The Semantic Underpinnings of EOL TraitBank

Nathan Wilson
Marine Biological Laboratory

All copyrighted text and images not covered by fair use
Creative Commons Attribution 3.0 License

nwilson at eol.org - http://eol.org

Who am I?

- Naturalist
- Mycologist
- Software Professional
- Director of Biodiversity Informatics for EOL

© 2010 Nathan Wilson

nwilson at eol.org - http://eol.org

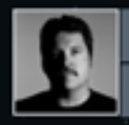
Introducing TraitBank: search millions of data records on EOL • Learn more • Search data

ENGLISH

DISCOVER · HELP · WHAT IS EOL? · EOL NEWS · DONATE

Encyclopedia of Life

Nathan
EOL Director of Biodiversity Informatics
PROFILE · ADMINS · CURATORS · SIGN OUT



20
20

Global access to knowledge about life on Earth

Search EOL ...

GO

Paspalum fimbriatum
Panama Paspalum

EOL News

see more

One Species at a Time Podcast: Chinook Salmon
Freshwater fishes are an integral component of our environment, yet large gaps persist in our scientific knowledge of their diversity, distribution, and ecology. Several conservation groups recently joined forces to announce the first "... more

Community Activity

see more

Peter Mangiafico set "Image of *Canis familiaris*" as an exemplar on "*Canis lupus familiaris* Linnaeus, 1758".
ABOUT 2 HOURS AGO

Scientific Names

- **Homonyms**

Aotus

- **Synonyms:**
  Lepista nuda, Rhodopaxillus nudus, Tricholoma nudum, Cortinarius nudus, Clitocybe nuda, Tricholoma personatum, Agaricus nudus

© 2009 Dan Molter

Changing Definitions

© 2013 Martin Livezey

© 2011 Morganella

TraitBank Search Results

download data

758 results for *Cell shape* within Bacillariophyta

Select an attribute Cell shape Show search options

search

Selected search options—Taxon group: Bacillariophyta

Cell shape

The approximate three dimensional shape of a cell, described as one or more geometric solids.

