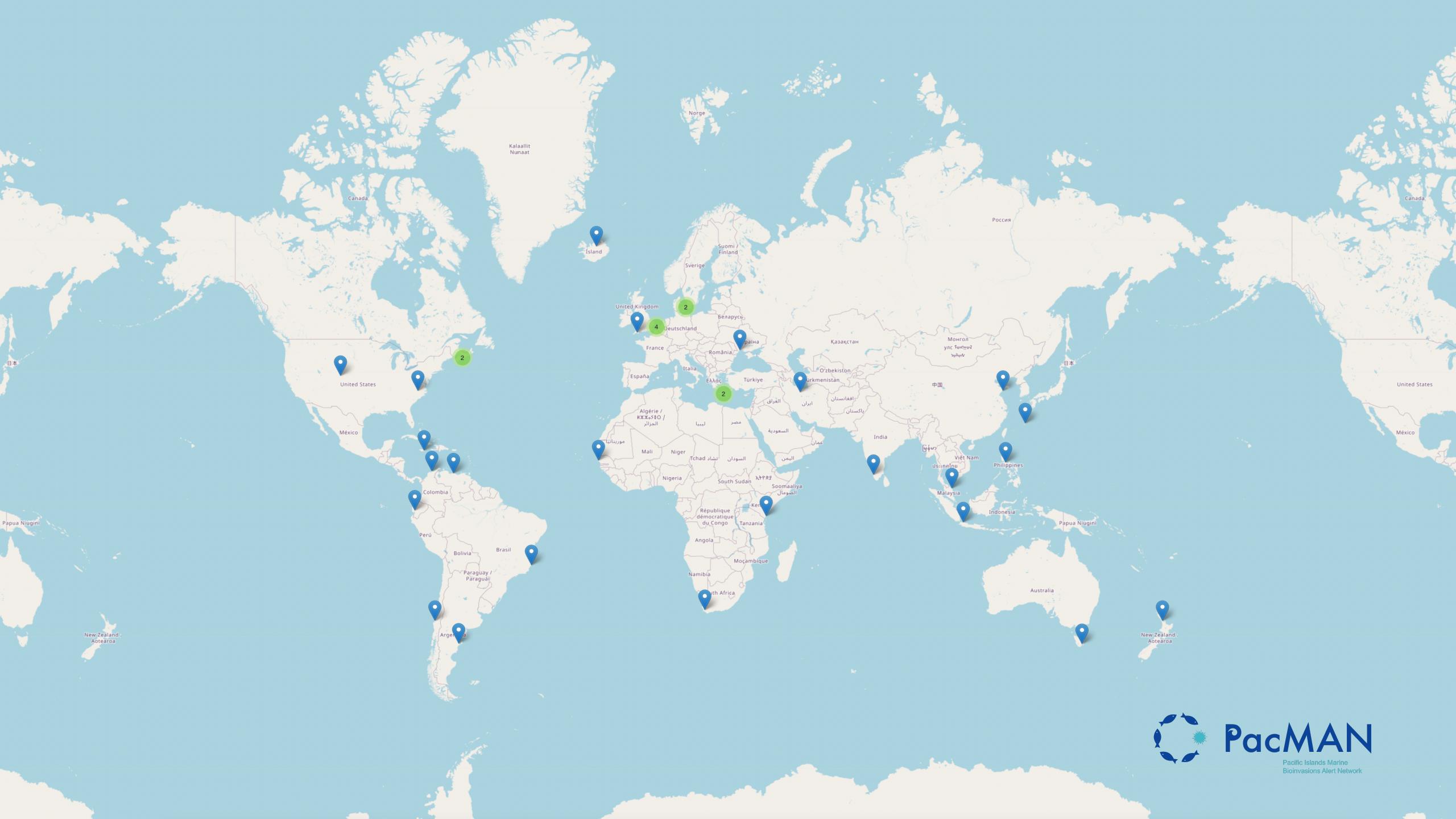


OBIS, data standards, and data management

Ocean Biodiversity Information System (OBIS)

- Established in 2000 as the data system for the Census of Marine Life
- Since 2009 under IOC-UNESCO's International Oceanographic Data and Information (IODE) programme
- 26 regional and 7 thematic nodes
- Secretariat based in Ostend, Belgium



