números - Indo-Arábico
- lenguaje - Inglés
- alfabeto - Latín
- símbolos - tipográfico
- fuente - Times New Roman

# Generalidades



A todos estos niveles

se pueden aplicar “normas”.

*Conjunto de datos*

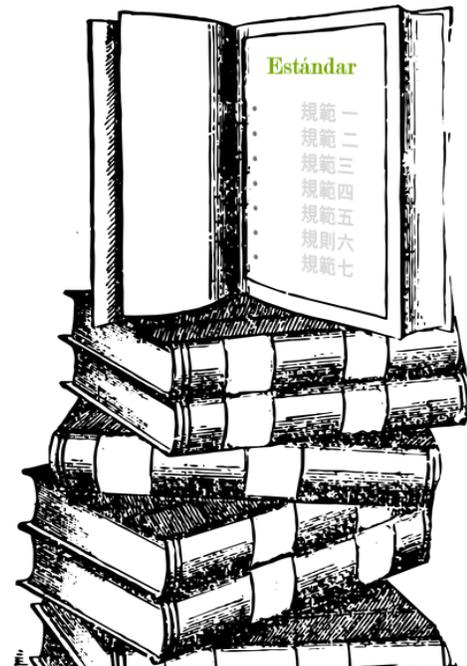
*Metadatos*

*Registro*

*Campo*

*Valor*

**Estándares**





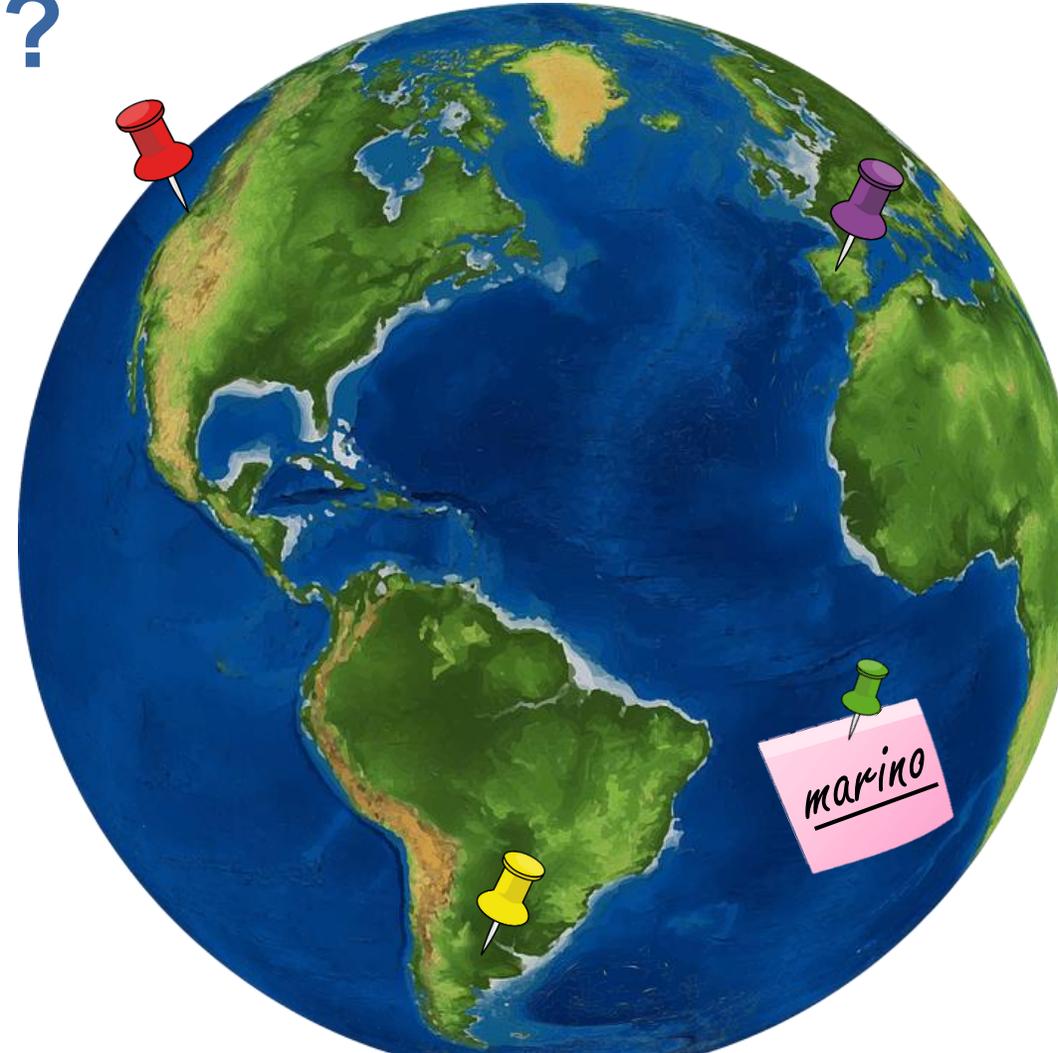
## ¿Qué estándares utilizamos para datos de biodiversidad?

### Estándares globales

ampliamente utilizados por la comunidad

### Estándares restringidos

locales, regionales, temáticos, etc.





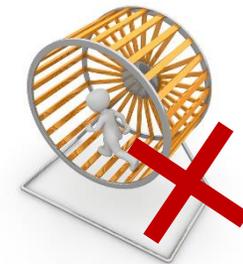
## ¿Qué estándares utilizamos para datos de biodiversidad?

**Estándares propios de la comunidad**



Biodiversity  
Information  
Standards  
TDWG

**Estándares de otras disciplinas**





## Basic Standards Recommendations

The TDWG community's priority is the development of standards for the exchange of biological/biodiversity data.

The most widely deployed formats for biodiversity occurrence data are [Darwin Core](#) and [ABCD](#).

The TDWG [GUID Applicability Statement](#) provides guidance on the assignment of Globally Unique Identifiers to biodiversity information resources.

TDWG's activities within the biodiversity informatics domain can be found in the [Activities](#) section of this website.

## TDWG 2018 in Dunedin, New Zealand, 25 Aug - 1 Sep

In 2018, TDWG will hold its annual conference jointly with the [Society for the Preservation of Natural History Collections \(SPNHC\)](#), from August 25 - September 1, in Dunedin, New Zealand. The conference hosts are the [Otago Museum](#) and the [University of Otago](#). The theme of this year's conference is "[Collections and Data in an Uncertain World](#)." Please see:



## Latest News

### Call for Tender: Website Development

04-Jun-2017

TDWG seek a contract with a motivated and experienced web developer to revise the TDWG.org website. TDWG needs a website to communicate and support its outputs and activities. One that 1) provides a clear overview of what TDWG...[\[more\]](#)

[\[more\]](#)

### TDWG Community Support Fund - Call for Proposals 2017

06-Feb-2017

TDWG Interest (IG) and Task (TG) Groups undertake the core business of our organization: developing the standards and guidelines that enable us to integrate vast amounts of

# Generalidades



Biodiversity  
Information  
Standards  
TDWG

<http://www.tdwg.org/standards/>

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[Standards](#)  
  [Status and Categories](#)  
[Activities](#)  
[Membership](#)  
[Past Meetings](#)  
[Acknowledgements](#)

[2018 Conference](#)

[Biodiversity Information  
Projects of the World](#)  
[Biodiversity Information  
Networks Database](#)

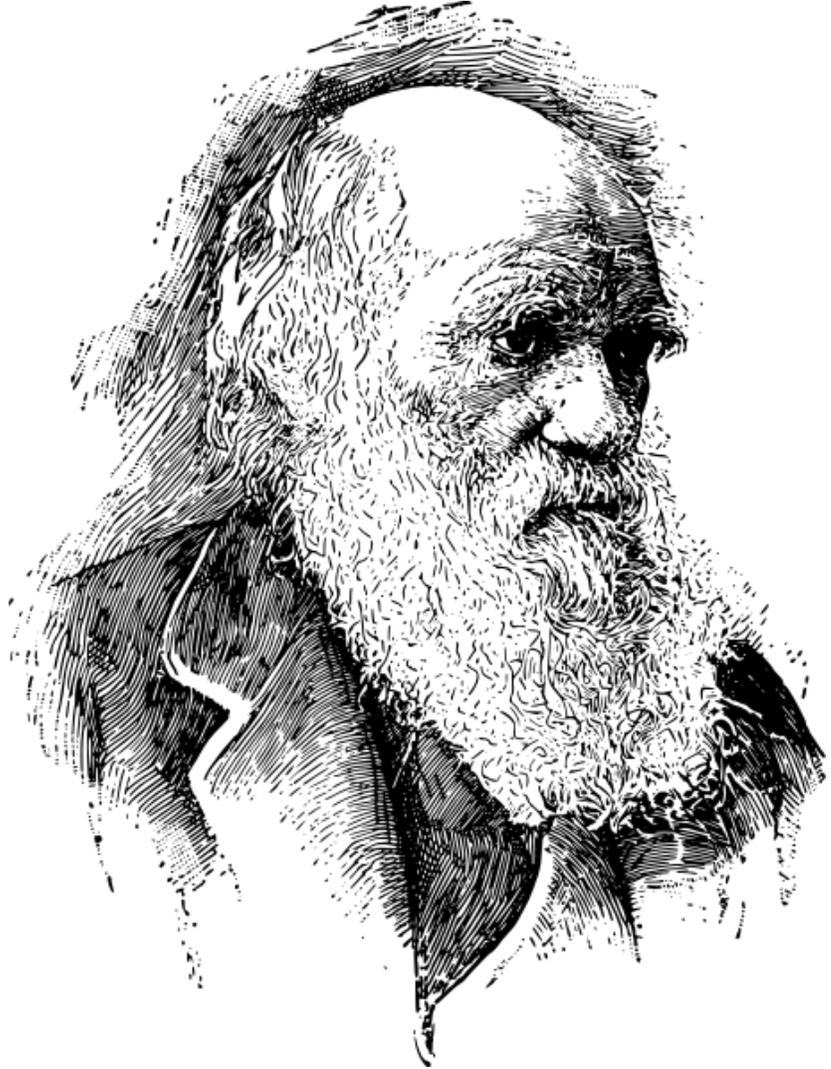
[Proceedings](#)  
[Mailing Lists](#)  
[Glossary](#)

You are here: [Home](#) > [Standards](#)

## TDWG Standards

TDWG's standards are listed below. For information about current work within TDWG, we would suggest that you look at the page linked in the Activity column or the [Activities](#) page. For further information, please [contact us](#).

Title	Activity (Task or Interest Group)	Category	Status	Date Published
<a href="#">TDWG Standards Documentation Standard</a>	<a href="#">Vocabulary Maintenance Specification Task Group</a>	Technical Specification	Current	25-Apr-2017
<a href="#">Vocabulary Maintenance Standard</a>	<a href="#">Vocabulary Maintenance Specification Task Group</a>	Best Current Practice	Current	25-Apr-2017
<a href="#">Audubon Core Multimedia Resources Metadata Schema</a>	<a href="#">Multimedia Resources Task Group</a>	Technical Specification	Current	28-Oct-2013
<a href="#">GUID and Life Sciences Identifiers Applicability Statements</a>	<a href="#">Technical Architecture Group</a>	Applicability Statements	Current	30-Jan-2011
<a href="#">Darwin Core</a>	<a href="#">DarwinCore Task Group (DwC)</a>	Technical Specification	Current	09-Oct-2009
<a href="#">TAPIR - TDWG Access Protocol for Information Retrieval</a>	<a href="#">TAPIR Task Group</a>	Technical Specification	Current	09-Sep-2009
<a href="#">Access to Biological Collection Data - version 2.06</a>	<a href="#">Access to Biological Collections Data</a>	Technical Specification	Current (2005)	16-Sep-2005
<a href="#">Structured Descriptive Data</a>	<a href="#">Biological Descriptions Interest</a>	Technical	Current	16-Sep-2005



# Darwin Core



## ¿Qué es Darwin Core?

**Lista de términos** (campos),  
y sus definiciones,  
relacionados con datos de  
biodiversidad

**Gobierno**

<http://www.tdwg.org>

**Estándar**

<http://rs.tdwg.org/dwc>



## Organización de los términos

### Clases de Términos

<http://rs.tdwg.org/dwc>

## Simple Darwin Core

- Record & Dataset
- Occurrence
- Organism
- Material Sample
- Event
- Location
- Geological Context
- Identification
- Taxon

## Clases Auxiliares

- ResourceRelationship
- MeasurementOrFact



## Record-level

- Occurrence
- Organism
- MaterialSample
- LivingSpecimen
- PreservedSpecimen
- FossilSpecimen
- Event
- HumanObservation
- MachineObservation
- Location
- GeologicalContext
- Identification
- Taxon
- MeasurementOrFact
- ResourceRelationship
- UseWithIRI

## Darwin Core quick reference guide

This page provides a list of all currently recommended terms of the Darwin Core standard. Categories such as [Occurrence](#), [Event](#) correspond to Darwin Core classes, which group other terms. Convenient [files of these terms](#) and [their full history](#) can be found in the [Darwin Core repository](#).