http://purl.obolibrary.org/obo/OBA_0000052

explore full data glossary

Displaying 1 – 30 of 758 records on EOL

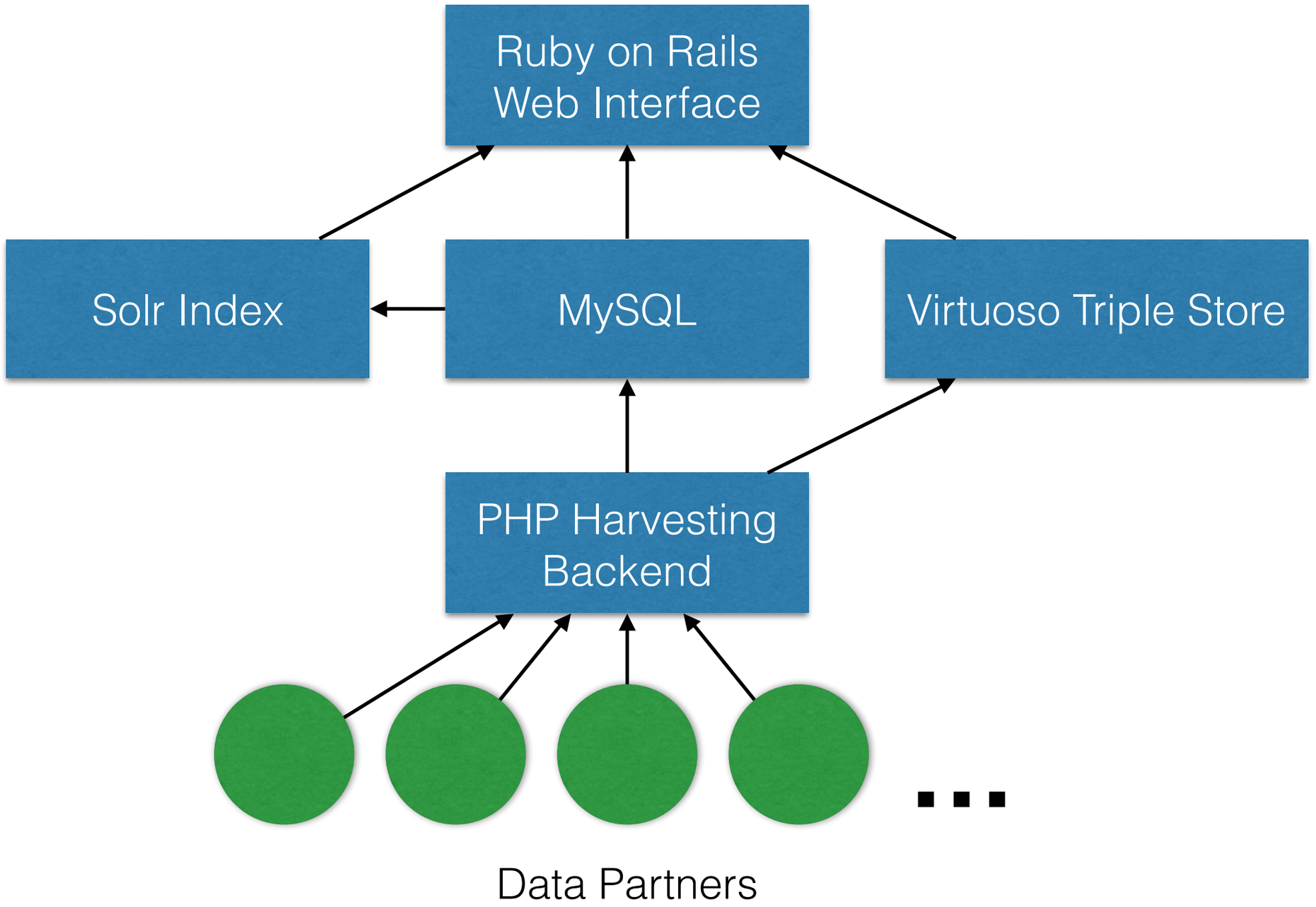
see next 30

	Hannaea arcus	Cell shape	▹ sickle-shaped prism	Leblanc et al, …
	Diploneis	Cell shape	▿ rotational ellipsoid	Olenina et al, …

Data about this record

Source	http://epic.awi.de/30141/1/bsep106.pdf
Citation	Olenina, I., Hajdu, S., Edler, L., Andersson, A., Wasmund, N., Busch, S., Göbel, J., Gromisz, S., Huseby, S., Huttunen, M., Jaanus, A., Kokkonen, P., Ledaine, I. and Niemkiewicz, E. 2006. Biovolumes and size-classes of phytoplankton in the Baltic Sea. HELCOM Balt.Sea Environ. Proc. No. 106, 144pp.
Individual Count	>=25
Locality	Baltic Sea
Event Date	1980-2006
Sampling Protocol	standard HELCOM (1988) methods. HELCOM, 1988. Guidelines for the Baltic Monitoring Programme for the third stage. Part D. Biological determinands. Balt. Sea Environ. Proc. 27 D, 161 pp.
Link to this record	http://eol.org/pages/11733/data#data_point_2966128

TraitBank Architecture



http://eol.org/pages/328615/overview

Zalophus californianus

California Sea Lion learn more about names for this taxon

add to a collection

reindex page

Tweet 5 Like 4

Overview | Detail | Data | 413 Media | 8 Maps | Names | Community | Resources | Literature | Updates | Worklist