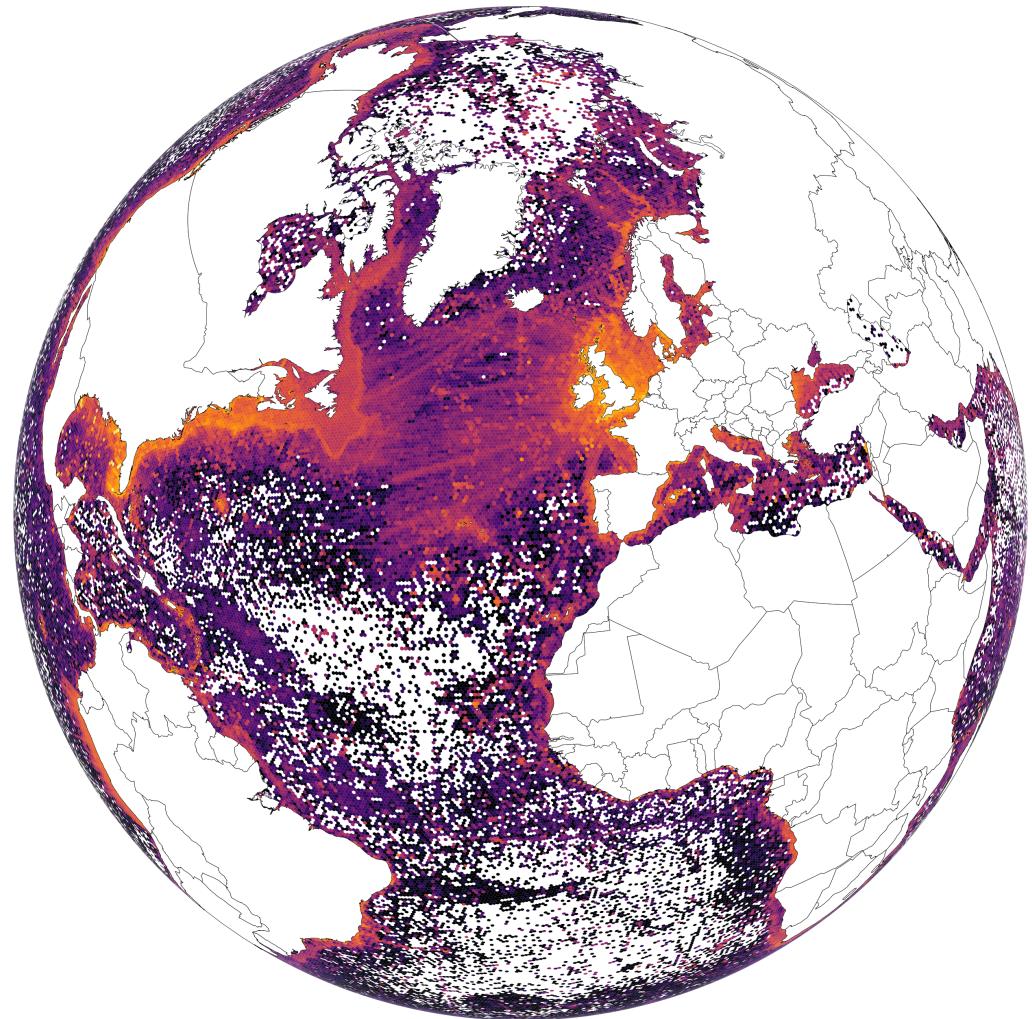


PacMAN

Pacific Islands Marine
Bioinvasions Alert Network

Number of species

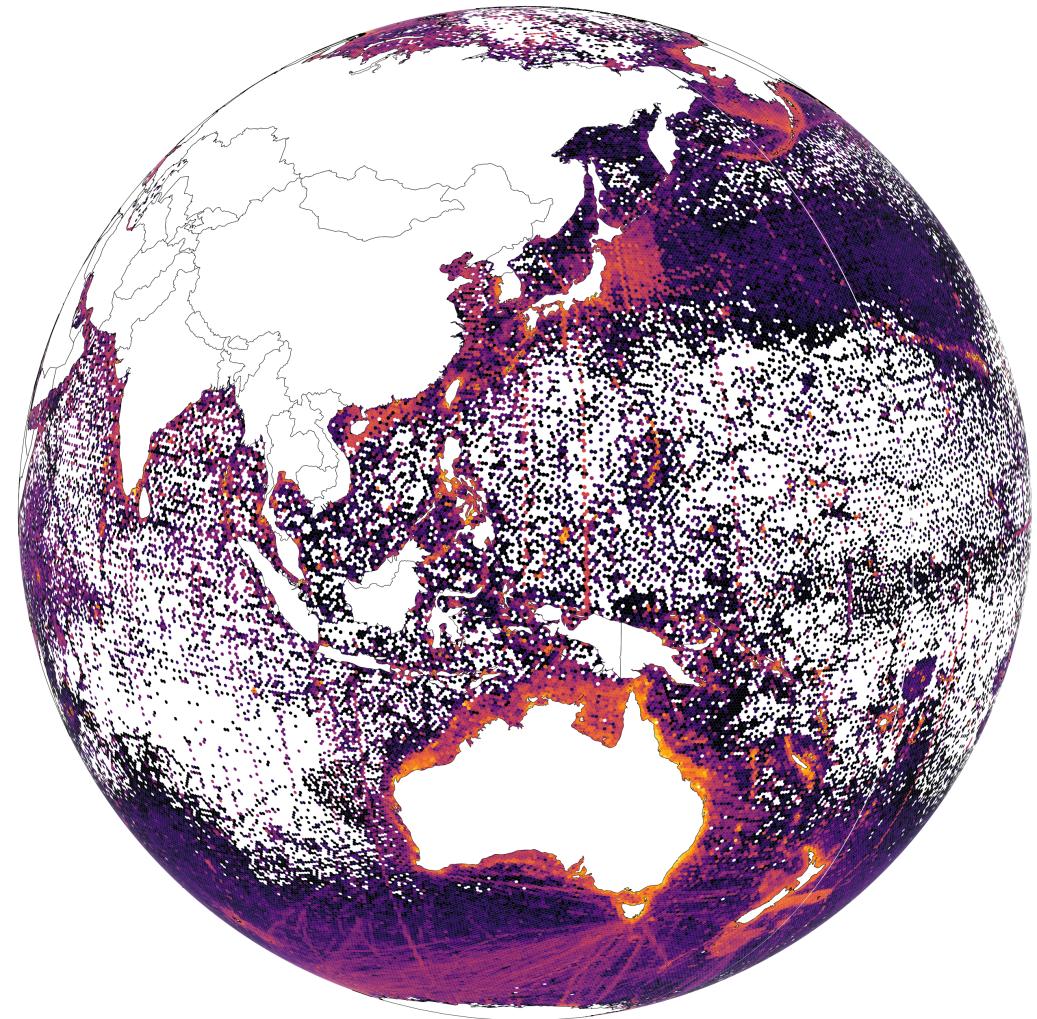
Number of species per H3 grid cell of resolution 4 (on average 1,770 square km)



Species richness
1 10 100 1,000

Number of species

Number of species per H3 grid cell of resolution 4 (on average 1,770 square km)



Species richness
1 10 100 1,000



PacMAN

Pacific Islands Marine
Bioinvasions Alert Network

Data sharing

- Visibility for researchers and donors
- Make research transparent and reproducible
- Create opportunities for collaboration
- Incentive to improve data management and quality
- More efficient use of resources
- Greater impact and ROI
- Support meta-analyses, trend discovery
- Identify knowledge gaps
- Required by funding agencies and journals