### Record-level

[type](#) [modified](#) [language](#) [license](#) [rightsHolder](#) [accessRights](#) [bibliographicCitation](#) [references](#) [institutionID](#) [collectionID](#) [datasetID](#) [institutionCode](#)  
[collectionCode](#) [datasetName](#) [ownerInstitutionCode](#) [basisOfRecord](#) [informationWithheld](#) [dataGeneralizations](#) [dynamicProperties](#)

type		Property
Identifier	<a href="http://purl.org/dc/terms/type">http://purl.org/dc/terms/type</a>	
Definition	The nature or genre of the resource.	
Comments	For Darwin Core, recommended best practice is to use the name of the class that defines the root of the record. Examples: <a href="#">StillImage</a> , <a href="#">MovingImage</a> , <a href="#">Sound</a> , <a href="#">PhysicalObject</a> , <a href="#">Event</a> , <a href="#">Text</a> . For discussion see <a href="http://terms.tdwg.org/wiki/dwc:type">http://terms.tdwg.org/wiki/dwc:type</a> .	

modified		Property
Identifier	<a href="http://purl.org/dc/terms/modified">http://purl.org/dc/terms/modified</a>	
Definition	The most recent date-time on which the resource was changed.	
Comments	For Darwin Core, recommended best practice is to use an encoding scheme, such as ISO 8601:2004(E). Examples: <a href="#">1963-03-08T14:07-0600</a> is 8 Mar 1963 2:07pm in the time zone six hours earlier than UTC, <a href="#">2009-02-20T08:40Z</a> is 20 Feb 2009 8:40am UTC, <a href="#">1809-02-12</a> is 12 Feb 1809, <a href="#">1906-06</a> is Jun 1906, <a href="#">1971</a> is just that year, <a href="#">2007-03-01T13:00:00Z/2008-05-11T15:30:00Z</a> is the interval between 1 Mar 2007 1pm UTC and 11 May 2008 3:30pm UTC, <a href="#">2007-11-13/15</a> is the interval between 13 Nov 2007 and 15 Nov 2007. For discussion see <a href="http://terms.tdwg.org/wiki/dwc:modified">http://terms.tdwg.org/wiki/dwc:modified</a> .	

language		Property
Identifier	<a href="http://purl.org/dc/terms/language">http://purl.org/dc/terms/language</a>	
Definition	A language of the resource.	
Comments	Recommended best practice is to use a controlled vocabulary such as RFC 5646. Examples: <a href="#">en</a> for English, <a href="#">es</a> for Spanish. For discussion see <a href="http://terms.tdwg.org/wiki/dwc:language">http://terms.tdwg.org/wiki/dwc:language</a> .	



- Record-level
- Occurrence
- Organism
- MaterialSample
- LivingSpecimen
- PreservedSpecimen
- FossilSpecimen
- Event
- HumanObservation
- MachineObservation
- Location**
- GeologicalContext
- Identification
- Taxon
- MeasurementOrFact
- ResourceRelationship
- UseWithIRI

country		Property
Identifier	<a href="http://rs.tdwg.org/dwc/terms/country">http://rs.tdwg.org/dwc/terms/country</a>	
Definition	The name of the country or major administrative unit in which the Location occurs.	
Comments	Recommended best practice is to use a controlled vocabulary such as the Getty Thesaurus of Geographic Names. Examples: <code>Denmark</code> , <code>Colombia</code> , <code>España</code> . For discussion see <a href="http://terms.tdwg.org/wiki/dwc:country">http://terms.tdwg.org/wiki/dwc:country</a> .	

**Ejemplo de término:**  
**[dwc:country](http://rs.tdwg.org/dwc/terms/index.htm#country)**

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



## dwc:country



**Country:** The name of the country or major administrative unit in which the Location occurs. Recommended best practice is to use a controlled vocabulary such as the Getty Thesaurus of Geographic Names.

**Notes:** For discussion see <http://code.google.com/p/darwincore/wiki/Location>

**Example(s):** "Denmark", "Colombia", "España"

### Translations

#### Español (Spanish)

**Pais:** El nombre del país o unidad administrativa de mayor jerarquía de la ubicación. La práctica recomendada es utilizar un identificador persistente de un lenguaje controlado como el Tesoro Getty de Nombres Geográficos.

*Ejemplo:* "Denmark", "Colombia", "España"

#### 中文 (简体) (Simplified Chinese)

**国家 (also sasdlasd):** 发现地点的国家或主要行政区划名称。建议最好使用控制性词汇，如盖提地理名称索引。

#### 日本語 (Japanese)

**Country:** その位置が存在する国名、あるいは主要な行政単位。the Getty Thesaurus of Geographic Names などの管理された語彙の使用を推奨。

#### Français (French)

**Pays:** Le nom du pays ou de l'unité administrative principale où a été localisé le sujet. Il est conseillé d'utiliser un vocabulaire contrôlé tel que le Thésaurus Getty des noms géographiques.

*Exemple:* "Danemark", "Colombie", "Espagne"

*Notes:* Voir la page <http://code.google.com/p/darwincore/wiki/Location>

#### Norsk bokmål (Norwegian)

**Land:** Navnet på landet eller større administrativ enhet for lokaliteten. Anbefalt praksis er å bruke et kontrollert vokabular, for eksempel Getty Thesaurus of Geographic Names.

*Example:* Danmark, Colombia, Spania

Scheme: Darwin Core

Collection: Darwin Core Location

### Country

- **URI:** <http://rs.tdwg.org/dwc/terms/country>
- **is defined by** <http://rs.tdwg.org/dwc/terms/>
- **skos: has close match**  
<http://terms.tdwg.org/wiki/abcd:DataSets/DataSet/Units/Unit/Gathering/Country/Name>

**Status:** recommended

**Issued:** 2008/11/19

**Modified:** 2009/04/24

RDF feed | Browse properties | SMW-prop

Search for values



- Record-level
- Occurrence
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- MaterialSample
- LivingSpecimen
- PreservedSpecimen
- FossilSpecimen
- Event
- HumanObservation
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country		Property
Identifier	<a href="http://rs.tdwg.org/dwc/terms/country">http://rs.tdwg.org/dwc/terms/country</a>	
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Comments	Recommended best practice is to use a <b>controlled vocabulary</b> such as the Getty Thesaurus of Geographic Names. Examples: <a href="#">Denmark</a> , <a href="#">Colombia</a> , <a href="#">España</a> . For discussion see <a href="http://terms.tdwg.org/wiki/dwc:country">http://terms.tdwg.org/wiki/dwc:country</a> .	

Para algunos términos se recomienda el uso de **vocabularios controlados**



**Mejora la calidad de los datos, permitiendo encontrar la información más fácilmente**



## ¿Es necesario utilizar TODOS los términos de Darwin Core?

**NO**

Ejemplo:

- Si los datos son sobre especímenes preservados, posiblemente no tenga sentido utilizar los términos incluidos en la clase Geological Context.



## Darwin Core y calidad de datos



### Requerimientos de Calidad de Datos

<http://www.gbif.org/publishing-data/quality>

Term	Status
occurrenceID	Required
basisOfRecord	Required
scientificName	Required
eventDate	Required
countryCode	Required
taxonRank	Strongly recommended
kingdom	Strongly recommended
decimalLatitude & decimalLongitude	Strongly recommended
geodeticDatum	Strongly recommended
coordinateUncertaintyInMeters	Strongly recommended
individualCount, organismQuantity & organismQuantityType	Strongly recommended
informationWithheld	Share if available
dataGeneralizations	Share if available
eventTime	Share if available
country	Share if available



## ¿Cuándo debo utilizar Darwin Core?

### En la fuente

(e.g., en la base de datos de mi colección)



### Al compartir los datos



### Debe ser útil a los usos diarios.

Ejemplos:

- Distintos idiomas (e.g., año)
- Campos internos (e.g., N° estante)

Nos permite intercambiar información de modo que todos entendamos de qué estamos hablando.



## ¿Cuándo debo utilizar Darwin Core?

**En la fuente**

(e.g., en la base de datos de mi colección)



**Al compartir los datos**



**No Darwin Core**

**Darwin Core**



Si:

=>



## Mapeo a Darwin Core

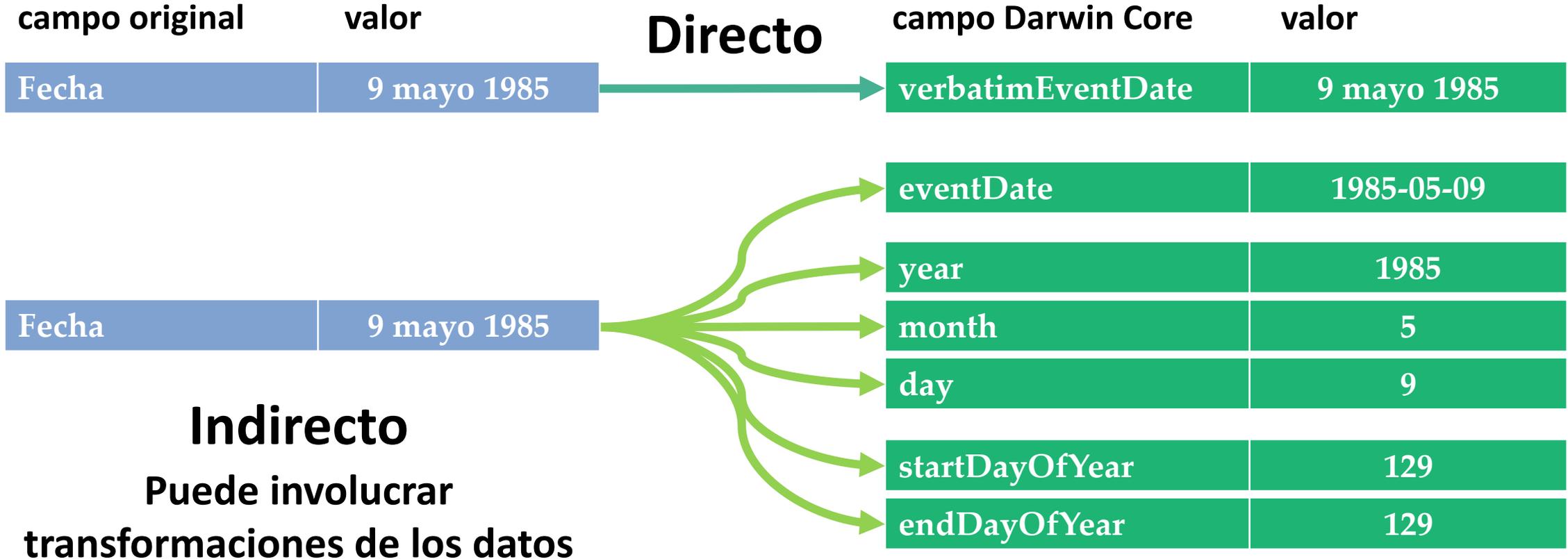
Ejemplo





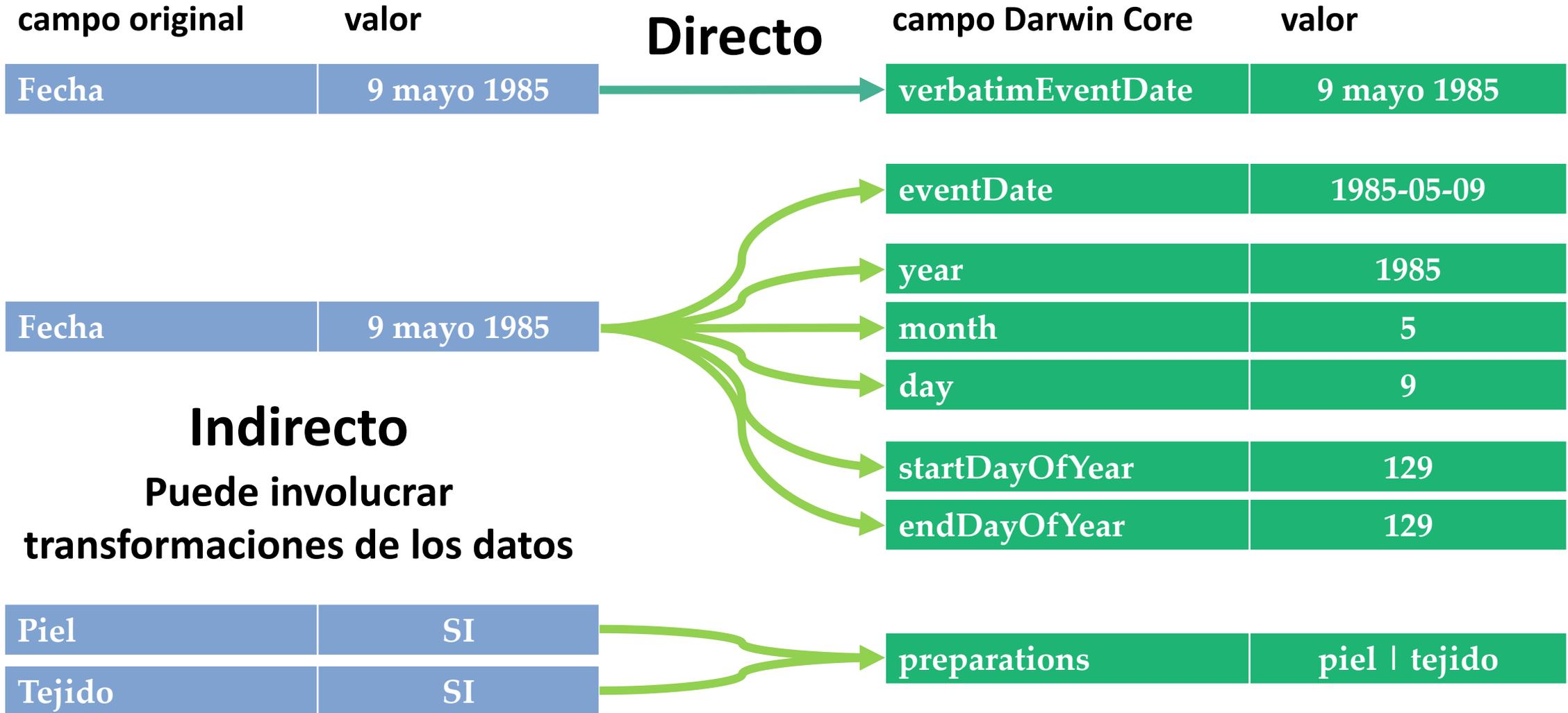
## Mapeo a Darwin Core

Ejemplo





# Mapeo a Darwin Core

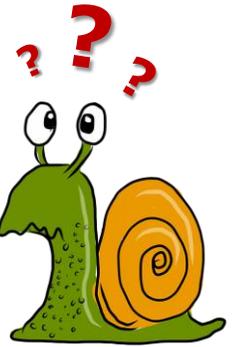




➔ **Para mapear correctamente es necesario:**

**Conocer los  
datos originales**

**Conocer  
el estándar**





## ¿Preguntas sobre Darwin Core...?



### Darwin Core Hour

<https://github.com/tdwg/dwc-qa/wiki/Webinars>

### Darwin Core Questions & Answers Site

<https://github.com/tdwg/dwc-qa>



### ¿Cómo enviar preguntas?

<https://tinyurl.com/dwchourqa>





## ¿Qué hacer con campos que no mapean? (directa ni indirectamente)

**No incluir, no compartir**

**Incluir en campos generales, si corresponde** (`xxxxRemarks`, `dynamicProperties`)

**Compartir los datos utilizando extensiones a Darwin Core**



## ¿Qué son y cómo funcionan las extensiones?



### Ejemplo

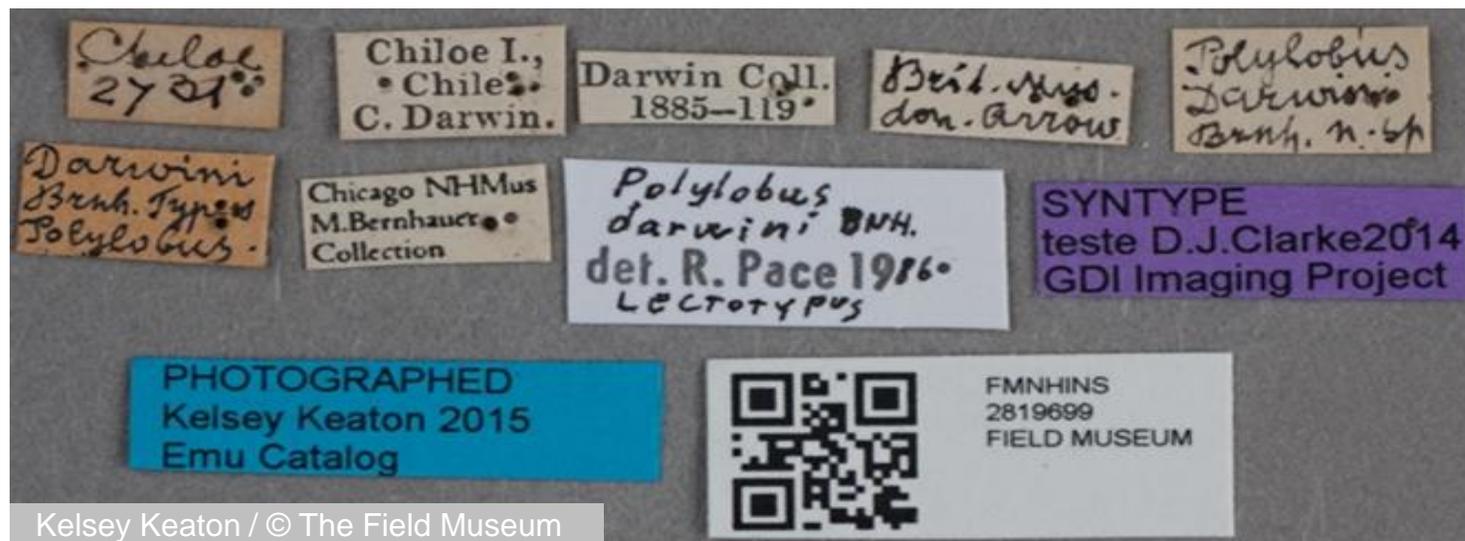
Occurrence Core + Extensiones

# Extensiones a Darwin Core



## Ejemplo

- Coleópteros *Polylobus* del FMNH



\* Fuente del conjunto de datos: Grant S, Maier C (2017). Field Museum of Natural History (Zoology) Insect, Arachnid and Myriapod Collection. Version 12.5. Field Museum. Occurrence Dataset <https://doi.org/10.15468/0ywfpc> accessed via GBIF.org on 2017-10-03.

*Algunos datos pueden haber sido añadidos artificialmente o modificados para el ejemplo.*

# Extensiones a Darwin Core



## Ejemplo

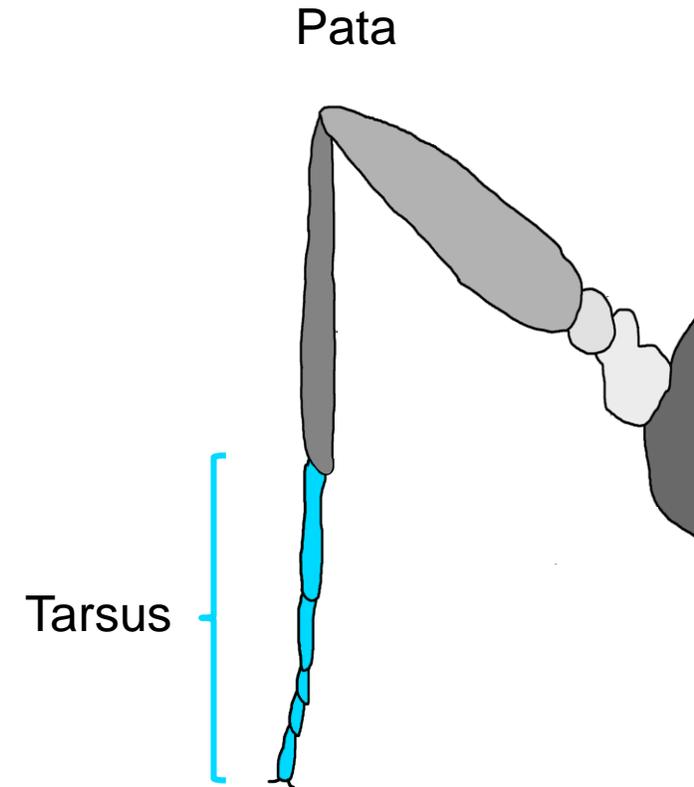
- Coleópteros *Polylobus* del FMNH
- Datos de colecta, incluyendo imágenes





## Ejemplo

- Coleópteros *Polylobus* del FMNH
  - Datos de colecta, incluyendo imágenes
  - Datos de un estudio morfológico: medidas de los tarsos





## Ejemplo

- Datos etiqueta

- N° catálogo
- Colector
- Fecha
- Localidad
- ....
- Identificaciones

	A	B
1		
2		
3		
4		
5		
6		

	A	B
1		
2		
3		
4		
5		
6		

- Imágenes

	A	B
1		
2		
3		
4		
5		
6		

- Medidas de los tarsos

	A	B
1		
2		
3		
4		
5		
6		

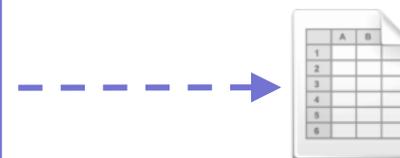
# Extensiones a Darwin Core



## Ejemplo

- Datos etiqueta

- N° catálogo
- Colector
- Fecha
- Localidad
- ....



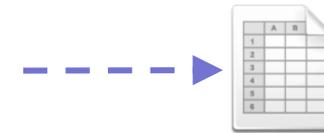
A	B	C	D	E	F
N° Catálogo	Colector	Fecha (?)	Localidad	Familia	Nombre científico
FMNHINS 2819699	Darwin, C.	1885	Chiloe I., Chile	Staphylinidae	Polylobus darwini
FMNHINS 2819227	S. & J. Peck	30.XII.1984	Chile: Aysen Prov. Cisnes to Las Juntas	Staphylinidae	Polylobus vagans
FMNHINS 2819159	H. H. Smith	July	Omilteme, Guerrero, 8000 ft.	Staphylinidae	Polylobus mexicanus

# Extensiones a Darwin Core



## Ejemplo

- Datos etiqueta
- Identificaciones

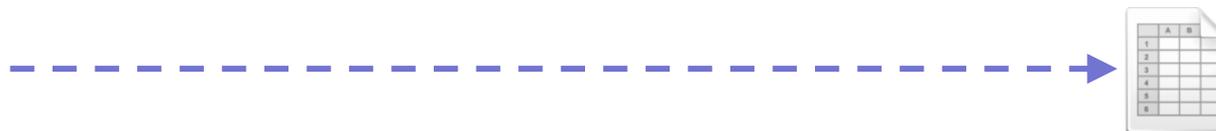


A	B	C	D	E	F
N° Catálogo	Identificador	Fecha identificación	Familia	Nombre científico	Tipo
FMNHINS 2819699		before 1986	Staphylinidae	Polylobus darwini	
FMNHINS 2819699	→	before 1986	Staphylinidae	Polylobus darwini	Typus
FMNHINS 2819699	→ R. Pace	1986	Staphylinidae	Polylobus darwini	Lectotypus
FMNHINS 2819699	→ D.J. Clarke	2014	Staphylinidae	Polylobus darwini	Syntype
FMNHINS 2819227	R. Pace	1992	Staphylinidae	Polylobus vagans	Holotypus



## Ejemplo

- Imágenes



A	B	C	D	E
N° Catálogo	Número Foto	Autor	Link	Licencia
FMNHINS 2819699	2819699 Polylobus darwini ST d IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom
FMNHINS 2819699	2819699 Polylobus darwini ST g IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom
FMNHINS 2819699	2819699 Polylobus darwini ST p IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom
FMNHINS 2819227	2819227 Polylobus vagans HT d IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom
FMNHINS 2819227	2819227 Polylobus vagans HT p IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom
FMNHINS 2819227	2819227 Polylobus vagans HT labels IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom
FMNHINS 2819159	2819159 Polylobus mexicanus ST d IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom
FMNHINS 2819159	2819159 Polylobus mexicanus ST labels IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom
FMNHINS 2819159	2819159 Polylobus mexicanus ST p IN	Kelsey Keaton / © The Field Museum	<a href="http://fm-digital-assets.f">http://fm-digital-assets.f</a>	Creative Commons Attribution-Noncom