Zalophus californianus TRUSTED

(cc) BY-NC-SA © CONABIO

Source: Conabio

see all media
see all maps

EOL has data for 32 traits see all

Habitat	bay biome coastal water more
Body length (VT)	2.02 m (average, adult)
Body mass	137.19 kg (average, adult) 6.35 kg (average, newborn animal) 20.2 kg (average, weanling)
Brood/litter size	1.2 1.41 individuals (average)
Behavioral circadian rhythm	Nocturnal/crepuscular, cathemeral, crepuscular or diurnal/crepuscular
Gestation period duration	349.99 days (average)
Habitat breadth	2
Inter-birth interval	1.5 years (average, female)

http://eol.org/pages/328615/data

Zalophus californianus

California Sea Lion learn more about names for this taxon

add to a collection

reindex page

Tweet 0 Like 0

Overview | Detail | Data | 413 Media | 8 Maps | Names | Community | Resources | Literature | Updates | Worklist

All

Distribution

Physical Description

Ecology

Life History and Behavior

Physiology and Cell Biology

Conservation

Glossary

About

TraitBank assembles data records from many providers. Select a row for more details about the record, or search within *Zalophus californianus*.

Distribution

Latitude (min)	▹ 21.99 degrees	OBIS Environmental Information
(max)	▹ 48.2 degrees	OBIS Environmental Information
Longitude (min)	▹ -129 degrees	OBIS Environmental Information
(max)	▹ -82.7 degrees	OBIS Environmental Information
Geographic distribution	▹ East North Pacific	World Register of Marine Spe…
	▹ Gulf of Mexico	World Register of Marine Spe…

http://eol.org/pages/328615/data

Seawater O2 saturation (max)	▹ 105.46 percent	OBIS Environmental Information
(min)	▹ 35.49 percent	OBIS Environmental Information
Has predator	▹ Bull Shark	Global Biotic Interactions
	▹ Great White Shark	Global Biotic Interactions
	▹ Killer Whale	Global Biotic Interactions
Seawater salinity (min)	▹ 30.38 PSU	OBIS Environmental Information
(max)	▹ 35.3 PSU	OBIS Environmental Information

http://eol.org/pages/224769/data

Carcharhinus leucas

Bull Shark learn more about names for this taxon

add to a collection

reindex page

Tweet 0 Like 0

Overview | Detail | Data | 48 Media | 7 Maps | Names | Community | Resources | Literature | Updates | Worklist