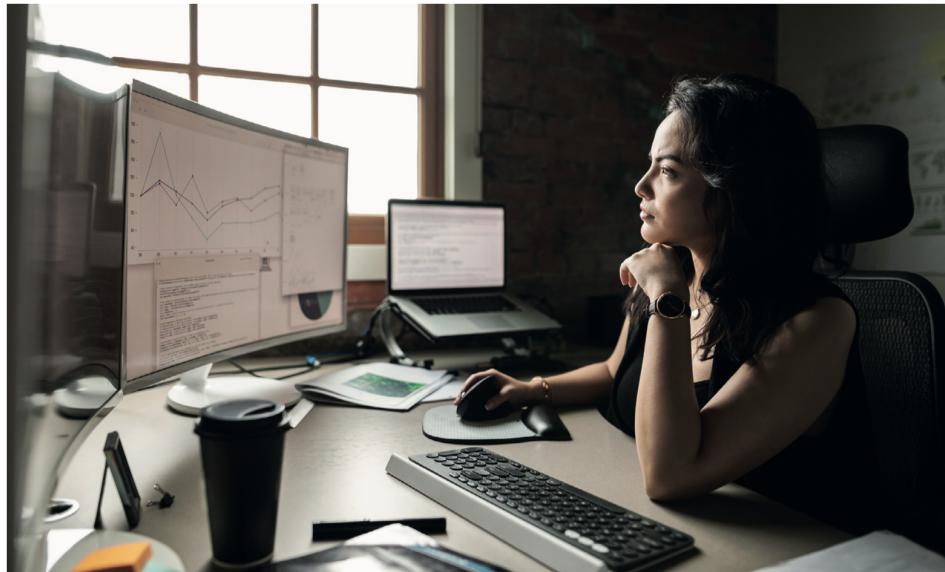
CAREERS

MYSTERY WRITER Postdocs routinely ghostwrite peer reviews go.nature.com/2pwsjov

NO EXCUSE Database of female scientists could help end ‘manels’ go.nature.com/2px8uyv

ONLINE Career resources from our community at nature.com/careers

HERO IMAGES/GETTY



Data sharing can be complex for scientists to navigate, but the rewards are often career-enhancing.

OPEN SCIENCE

Setting your data free

As science becomes more open, researchers who share data are reaping the benefits.

BY GABRIEL POPKIN

Ecologist Thomas Crowther knew that scientists had already collected a vast amount of field data on forests worldwide. But almost all of those data were sequestered in researchers' notebooks or personal computers, making them unavailable to the wider scientific community. In 2012, Crowther, then a postdoctoral researcher at Yale University in New Haven, Connecticut, began to e-mail and cold-call researchers to request their data. He started to assemble an inventory, now hosted by the Global Forest Biodiversity Initiative, an international research collaboration, that contains data on more than 1 million locations. Data are stored

in CSV files (plain-text files that contain a list of data) on servers at Crowther's present laboratory at the Swiss Federal Institute of Technology in Zurich and on those of a collaborator at Purdue University in West Lafayette, Indiana; he hopes to outsource database storage to a third-party organization with expertise in archiving and access.

After years of courting and cajoling, Crowther has persuaded about half of the data owners to make their data public. The other half, he laments, say that they support open data in principle, but have specific reasons for keeping their data sets private. Mainly, he explains, they want to use their data to conduct and publish their own studies.

Crowther's database challenges reflect the

current state of science: partly open, partly closed, and with unclear and inconsistent policies and expectations on data sharing that are still in flux. High-level bodies such as the US National Academies of Sciences, Engineering, and Medicine and the European Commission have called for science to become more open and endorsed a set of data-management standards known as the FAIR (findable, accessible, interoperable and reusable) principles. Government funding agencies in the United States, Europe and Australia require researchers to devise plans for data management and, in some cases, data sharing; some private funders also require them. Many journals, including *Nature*, have adopted policies that encourage or require authors to ▶

nature

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CAREER FEATURE | 13 May 2019

Data sharing and how it can benefit your scientific career

Open science can lead to greater collaboration, increased confidence in findings and goodwill between researchers.

Potential global distribution of a temperate marine coastal predator: The role of barriers and dispersal corridors on subpopulation connectivity

Agustín M. De Wysiecki ^{1*} Federico Cortés  Andrés J. Jaureguizar  Adam Barnett 

¹Centro Para el Estudio de Sistemas Marinos, Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Puerto Madryn, Chubut, Argentina

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³Comisión de Investigaciones Científicas de la Provincia de Buenos Aires (CIC), La Plata, Buenos Aires, Argentina

⁴Instituto Argentino de Oceanografía (IADO), Bahía Blanca, Buenos Aires, Argentina

⁵Universidad Provincial del Sudoeste (UPSO), Coronel Pringles, Buenos Aires, Argentina

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⁷College of Science and Engineering, James Cook University, Townsville, Queensland, Australia



ARTICLE

Check for updates

<https://doi.org/10.1038/s41467-022-28488-1>

OPEN

Global patterns in functional rarity of marine fish

Isaac Trindade-Santos ^{1✉}, Faye Moyes ¹ & Anne E. Magurran ¹



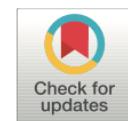
Contents lists available at [ScienceDirect](#)

Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv



Forecasting shifts in habitat suitability across the distribution range of a temperate small pelagic fish under different scenarios of climate change