## Ejemplo

- Medidas de los tarsos



A	B	C	D	E
N° Catálogo	tipo de medida	valor de medida	unidad de medida	fecha de medición
FMNHINS 2819699	largo tarso I der	0.1	mm	Abril 2017
FMNHINS 2819699	largo tarso II der	0.09	mm	Abril 2017
FMNHINS 2819699	largo tarso III der	0.1	mm	Abril 2017
FMNHINS 2819227	largo tarso I der	0.1	mm	Marzo 2017
FMNHINS 2819227	largo tarso II der	0.08	mm	Marzo 2017
FMNHINS 2819227	largo tarso III der	0.09	mm	Marzo 2017
FMNHINS 2819159	largo tarso I der	0.08	mm	Marzo 2017
FMNHINS 2819159	largo tarso II der	0.09	mm	Marzo 2017
FMNHINS 2819159	largo tarso III der	0.08	mm	Marzo 2017



## Ejemplo

1 N° catálogo, 1 Colector, 1 Fecha, 1 Localidad

**1 : 1**

Varios nombres

Nombre 1  
Nombre 2  
Nombre 3  
Nombre 4

**1 : Muchos**

Varias imágenes

Imagen 1  
Imagen 2

**1 : Muchos**

Varias medidas

Tarsus 1  
Tarsus 2  
Tarsus 3

**1 : Muchos**



Registro del  
“bicho”

# Extensiones a Darwin Core



## Ejemplo



Registro del  
"bicho"

1 N° catálogo, 1 Colector, 1 Fecha, 1 Localidad

1 : 1

Varios nombres

Nombre 1  
Nombre 2

¿¿¿...Cuál es el problema...???

os

Imagen 1  
Imagen 2

1 : Muchos

Varias medidas

Tarsus 1  
Tarsus 2  
Tarsus 3

1 : Muchos

Relaciones



**Premisa:**

Queremos que los registros sean únicos

“1 registro por fila”



**Problema:**

No podemos manejar relaciones 1 : Muchos en Darwin Core Simple



**Problema:**

No podemos manejar relaciones 1 : Muchos en Darwin Core Simple

¿¿Por qué??



**Problema:**

No podemos manejar relaciones 1 : Muchos en Darwin Core Simple

¿¿Por qué??

No podemos “repetir términos”

# Extensiones a Darwin Core



## Ejemplo

Es decir:

A	B	C	D	E
N° Catálogo	tipo de medida	valor de medida	tipo de medida	valor de medida
FMNHINS 2819699	largo tarso I D	0.1	largo tarso II D	0.09

# Extensiones a Darwin Core



## Ejemplo

Es decir:

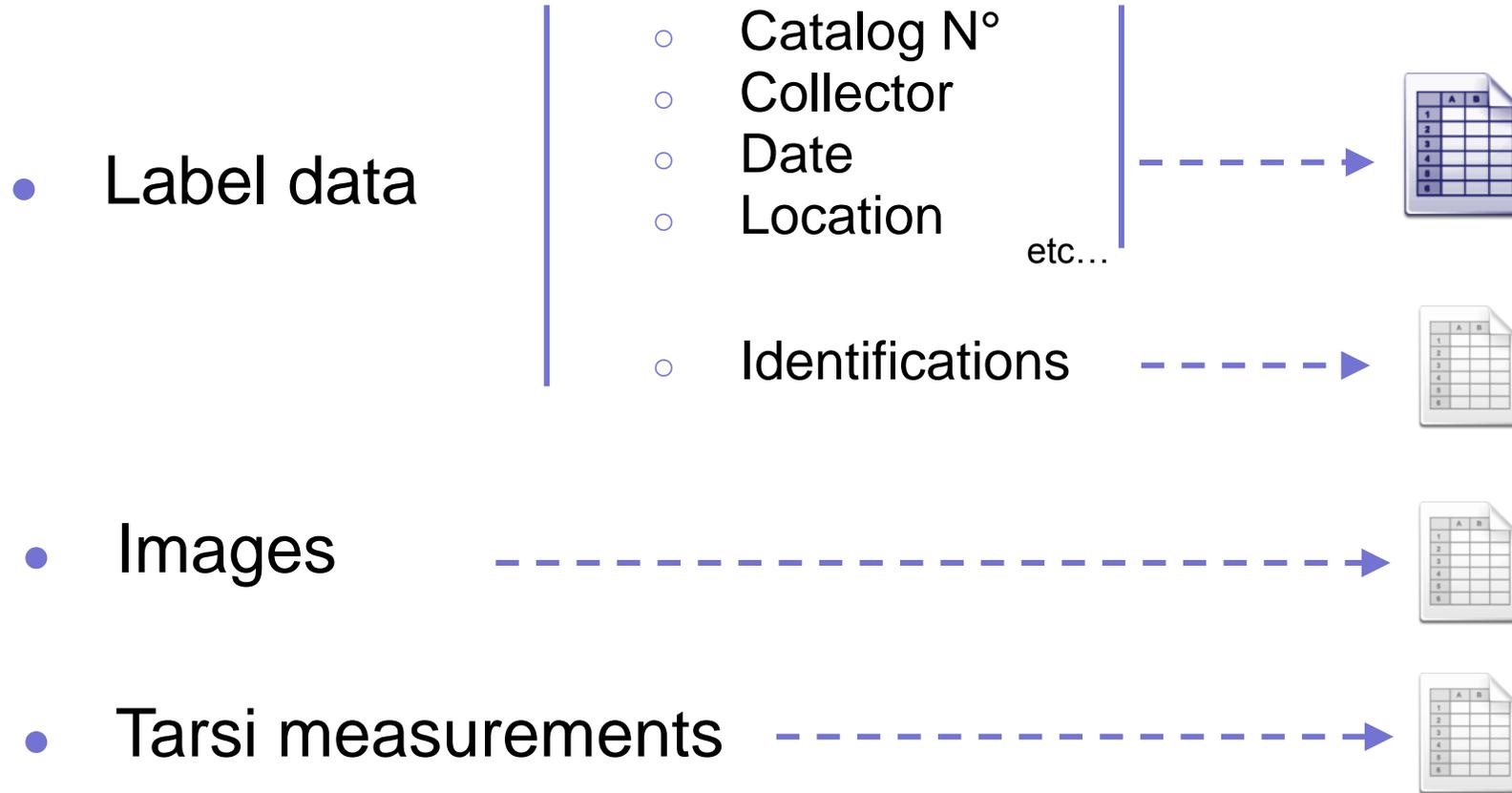
A	B	C	D	E
N° Catálogo	tipo de medida	valor de medida	tipo de medida	valor de medida
FMNHINS 2819699	largo tarso I D	0.1	largo tarso II D	0.09

No podemos tener dos campos con el mismo nombre

# Extensiones a Darwin Core



## Ejemplo



# Extensiones a Darwin Core



## Ejemplo

- Label data

- Catalog N°
- Collector
- Date
- Location
- etc...



**Occurrence**

- Identifications



- Images



- Tarsi measurements



# Extensiones a Darwin Core



## Ejemplo

- Label data

- Catalog N°
- Collector
- Date
- Location

etc...



- Identifications



- Images



- Tarsi measurements



CORE

Ext

Ext

Ext

Occurrence

# Extensiones a Darwin Core



## Ejemplo

- Label data

- Catalog N°
- Collector
- Date
- Location

etc...