All

Distribution

Physical Description

Ecology

Life History and Behavior

Glossary

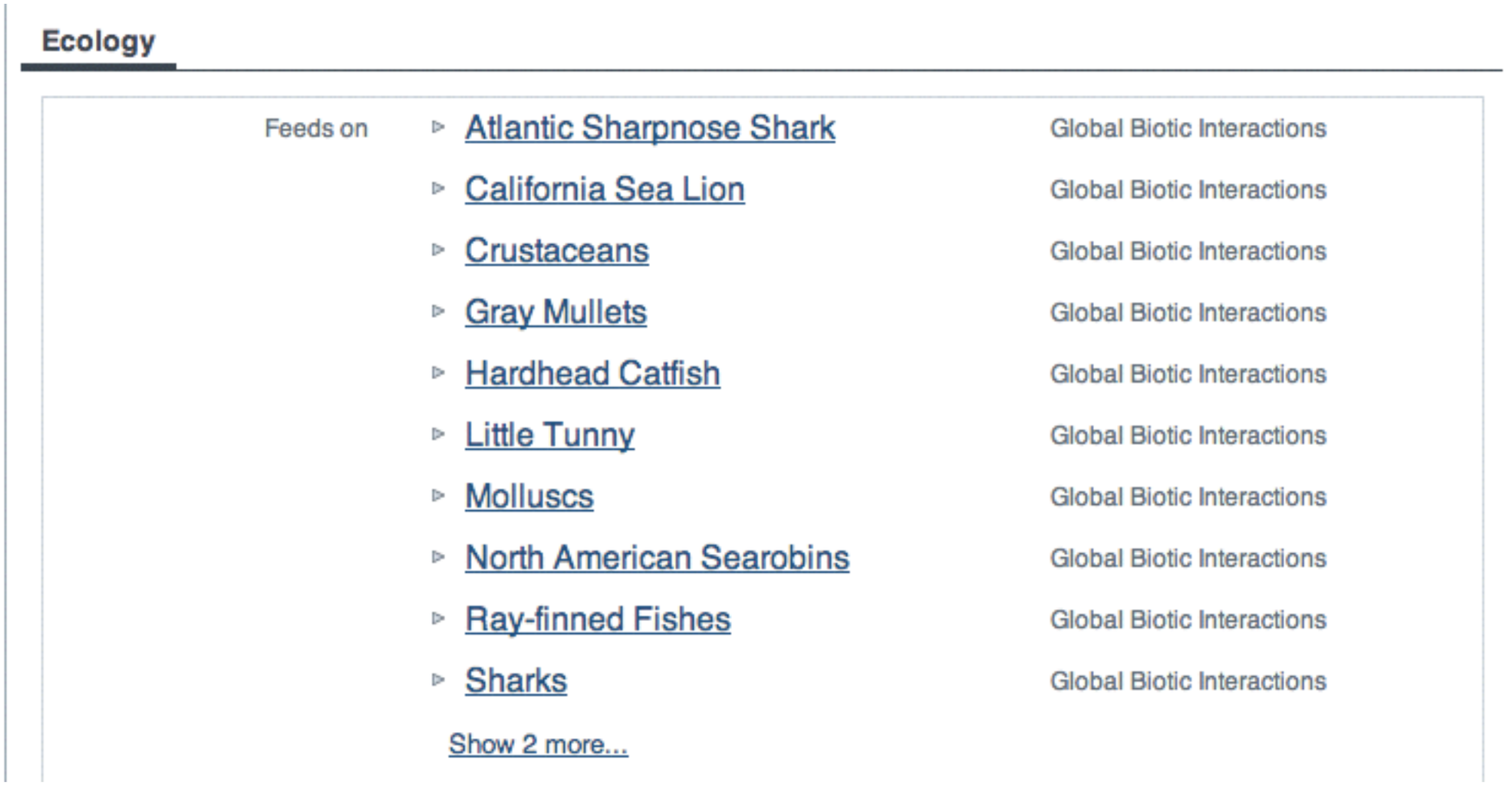
About

TraitBank assembles data records from many providers. Select a row for more details about the record, or search within *Carcharhinus leucas*.

Distribution

Latitude (min)	-35.9 degrees	OBIS Environmental Information
(max)	39.53 degrees	OBIS Environmental Information
Longitude (min)	-116 degrees	OBIS Environmental Information
(max)	153.25 degrees	OBIS Environmental Information
Geographic distribution	Azores Exclusive Economic Zone	World Register of Marine Spe…
	European waters (ERMS scope)	World Register of Marine Spe…
	Gulf of Mexico	World Register of Marine Spe…

http://eol.org/pages/224769/data



http://eol.org/known_uris
(admins only)

URIs for Data on EOL

measurements | associations | values | metadata

Previous 1 2 3 4 Next

URI	Name	Type of URI	Categories	Actions
http://purl.obolibrary.org/obo/TO_0000537	Flower color	measurement	Physical Description	edit • delete • recommend term
http://purl.obolibrary.org/obo/TO_0000326	Leaf color	measurement	Physical Description	edit • delete • recommend term
http://eol.org/schema/terms/FruitSeedColor	Fruit or seed color	measurement	Physical Description	edit • delete • recommend term
http://eol.org/schema/terms/PlantHabit	Plant growth habit	measurement	Physical Description	edit • delete • recommend term