André R.A. Lima ^{a,b,*}, Miguel Baltazar-Soares ^{a,b}, Susana Garrido ^{b,c}, Isabel Riveiro ^d, Pablo Carrera ^d, A. Miguel Piecho-Santos ^{c,e}, Myron A. Peck ^f, Gonçalo Silva ^{a,b}

^a ISPA – University Institute, Department of Biosciences, Rua jardim do tabaco, 34, 1149-041 Lisbon, Portugal

^b MARE - Marine and Environmental Sciences Centre, Rua da Matemática, 49, 3004-517 Coimbra, Portugal

^c Portuguese Institute for the Sea and the Atmosphere – IPMA, Av. Doutor Alfredo Magalhães Ramalho, 6, 1495-165 Algés, Portugal

^d IEO - Instituto Español de Oceanografía, Subida a Radio Faro 50, 36390 Vigo, Spain

^e Centre of Marine Sciences of the University of Algarve (CCMAR), Campus de Gambelas, 8005-139 Faro, Portugal

^f NIOZ - Royal Netherlands Institute for Sea Research, Department of Coastal Systems (COS), PO Box 59, 1790 AB Den Burg, Texel, the Netherlands

Received: 7 March 2021 | Revised: 31 July 2021 | Accepted: 14 September 2021

DOI: 10.1111/geb.13414

RESEARCH ARTICLE

Global Ecology
and Biogeography

A Journal of
Macroecology

WILEY

Cold-water species deepen to escape warm water temperatures

Shahar Chaikin¹  | Shahar Dubiner¹  | Jonathan Belmaker^{1,2} 

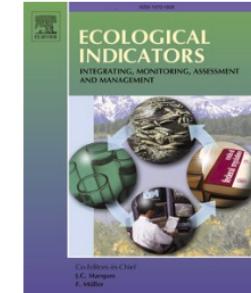


ELSEVIER

Contents lists available at [ScienceDirect](#)

Ecological Indicators

journal homepage: www.elsevier.com/locate/ecolind



Original Articles

Predicting the habitat suitability for populations of Pacific cod under different climate change scenarios considering intraspecific genetic variation



Linjie Li ^a, Linlin Zhao ^b, Jinbo Fu ^a, Bin Sun ^a, Changdong Liu ^{a,*}

^a Department of Fisheries, Ocean University of China, Qingdao, Shandong, China

^b First Institute of Oceanography, Ministry of Natural Resources, Qingdao, Shandong, China

CORRECTED PROOF

Research Article

Ecological niche dynamics of three invasive marine species under the conservatism and shift niche hypotheses

Reinaldo Rivera^{1,2,*}, Javier Pinochet^{4,5} and Antonio Brante^{3,4}

¹*Millennium Institute of Oceanography (IMO), Universidad de Concepción, Casilla 160-C, Concepción, Chile*

²*Laboratorio de Ecología Evolutiva y Filoinformática. Departamento de Zoología, Facultad de Ciencias Naturales y Oceanográficas, Universidad de Concepción. Casilla 160-C, Concepción, Chile*

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⁴*Departamento de Ecología, Facultad de Ciencias, Universidad Católica de la Santísima Concepción, Concepción, Chile*

⁵*Programa de Doctorado en Sistemática y Biodiversidad, Facultad de Ciencias y Oceanográficas, Universidad de Concepción, Concepción, Chile*

*Corresponding author

E-mail: reijavier@gmail.com

JOURNAL ARTICLE

The spread of Lessepsian fish does not track native temperature conditions Get access >

Manuela D'Amen , Sonia Smeraldo, Antonio Di Franco, Ernesto Azzurro

ICES Journal of Marine Science, Volume 79, Issue 6, August 2022, Pages 1864–1873, <https://doi.org/10.1093/icesjms/fsac121>

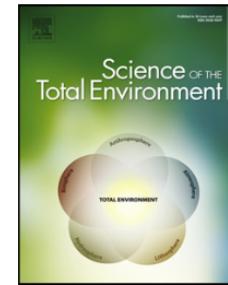
Published: 07 July 2022 **Article history ▾**



Contents lists available at ScienceDirect

Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv



A new look at the potential role of marine plastic debris as a global vector of toxic benthic algae



Isabel do Prado Leite ^{a,*}, André Menegotto ^b, Paulo da Cunha Lana ^a, Luiz Laureno Mafra Júnior ^a