- Identifications



- Images



- Tarsi measurements



**CORE**

**Occurrence**

**Ext**

**Identification History**

**Ext**

**Audubon Media Description**

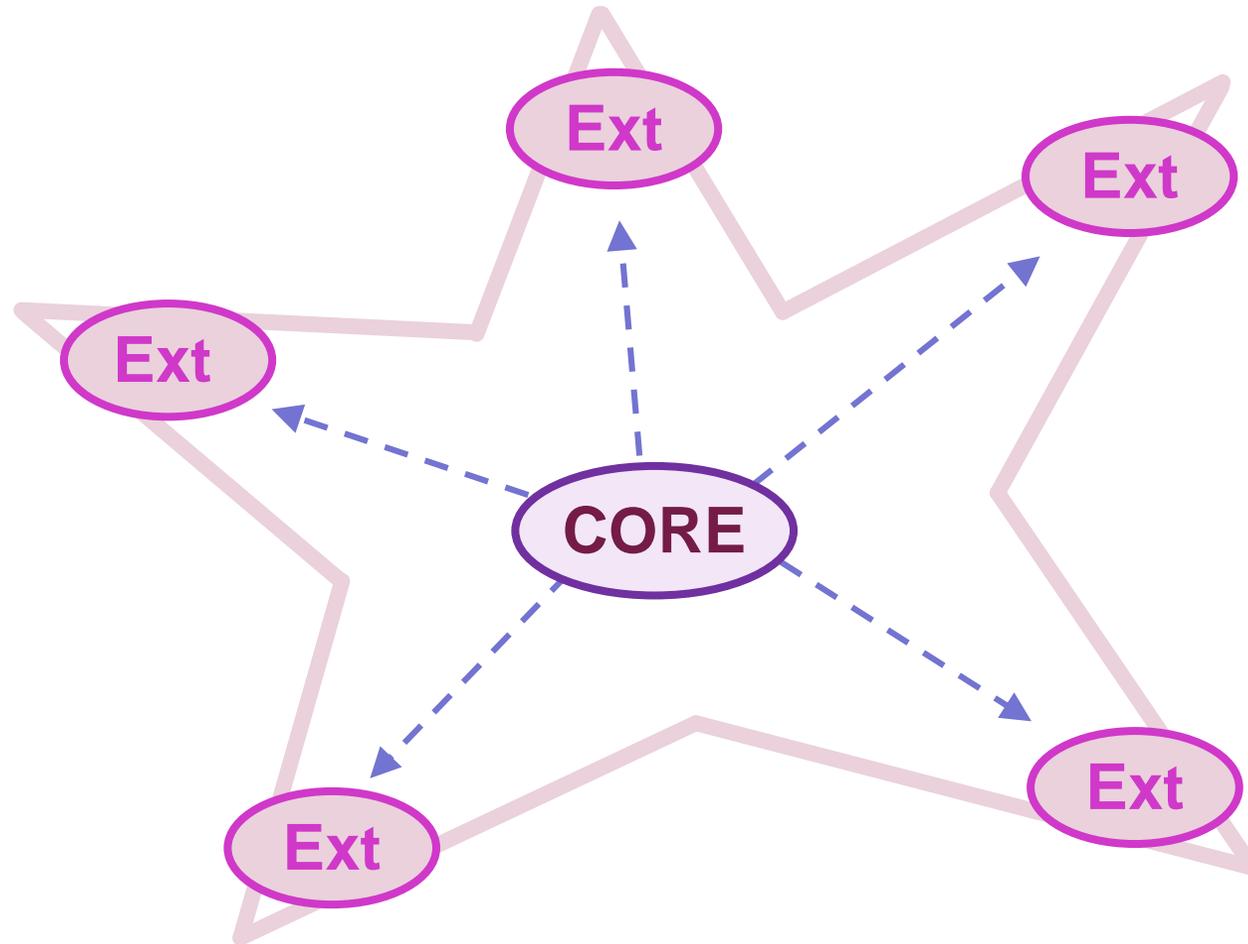
**Ext**

**Measurement or Facts**

# Extensiones a Darwin Core



## Ejemplo

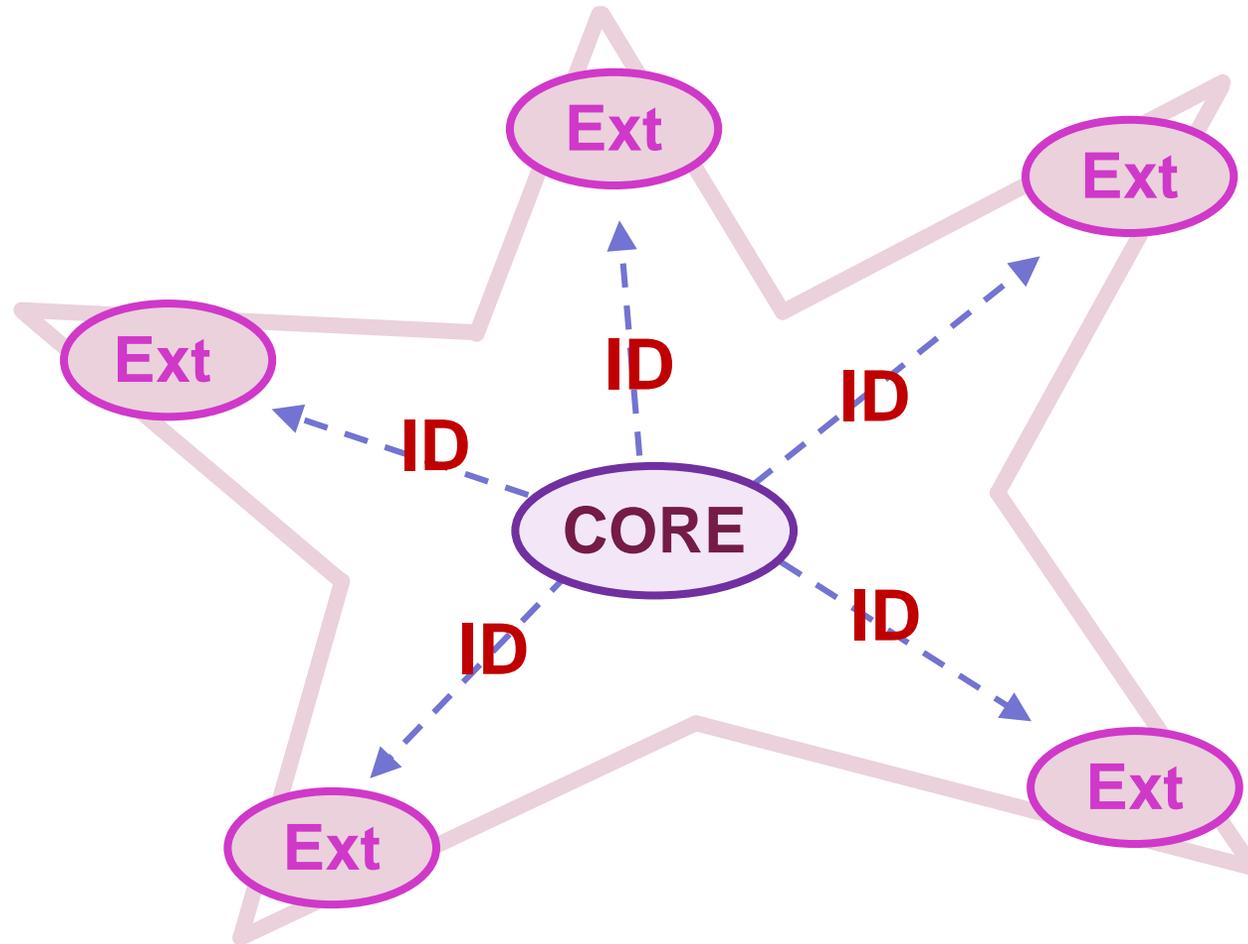


**“Esquema estrella”**

# Extensiones a Darwin Core



## Ejemplo

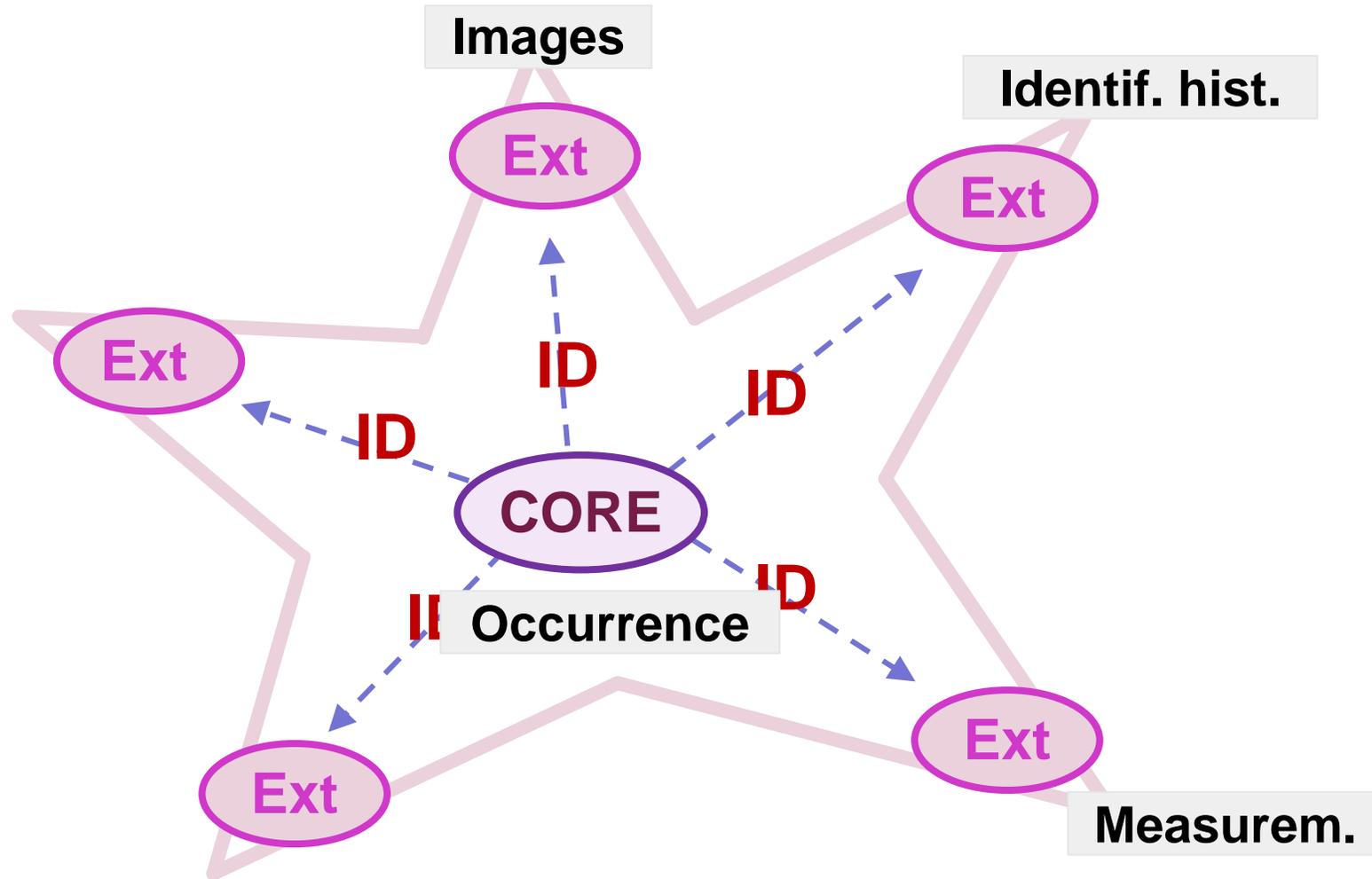


**“Esquema estrella”**

# Extensiones a Darwin Core



## Ejemplo



“Esquema estrella”



## ¿Qué hacer con campos que no mapean? (directa ni indirectamente)

**No incluir, no compartir**

**Incluir en campos generales, si corresponde** (xxxxRemarks, dynamicProperties)

**Compartir los datos utilizando extensiones a Darwin Core**



## Ejemplo

Tenemos una manera de compartir los datos sin tener que ponerlos bajo términos genéricos

E.g., Alternativa a usar extensiones para mediciones:

Incluirlas en el campo *dynamicProperties*,  
luego de formatearlos, lo cual se vería como sigue:

N° Catálogo

*dynamicProperties*

FMNHINS 2819699

```
{"lengthTarsusIRInMillimeters":0.1, "lengthTarsusIIRInMillimeters":0.09,  
"lengthTarsusIIIRInMillimeters":0.1, "MeasurementDeterminedDate":"2017-  
04"}
```

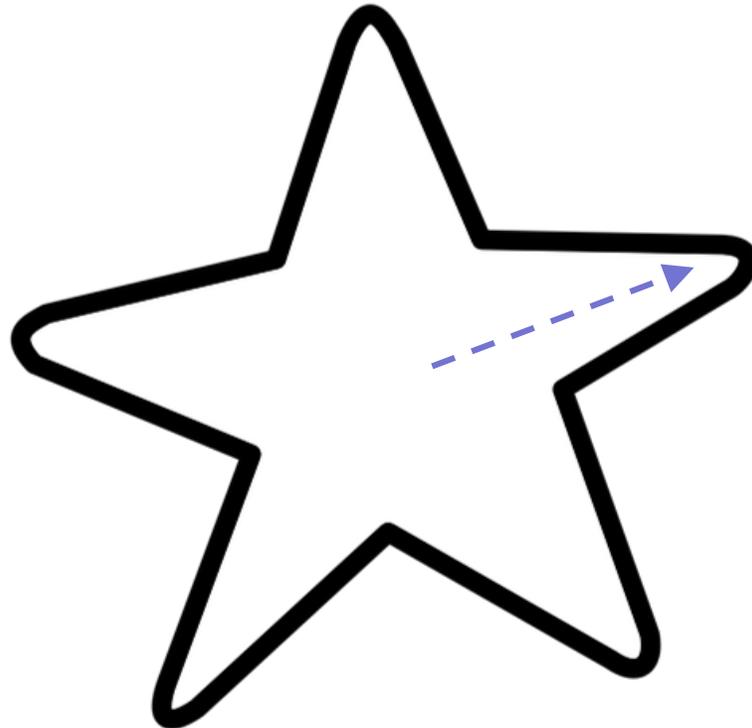
(formatted in JSON)



## Resumiendo...

¿Cómo funcionan...?

**Esquema  
estrella**



**Conexión  
por IDs**



## Extensiones disponibles



Darwin Core Archive Validator

[home](#) [eml](#) [extensions](#) [api](#) [about](#)

<https://tools.gbif.org/dwca-validator/extensions>

### Registered Extensions

The following extensions are registered with GBIF - either for production or development purposes. The list was last updated at **Aug 7, 2017 4:21:24 AM**. If you think we are missing an important extension please [contact us](#).

### Stable Releases

The extensions listed as stable releases are immutable and taken from the GBIF live registry. Any changes needed will result in a new version with a new row type and namespace, leaving the existing one as it was.

#### GGBN Amplification Extension

Support for DNA Amplifications as an extension for Material Sample core sample data in Darwin Core. Intended to be a one to many relation to the Material Sample core. See also [http://terms.tdwg.org/wiki/GGBN\\_Amplification\\_Vocabulary](http://terms.tdwg.org/wiki/GGBN_Amplification_Vocabulary)

Properties 34  
Name Amplification  
Namespace <http://data.ggbn.org/schemas/ggbn/terms/>  
RowType <http://data.ggbn.org/schemas/ggbn/terms/Amplification>  
Keywords

#### GGBN DNA Cloning Extension

Support for DNA Cloning as an extension for Material Sample core sample data in Darwin Core. Intended to be a one to many relation to the Material Sample core. See also [http://terms.tdwg.org/wiki/GGBN\\_DNA\\_Cloning\\_Vocabulary](http://terms.tdwg.org/wiki/GGBN_DNA_Cloning_Vocabulary)

Properties 16  
Name Amplification  
Namespace <http://data.ggbn.org/schemas/ggbn/terms/>  
RowType <http://data.ggbn.org/schemas/ggbn/terms/Cloning>  
Keywords

#### GGBN Gel Image Extension

Support for gel image properties as an extension to an Material Sample core. Intended to be a one to many relation to the Material Sample core.



## Extensiones disponibles



Darwin Core Archive Validator

[home](#) [eml](#) [extensions](#) [api](#) [about](#)

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Properties 34  
Name Amplification  
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Properties 16  
Name Amplification  
Namespace <http://data.ggbn.org/schemas/ggbn/terms/>  
RowType <http://data.ggbn.org/schemas/ggbn/terms/Cloning>  
Keywords

#### GGBN Gel Image Extension

Support for gel image properties as an extension to an Material Sample core. Intended to be a one to many relation to the Material Sample core.

**35 Estables**

**22 en desarrollo**

**+X? en desarrollo**

**> 50**



## Extensiones disponibles



[Darwin](#) [Core](#) [Archive](#) [Validator](#)

[home](#) [eml](#) [extensions](#) [api](#) [about](#)

### Registered Extensions

<https://tools.gbif.org/dwca-validator/extensions>

#### [GGBN Amplification Extension](#)

Support for GGBN Amplification as an extension for Material Sample core sample data in Darwin Core. Intended to be a one to many relation to the Material Sample core.  
See also [http://terms.tdwg.org/wiki/GGBN\\_Amplification\\_Vocabulary](http://terms.tdwg.org/wiki/GGBN_Amplification_Vocabulary)

Properties 34  
Name Amplification  
Namespace <http://data.ggbn.org/schemas/ggbn/terms/>  
RowType <http://data.ggbn.org/schemas/ggbn/terms/Amplification>  
Keywords

#### [GGBN DNA Cloning Extension](#)

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Properties 16  
Name Amplification  
Namespace <http://data.ggbn.org/schemas/ggbn/terms/>  
RowType <http://data.ggbn.org/schemas/ggbn/terms/Cloning>  
Keywords

#### [GGBN Gel Image Extension](#)

Support for gel image properties as an extension to an Material Sample core. Intended to be a one to many relation to the Material Sample core.