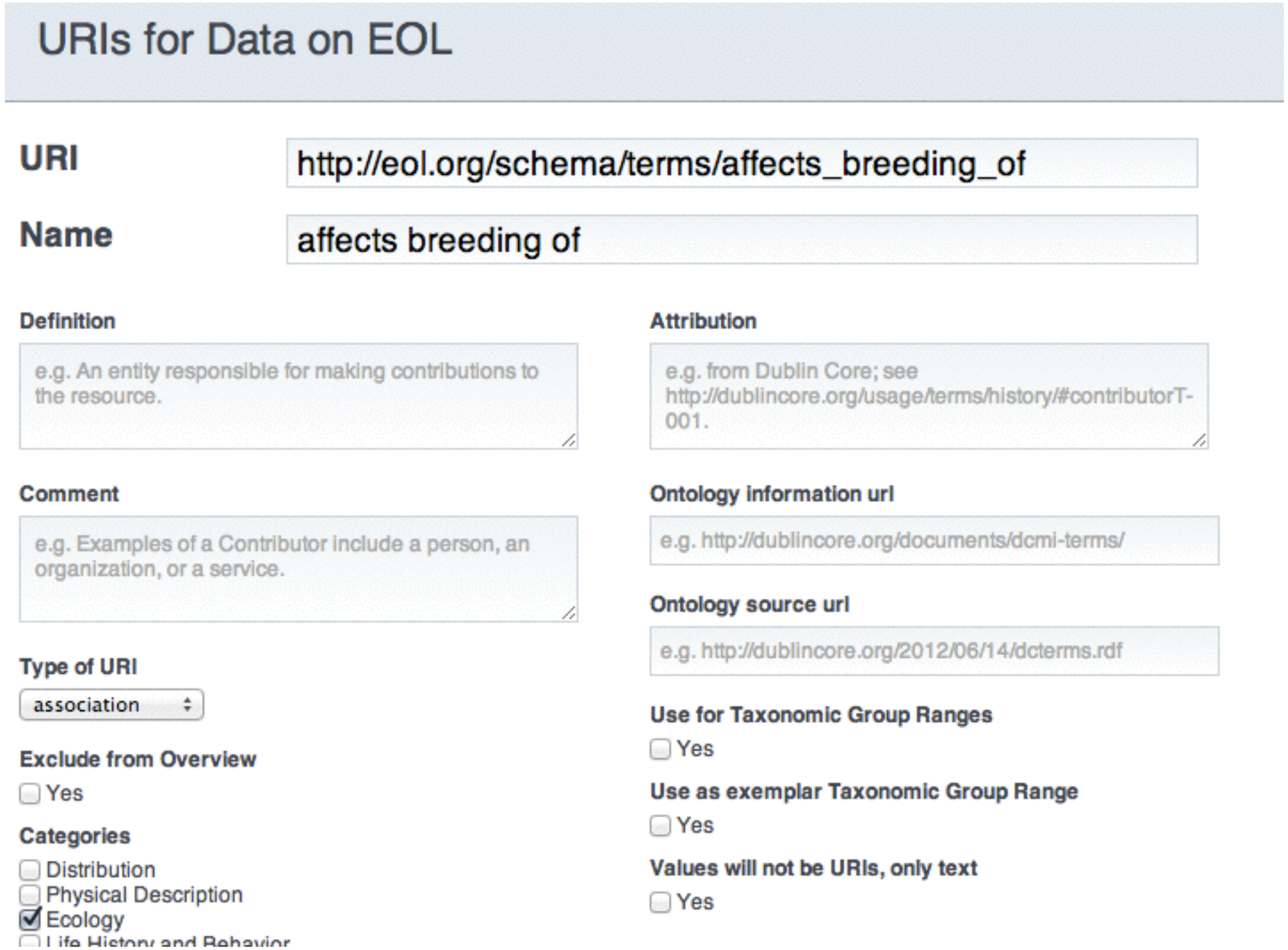
http://eol.org/known_uris
(admins only)