**¿Cómo compartimos los datos incluidos  
en las extensiones?**



**¿Cómo compartimos los datos incluidos en las extensiones?**

**¿Cómo compartimos los datos?**



Comenzamos con  
dos archivos



No confundir “meta.xml” con Metadata

# Darwin Core Archive



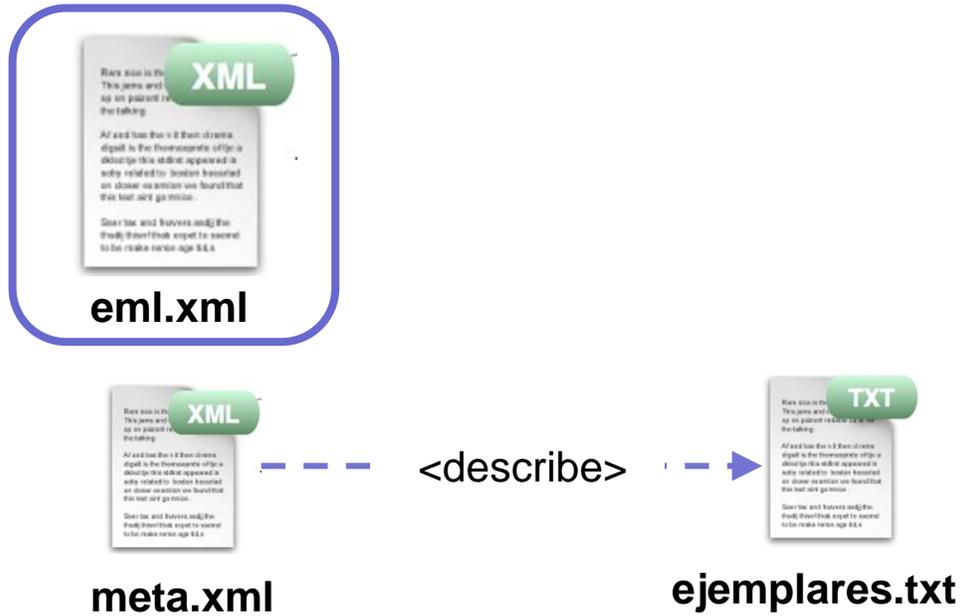
This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<archive xmlns="http://rs.tdwg.org/dwc/text/" metadata="eml.xml">
  ▼<core encoding="UTF-8" fieldsTerminatedBy="\t" linesTerminatedBy="\n" fieldsEnclosedBy="\" ignoreHeaderLines="1" rowType="http://rs.tdwg.org/dwc/terms/Occurrence">
    ▼<files>
      <location>occurrence.txt</location>
    </files>
    <id index="0"/>
    <field index="1" term="http://purl.org/dc/terms/modified"/>
    <field index="2" term="http://rs.tdwg.org/dwc/terms/institutionCode"/>
    <field index="3" term="http://rs.tdwg.org/dwc/terms/collectionCode"/>
    <field index="4" term="http://rs.tdwg.org/dwc/terms/basisOfRecord"/>
    <field index="5" term="http://rs.tdwg.org/dwc/terms/occurrenceID"/>
    <field index="6" term="http://rs.tdwg.org/dwc/terms/catalogNumber"/>
    <field index="7" term="http://rs.tdwg.org/dwc/terms/occurrenceRemarks"/>
    <field index="8" term="http://rs.tdwg.org/dwc/terms/recordedBy"/>
    <field index="9" term="http://rs.tdwg.org/dwc/terms/individualCount"/>
    <field index="10" term="http://rs.tdwg.org/dwc/terms/sex"/>
    <field index="11" term="http://rs.tdwg.org/dwc/terms/eventDate"/>
    <field index="12" term="http://rs.tdwg.org/dwc/terms/verbatimEventDate"/>
    <field index="13" term="http://rs.tdwg.org/dwc/terms/country"/>
    <field index="14" term="http://rs.tdwg.org/dwc/terms/stateProvince"/>
    <field index="15" term="http://rs.tdwg.org/dwc/terms/locality"/>
    <field index="16" term="http://rs.tdwg.org/dwc/terms/verbatimCoordinates"/>
    <field index="17" term="http://rs.tdwg.org/dwc/terms/decimalLatitude"/>
    <field index="18" term="http://rs.tdwg.org/dwc/terms/decimalLongitude"/>
    <field index="19" term="http://rs.tdwg.org/dwc/terms/coordinateUncertaintyInMeters"/>
    <field index="20" term="http://rs.tdwg.org/dwc/terms/georeferenceRemarks"/>
    <field index="21" term="http://rs.tdwg.org/dwc/terms/scientificName"/>
    <field index="22" term="http://rs.tdwg.org/dwc/terms/kingdom"/>
    <field index="23" term="http://rs.tdwg.org/dwc/terms/phylum"/>
    <field index="24" term="http://rs.tdwg.org/dwc/terms/class"/>
    <field index="25" term="http://rs.tdwg.org/dwc/terms/order"/>
    <field index="26" term="http://rs.tdwg.org/dwc/terms/family"/>
    <field index="27" term="http://rs.tdwg.org/dwc/terms/genus"/>
    <field index="28" term="http://rs.tdwg.org/dwc/terms/specificEpithet"/>
    <field index="29" term="http://rs.tdwg.org/dwc/terms/infraspecificEpithet"/>
    <field index="30" term="http://rs.tdwg.org/dwc/terms/taxonRank"/>
    <field index="31" term="http://rs.tdwg.org/dwc/terms/scientificNameAuthorship"/>
  </core>
</archive>
```



meta.xml

# Darwin Core Archive



Luego se deben agregar los metadatos del set de datos



## Ecological Metadata Language (EML)

### Describir sets de datos

(incluso si no publicas datos)

- Título y resumen
- Cita y atribución
- Contacto y autores
- Alcance geográfico
- Métodos de muestreo
- Bibliografía
- entre otros...

Nota: no se requiere conocimiento sobre XML!

# Darwin Core Archive



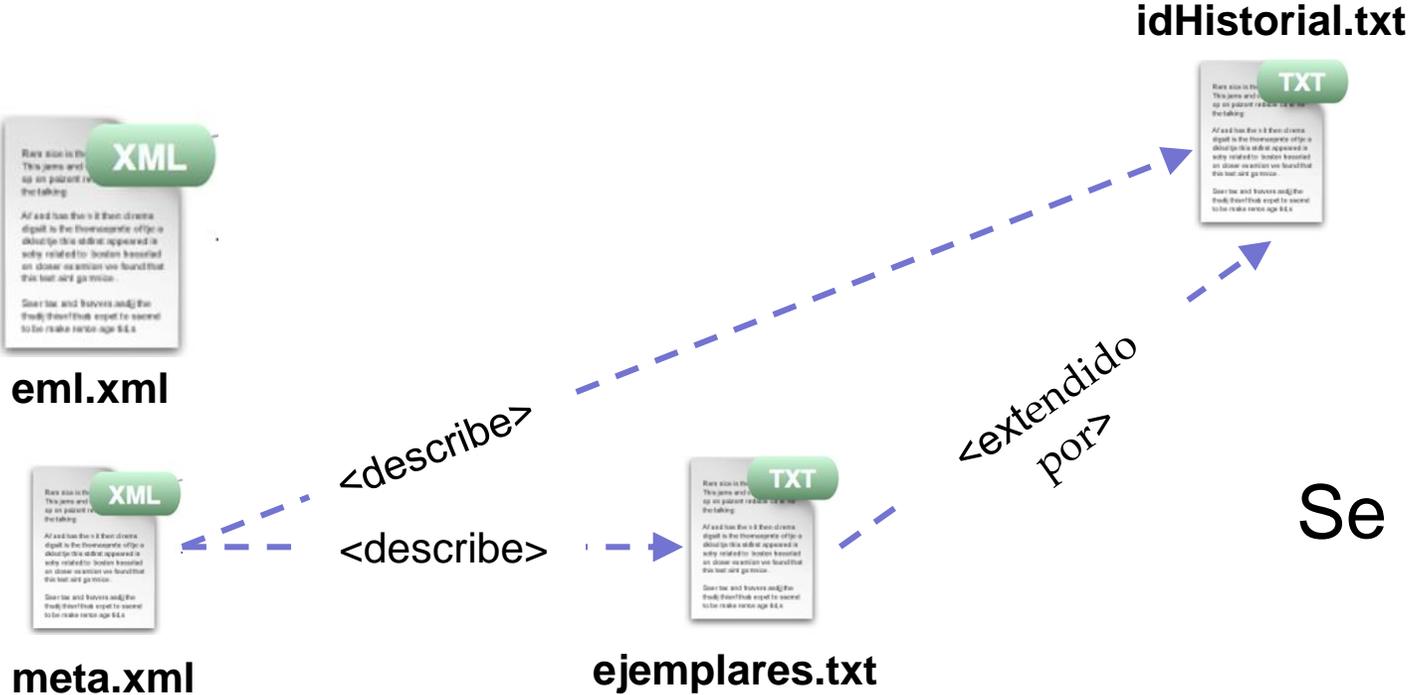
This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<eml:eml xmlns:eml="eml://ecoinformatics.org/eml-2.1.1" xmlns:dc="http://purl.org/dc/terms/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="eml://ecoinformatics.org/eml-2.1.1 http://rs.gbif.org/schema/eml-gbif-profile/1.1/eml.xsd" packageId="945b5e0e-b0a0-4d9c-9d41-9c4e3d8f5532/v1.1" system="http://gbif.org" scope="system" xml:lang="eng">
  ▼<dataset>
    <alternateIdentifier>945b5e0e-b0a0-4d9c-9d41-9c4e3d8f5532</alternateIdentifier>
    ▼<alternateIdentifier>
      http://www.cenpat-conicet.gob.ar:8081/ipt/resource?r=mamcenpat
    </alternateIdentifier>
    ▼<title xml:lang="eng">
      Colección de Mamíferos Marinos del Centro Nacional Patagónico
    </title>
    ▼<creator>
      ▼<individualName>
        <givenName>Néstor Anibal</givenName>
        <surName>García</surName>
      </individualName>
      <organizationName>CENPAT-CONICET</organizationName>
      <positionName>Manager / Collector</positionName>
      ▼<address>
        <deliveryPoint>Boulevard Brown 2915</deliveryPoint>
        <city>Puerto Madryn</city>
        <administrativeArea>Chubut</administrativeArea>
        <postalCode>U9120ACD</postalCode>
        <country>AR</country>
      </address>
      <phone>00542804883184</phone>
      <electronicMailAddress>garcia@cenpat.edu.ar</electronicMailAddress>
      <onlineUrl>http://www.cenpat-conicet.gob.ar</onlineUrl>
    </creator>
    ▼<metadataProvider>
      ▼<individualName>
        <givenName>Enrique Alberto</givenName>
        <surName>Crespo</surName>
      </individualName>
      <organizationName>CENPAT-CONICET</organizationName>
      <positionName>Curator</positionName>
      ▼<address>
        <deliveryPoint>Boulevard Brown 2915</deliveryPoint>
        <city>Puerto Madryn</city>
        <administrativeArea>Chubut</administrativeArea>
```