URIs for Data on EOL

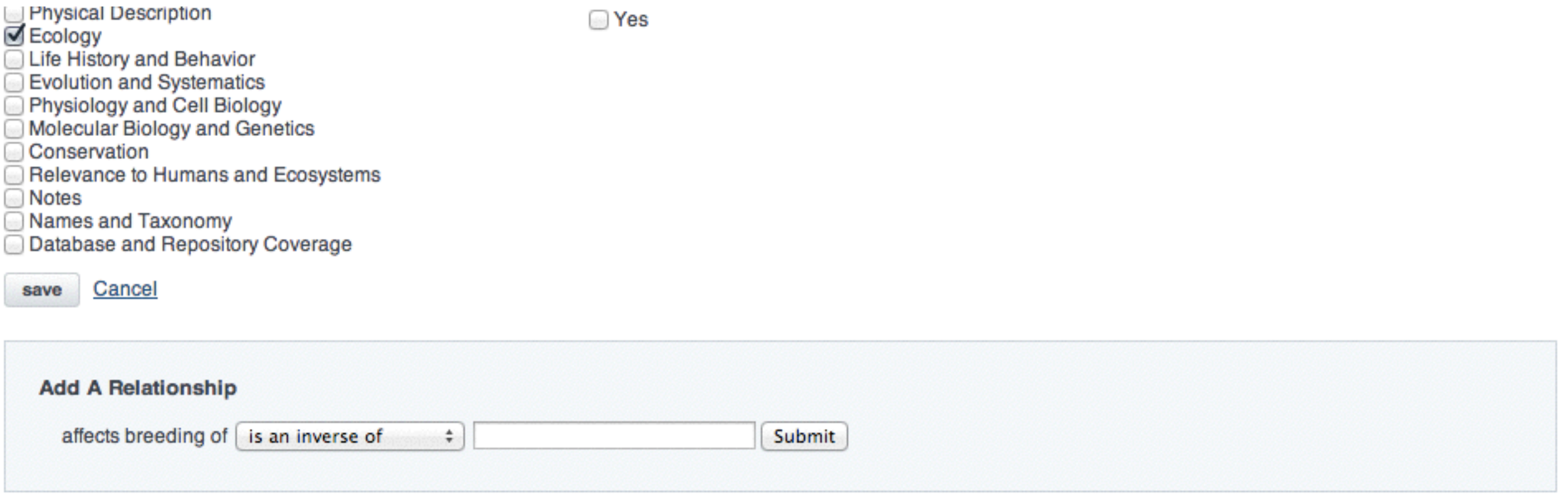
measurements | **associations** | values | metadata

URI	Name	Type of URI	Categories	Actions
http://eol.org/schema/terms/affects_breeding_of	affects breeding of	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/interactsWith	interacts with	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/hosts	hosts	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/hasHost	has host	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/hasPollinator	has pollinator	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/preysUpon	preys upon	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/eats	feeds on	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/isFoundOn	is found on	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/parasitizes	parasitizes	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/hasParasite	has parasite	association	Ecology	edit • delete • recommend term
http://eol.org/schema/terms/pollinates	pollinates	association	Ecology	edit • delete • recommend term

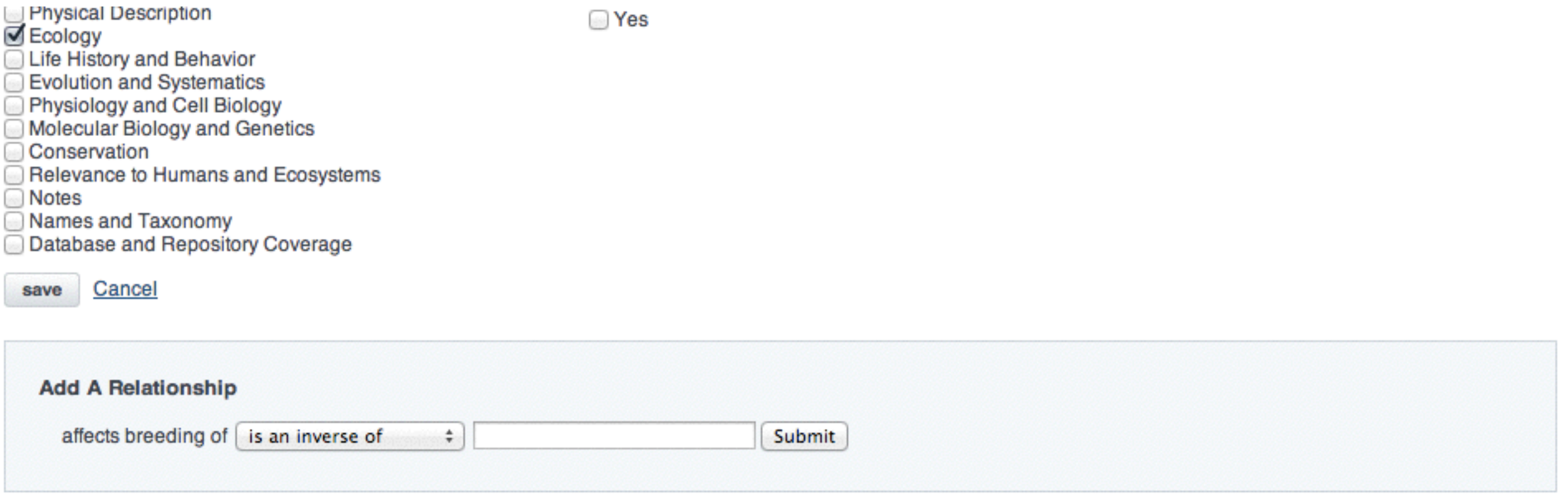
http://eol.org/known_uris
(admins only)