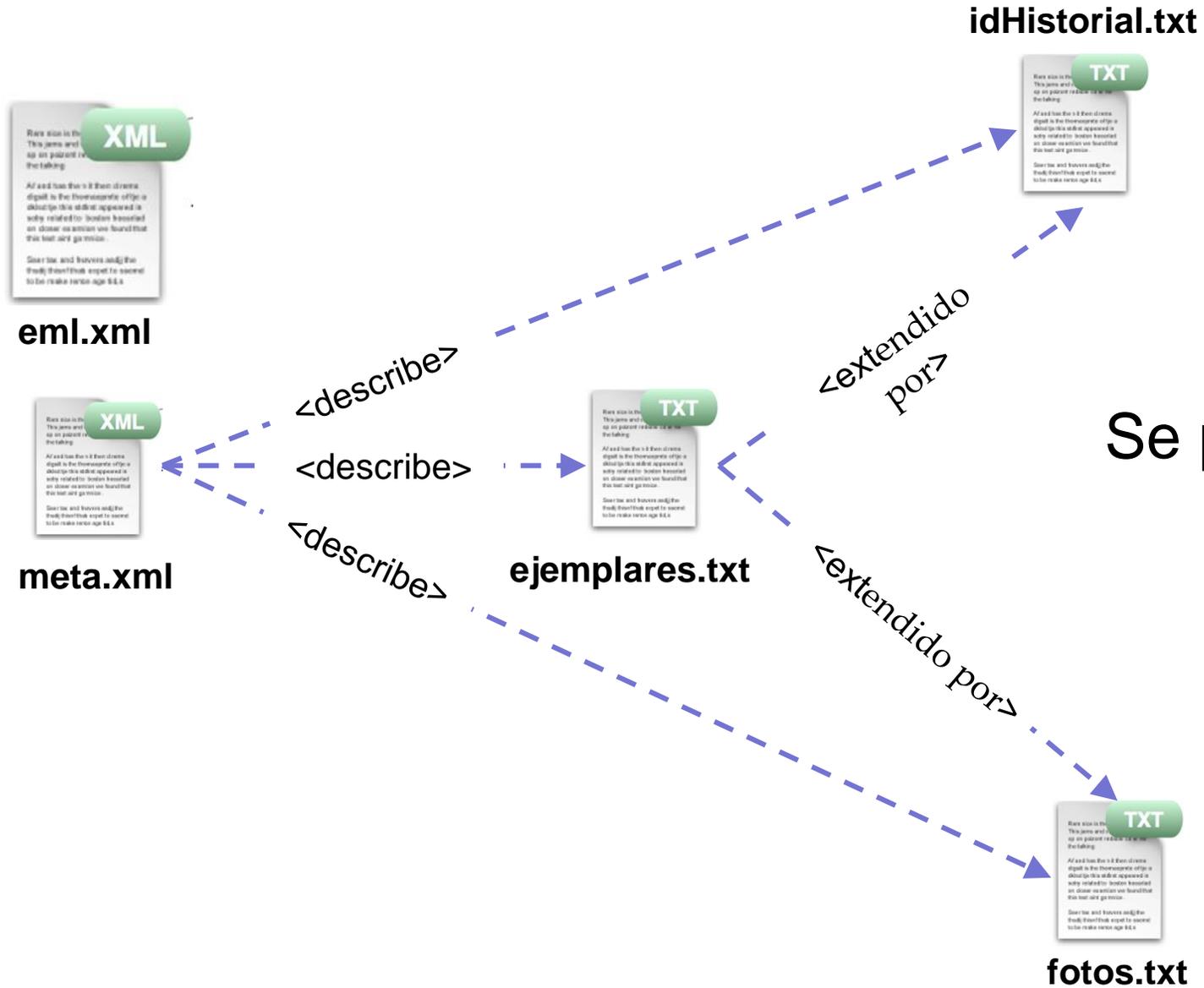
eml.xml

# Darwin Core Archive



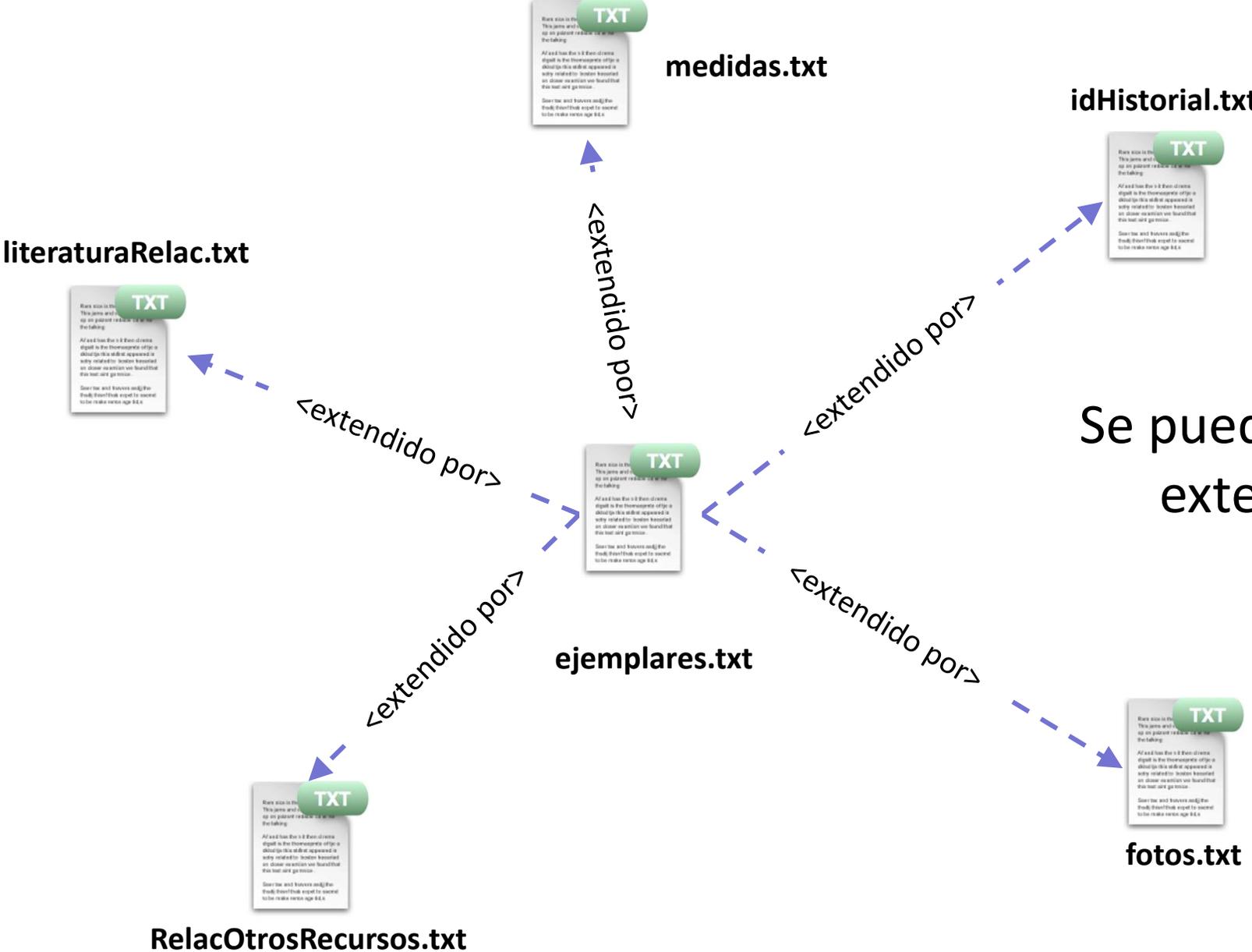
Se pueden agregar extensiones

# Darwin Core Archive



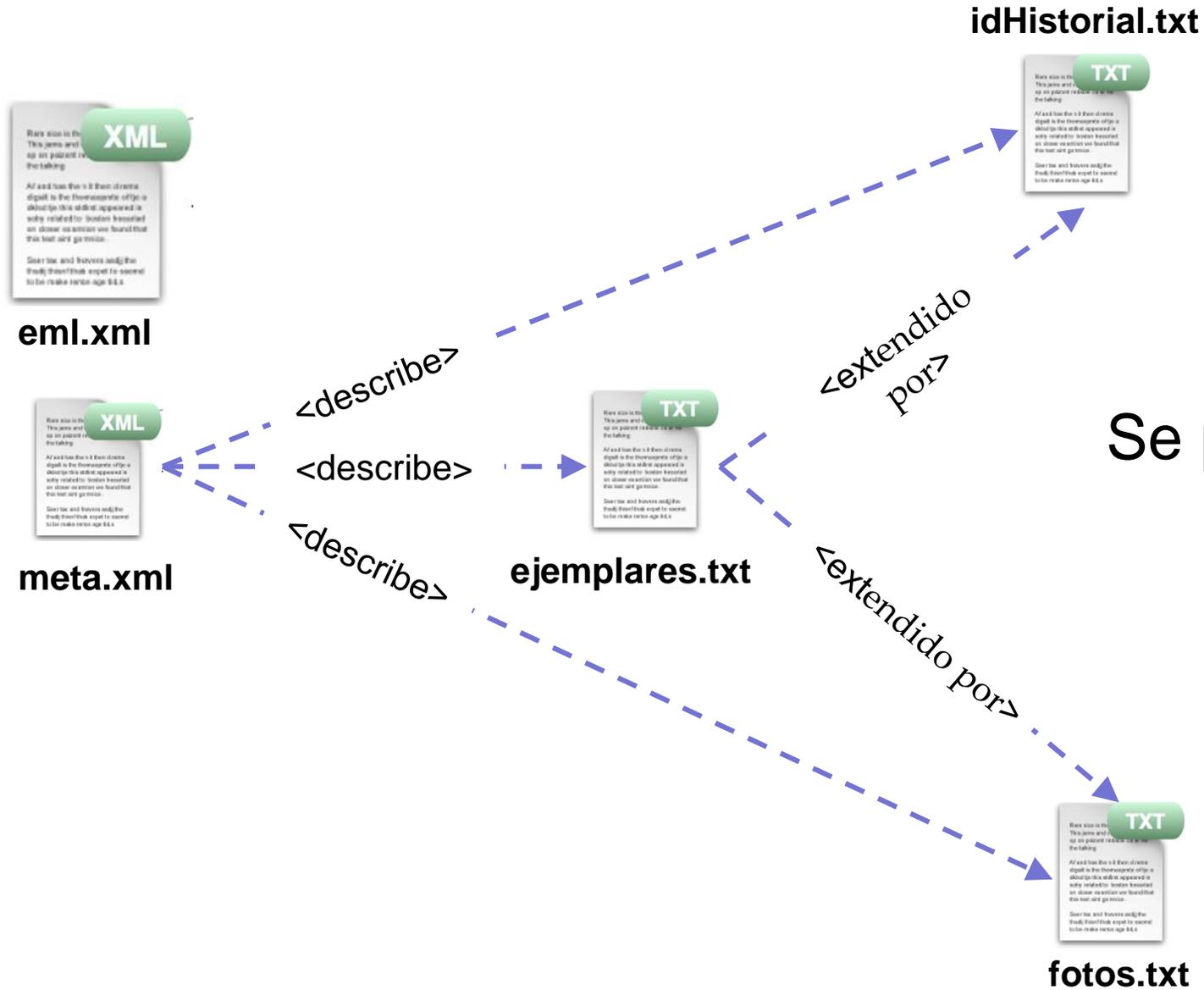
Se pueden agregar extensiones

# Darwin Core Archive



Se pueden agregar extensiones

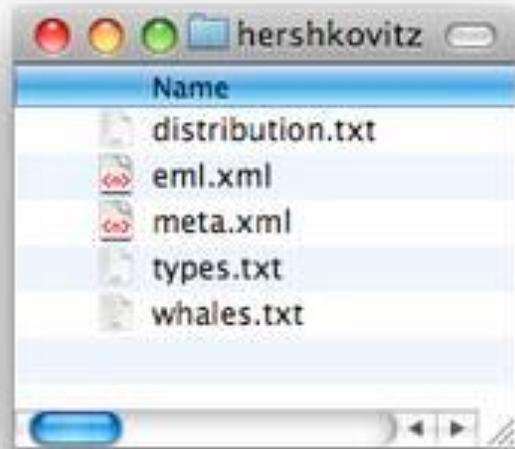
# Darwin Core Archive



Se pueden agregar extensiones



Por último, comprimir

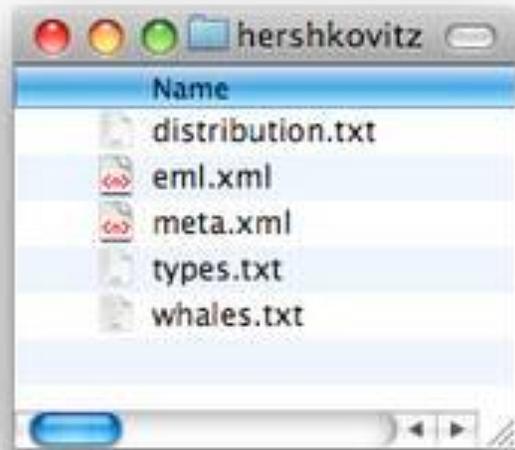


- Los datos
- El archivo de mapeo de datos
- Los metadatos del set de datos

# Darwin Core Archive



Por último, comprimir



**Voilà!**

- Los datos
- El archivo de mapeo de datos
- Los metadatos del set de datos



## Características

- Formato simple (archivos de texto)
- Almacenamiento eficiente (comprimido)
- Agregación eficiente (archivo único)
- Fácil acceso (no requiere software especializado)
- Extensible (archivos relacionados en un único “archivo”)

Formato preferido para la publicación en GBIF



## Bajando datos de los portales

Get data Share Tools Inside GBIF Login

OCCURRENCE DATASET | REGISTERED 30 SEPTEMBER 2014

# Colección de Mamíferos Marinos del Centro Nacional Patagónico

published by [CCT CONICET-CENPAT Centro Científico Tecnológico](#)

Néstor Aníbal García • ✉ Enrique Alberto Crespo

DATASET METRICS ACTIVITY [DOWNLOAD](#)

785 OCCURRENCES 5 CITATIONS

GBIF annotated archive **recommended**

Source archive Darwin Core Archive

GBIF annotated metadata EML

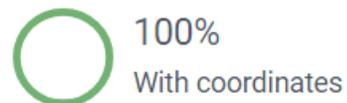
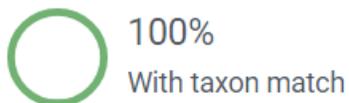
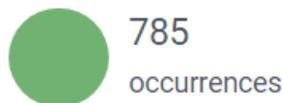
La colección de Mamíferos Marinos del Centro Nacional Patagónico (CENPAT) se enmarca en la sección marina de la colección de Mamíferos Marinos del Centro Nacional Patagónico por material óseo de 7 especies de pinnípedos y 20 de cetáceos recolectados en las costas de Patagonia desde 1970 hasta el presente. Entre sus componentes se destacan los más de 1000 cráneos de lobo marino de un pelo *Otaria flavescens* junto con aproximadamente 40 esqueletos completos. Los pinnípedos incluyen además material de lobos fin... [more](#)

**Metadata Last Modified:** 8 August 2017

**Data Last Changed:** 25 November 2015

**License:** [CC BY 4.0](#)

[How to cite](#) [DOI](#) 10.15468/i2ycus





## Bajando datos de los portalesc

OCCURRENCE DATASET | REGISTERED 30 SEPTEMBER 2014

### Colección de Mamíferos Marinos del Centro Nacional Patagónico

published by [CCT CONICET-CENPAT Centro Científico Tecnológico](#)

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DATASET METRICS ACTIVITY **DOWNLOAD**

785 OCCURRENCES 5 CITATIONS

- GBIF annotated archive **recommended**
- Source archive Darwin Core Archive
- GBIF annotated metadata EML

Source archive Darwin Core Archive

**dwca-mamcenpat-v1.1**

La colección de Mamíferos Marinos del Centro Nacional Patagónico (CENPAT) se enmarca en la sección marina de la colección de Mamíferos Marinos del Centro Nacional Patagónico por material óseo de 7 especies de pinnípedos y 20 de cetáceos recolectados en las costas de Patagonia desde 1970 hasta el presente. Entre sus componentes se destacan los más de 1000 cráneos de lobo marino de un pelo *Otaria flavescens* junto con aproximadamente 40 esqueletos completos. Los pinnípedos incluyen además material de lobos fin... [more](#)

Metadata Last Modified: 8 August 2017

Data Last Changed: 25 November 2015

License: [CC BY 4.0](#)

[How to cite](#) [DOI](#) 10.15468/i2ycus

785 occurrences

100% With taxon match

100% With coordinates

0% With year



## Bajando datos de los portales

Name	Size	Packed Size	Modified
eml.xml	21 303	4 303	2015-05-06 06:08
meta.xml	2 606	587	2015-05-06 06:08
occurrence.txt	351 459	49 853	2015-05-06 06:08

DATASET METRICS ACTIVITY **DOWNLOAD**

- GBIF annotated archive *recommended*
- Source archive Darwin Core Archive
- GBIF annotated metadata EML

Source archive Darwin Core Archive

dwca-mamcenpat-v1.1

La colección de mamíferos marinos del Museo Nacional Patagónico (CENPAT) se enmarca en la sección marina de la colección de mamíferos marinos del Museo Nacional Patagónico por material óseo de 7 especies de pinnípedos y 20 de cetáceos recolectados en las costas de Patagonia desde 1970 hasta el presente. Entre sus componentes se destacan los más de 1000 cráneos de lobo marino de un pelo *Otaria flavescens* junto con aproximadamente 40 esqueletos completos. Los pinnípedos incluyen además material de lobos fin... [more](#)

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License: [CC BY 4.0](#)

[How to cite](#) [DOI](#) 10.15468/i2ycus

785 occurrences

100% With taxon match

100% With coordinates

0% With year



¿Cómo armamos el Darwin Core Archive?

¿Cómo llega a estar en los portales de datos?





Herramienta abierta y gratuita que se utiliza para publicar y compartir conjuntos de datos sobre biodiversidad a través de la red de GBIF.

<https://www.gbif.org/ipt>

# IPT: Integrated Publishing Toolkit



- Home
- Manage Resources**
- Administration
- About

## Overview: [colecciondatosparapracticar](#)

This is the overview page for the *colecciondatosparapracticar* resource.

### Source Data

Your source data files and SQL sources for generating a Darwin Core Archive.

No file chosen

### Darwin Core Mappings

Your mapping between the source data and Darwin Core terms.

### Metadata

Your resource metadata.

### Published Versions

A preview of your pending published version compared with the current version if existing.

Auto-publishing

Select interval

Version	Pending version
Visibility	1.0 <input type="button" value="Preview"/>
Data Licence	Private
Published on	-

### Visibility **Private**

This resource is private to managers. To make this resource available to everyone, please make it public.

### Resource Managers

Managers granted permission to modify this resource.

Con IPT se puede:

**Cargar los datos**

# IPT: Integrated Publishing Toolkit



Home

Manage Resources

Administration

About

## Overview: [colecciondatosparapracticar](#)

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Choose File No file chosen

Connect to database Clear

### Darwin Core Mappings

Your mapping between the source data and Darwin Core terms.

⚠

### Metadata

Your resource metadata.

Edit ⚠

### Published Versions

A preview of your pending published version compared with the current version if existing.

Publish ⚠

Auto-publishing

Select interval ⓘ

	Pending version
Version	1.0 <input type="button" value="Preview"/>
Visibility	Private
Data Licence	-
Published on	-

### Visibility **Private**

This resource is private to managers. To make this resource available to everyone, please make it public.

### Resource Managers

Managers granted permission to modify this resource.

Con IPT se puede:

Cargar los datos  
Mapear a Darwin Core

# IPT: Integrated Publishing Toolkit



**TEST MODE**

Home

Manage Resources

Administration

About

**Overview:** [colecciondatosparapracticar](#)

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Edit

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Publish

Auto-publishing

Select interval

Version	Pending version
Visibility	1.0 Preview
Data Licence	Private
Published on	-

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Public

## Resource Managers

Managers granted permission to modify this resource.

Con IPT se puede:

**Cargar los datos**  
**Mapear a Darwin Core**  
**Cargar los metadatos**

# IPT: Integrated Publishing Toolkit



**TEST MODE**

## Overview: [colecciondatosparapracticar](#)

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Auto-publishing

A preview of your pending published version compared with the current version if existing.

Version	1.0	<input type="button" value="Preview"/>
Visibility	Private	
Data Licence	-	
Published on	-	

### Visibility **Private**

This resource is private to managers. To make this resource available to everyone, please make it public.

### Resource Managers

Managers granted permission to modify this resource.

Con IPT se puede:

- Cargar los datos
- Mapear a Darwin Core
- Cargar los metadatos
- Publicar los datos

# IPT: Integrated Publishing Toolkit



**GBIF** INTEGRATED PUBLISHING TOOLKIT (IPT)  
free and open access to biodiversity data

TEST MODE

Logged in as pzymoglio@gmail.com [Account](#) [Logout](#) **ENGLISH**

Home **Manage Resources** Administration About

**Overview:** [colecciondatosparapracticar](#)

This is the overview page for the *colecciondatosparapracticar* resource.

**Source Data** Your source data files and SQL sources for generating a Darwin Core Archive.  
Choose File No file chosen  
Connect to database Clear

**Darwin Core Mappings** Your mapping between the source data and Darwin Core terms.  
[Dropdown] [Warning]

**Metadata** Your resource metadata.  
Edit [Warning]

**Published Versions** A preview of your pending published version compared with the current version if existing.  
Publish [Warning]

Auto-publishing  
Select interval [Dropdown] [Info]

Version	1.0	Pending version
Visibility	Private	[Preview]
Data Licence	-	
Published on	-	

**Visibility *Private*** This resource is private to managers. To make this resource available to everyone, please make it public.  
Public

**Resource Managers** Managers granted permission to modify this resource.  
[Dropdown] Add

Con IPT se puede:

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- Publicar los datos

IPT genera el Darwin Core Archive

# IPT: Integrated Publishing Toolkit



**DATOS**



MAPEO

**IPT**



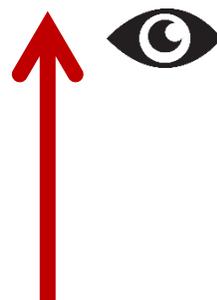
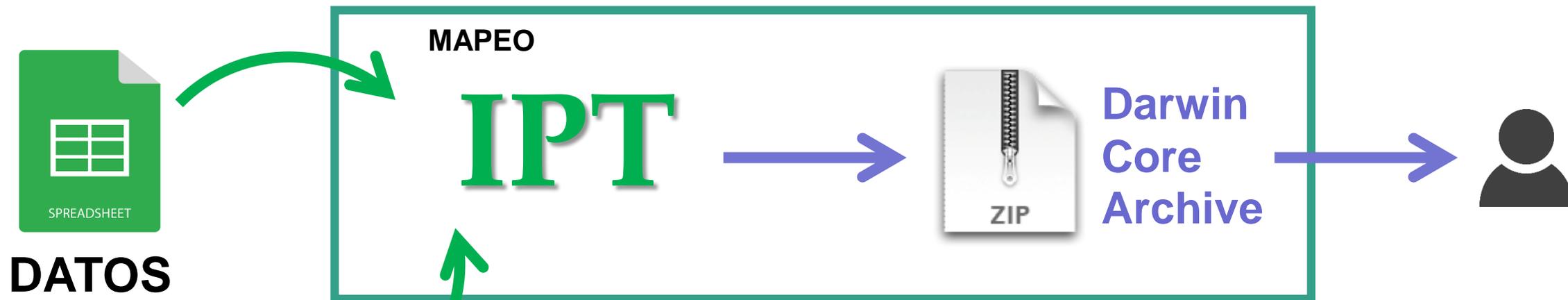
Darwin  
Core  
Archive



**METADATOS**



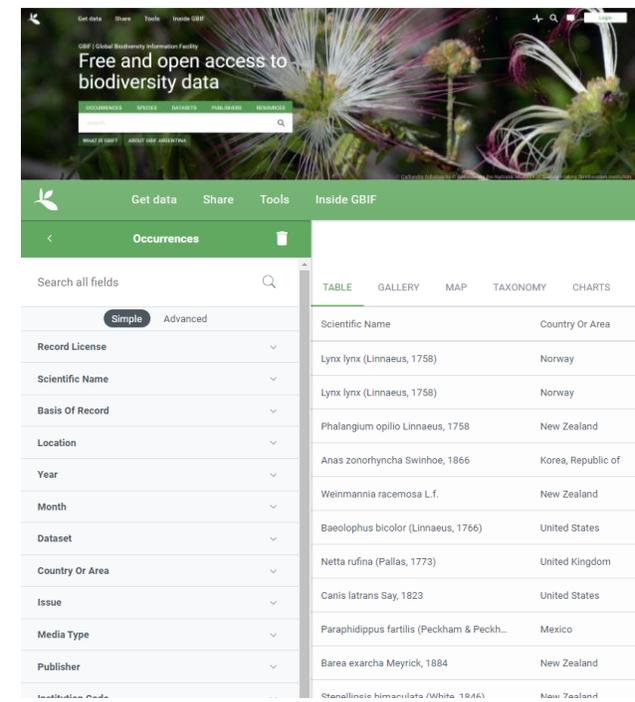
# IPT: Integrated Publishing Toolkit



# GBIF



(Si el proveedor está registrado)



# Gbif.es

¡Gracias!

pzermoglio@gmail.com

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VerNe



Universidad  
de Navarra