http://eol.org/known_uris
(admins only)



http://eol.org/known_uris
(admins only)



http://eol.org/data_search?attribute=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FVT_0001256&sort=desc

TraitBank Search Results

7553 results for *Body length (VT)*

download data

Select an attribute Body length (VT) Show search options search

Body length (VT)

The distance from point to point along the longest axis of the body of an organism.

http://purl.obolibrary.org/obo/VT_0001256

explore full data glossary

Displaying 1 – 30 of 7553 records on EOL see next 30

	Balaenoptera musculus Blue Whale	Body length (VT) (average)	30.48 m (adult)	PanTHERIA
	Balaenoptera physalus Fin Whale	Body length (VT) (average)	20.64 m (adult)	PanTHERIA

http://eol.org/data_glossary

Data Glossary

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Filter by subject

- Distribution
- Physical Description
- Ecology
- Life History and Behavior
- Evolution and Systematics
- Physiology and Cell Biology
- Molecular Biology and Genetics
- Conservation
- Relevance to Humans and Ecosystems
- Notes
- Names and Taxonomy
- Database and Repository Coverage

To contribute new terms to this glossary, consider uploading data.

A

Above ground dwelling

An organism that spends most of its time above ground.

http://eol.org/schema/terms/aboveGroundDwelling

link to this term • top

Abyssal zone (4000-6000m)

http://polytraits.lifewatchgreece.eu/terms/DZ_ABY

link to this term • top

TraitBank Ontologies

- Environment Ontology - http://purl.obolibrary.org/obo/envo.owl
- Plant Trait Ontology - http://purl.obolibrary.org/obo/to.owl
- Phenotypic Quality Ontology - http://purl.obolibrary.org/obo/pato.owl
- Units of Measure - http://purl.obolibrary.org/obo/uo.owl
- Terms from Darwin Core - http://www.tdwg.org/standards/450/
- Custom EOL - e.g., http://eol.org/schema/terms/FruitSeedColor

Contributing

- Names, Images, Text:
  http://eol.org/info/contribute

- Semantic Data:
  http://eol.org/contact_us?subject=Contribute

- Darwin Core Archive Format:
  http://www.gbif.org/resources/2551

Getting Data

- UI for exploration
- Data Downloads
  - Preferred by current scientific community
  - Easy to cache

Future Development

- Keep Focus on Downloads
  - All Attributes for a Taxon
  - Multiple Selected Attributes
- User Added Data Later

Thanks!

- Sloan Foundation
- Marine Biological Laboratory
- Patrick Leary, Anthony Goddard, Jeremy Rice, Kristen Lans, Bob Corrigan, Cyndy Parr, Katja Schultz, Jen Hammock, Marie Studer

© 2002 Nathan Wilson