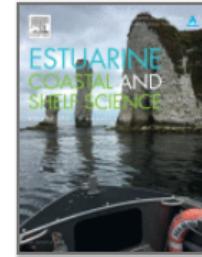
^a Center for Marine Studies, Federal University of Paraná, Av. Beira-mar, s/n, Pontal do Paraná, PR 83255-976, Brazil

^b Department of Ecology, Federal University of Goiás, Av. Esperança, s/n, Campus Samambaia, Goiânia, GO 74690-900, Brazil



Estuarine, Coastal and Shelf Science

Volume 272, 5 August 2022, 107883



Disembarking in port: Early detection of the ascidian *Ascidia scabra* (Müller, 1776) in a SW Atlantic port and forecast of its worldwide environmental suitability

Anabela Taverna ^{a, b}  , Paola B. Reyna ^{a, b}  , Diego R. Giménez ^{a, b}, Marcos Tatián ^{a, b}

The FAIR Guiding Principles for scientific data management and stewardship

“ There is an **urgent need to improve the infrastructure supporting the reuse of scholarly data**. A diverse set of stakeholders—representing academia, industry, funding agencies, and scholarly publishers—have come together to design and jointly endorse a concise and measureable set of principles that we refer to as the FAIR Data Principles. The intent is that these may act as a **guideline for those wishing to enhance the reusability of their data holdings**.

Findable

- (meta)data are assigned a **globally unique and persistent identifier**
- data are described with rich metadata
- metadata clearly and explicitly include the identifier of the data it describes
- (meta)data are registered or **indexed in a searchable resource**

Accessible

- (meta)data are retrievable by their identifier using a **standardized communications protocol**
- the **protocol is open, free**, and universally implementable
- the protocol allows for an authentication and authorization procedure, where necessary
- metadata are accessible, even when the data are no longer available

Interoperable

- (meta)data use a formal, accessible, shared, and **broadly applicable language for knowledge representation**.
- (meta)data use **vocabularies** that follow FAIR principles
- (meta)data include qualified references to other (meta)data

Reusable

- meta(data) are richly described with a plurality of accurate and relevant attributes
- (meta)data are released with a clear and accessible **data usage license**
- (meta)data are associated with **detailed provenance**
- (meta)data meet **domain-relevant community standards**

Data standards

Ecological Metadata Language (EML)

“ The Ecological Metadata Language (EML) defines a comprehensive vocabulary and a readable XML markup syntax for documenting research data. EML is a community-maintained specification, and evolves to meet the data documentation needs of researchers who want to openly document, preserve, and share data and outputs. ”

<https://eml.ecoinformatics.org/>

Darwin Core

“ Darwin Core is a standard maintained by the Darwin Core Maintenance Interest Group. It **includes a glossary of terms** (in other contexts these might be called properties, elements, fields, columns, attributes, or concepts) intended to facilitate the sharing of information about biological diversity by providing identifiers, labels, and definitions. ”

<https://dwc.tdwg.org/>

Quick reference guide

<https://dwc.tdwg.org/terms/>

Darwin Core quick reference guide

This document is intended to be an easy-to-read reference of the currently (as of 2021-07-15) recommended terms maintained as part of the Darwin Core standard and is maintained by the Darwin Core Maintenance Group.

This page is not part of the standard, but combines the normative term names and definitions with the non-normative comments and examples that are meant to help people to use the terms consistently. Capitalized terms, such as Occurrence, are Darwin Core classes, which are special category terms used to group sets of terms for convenience. Comprehensive metadata for current and obsolete terms in human readable form are found in the document [List of Darwin Core terms](#).

Additional files with just the current term names and a file with the full term history can be found in the [Darwin Core repository](#).

For inquiries about how to use Darwin Core, either enter an issue in the [Darwin Core Questions & Answers site](#) or enter an issue in the [alternative form](#), which will have the same effect. See the bottom of this document for how to [cite Darwin Core](#).

Record-level

This category contains terms that are generic in that they might apply to any type of record in a dataset.

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

type		Property
Identifier	http://purl.org/dc/elements/1.1/type	
Definition	The nature or genre of the resource.	
Comments	Must be populated with a value from the DCMI type vocabulary (http://dublincore.org/documents/2010/10/11/dcmi-type-vocabulary).	
Examples	StillImage , MovingImage , Sound , PhysicalObject , Event , Text	

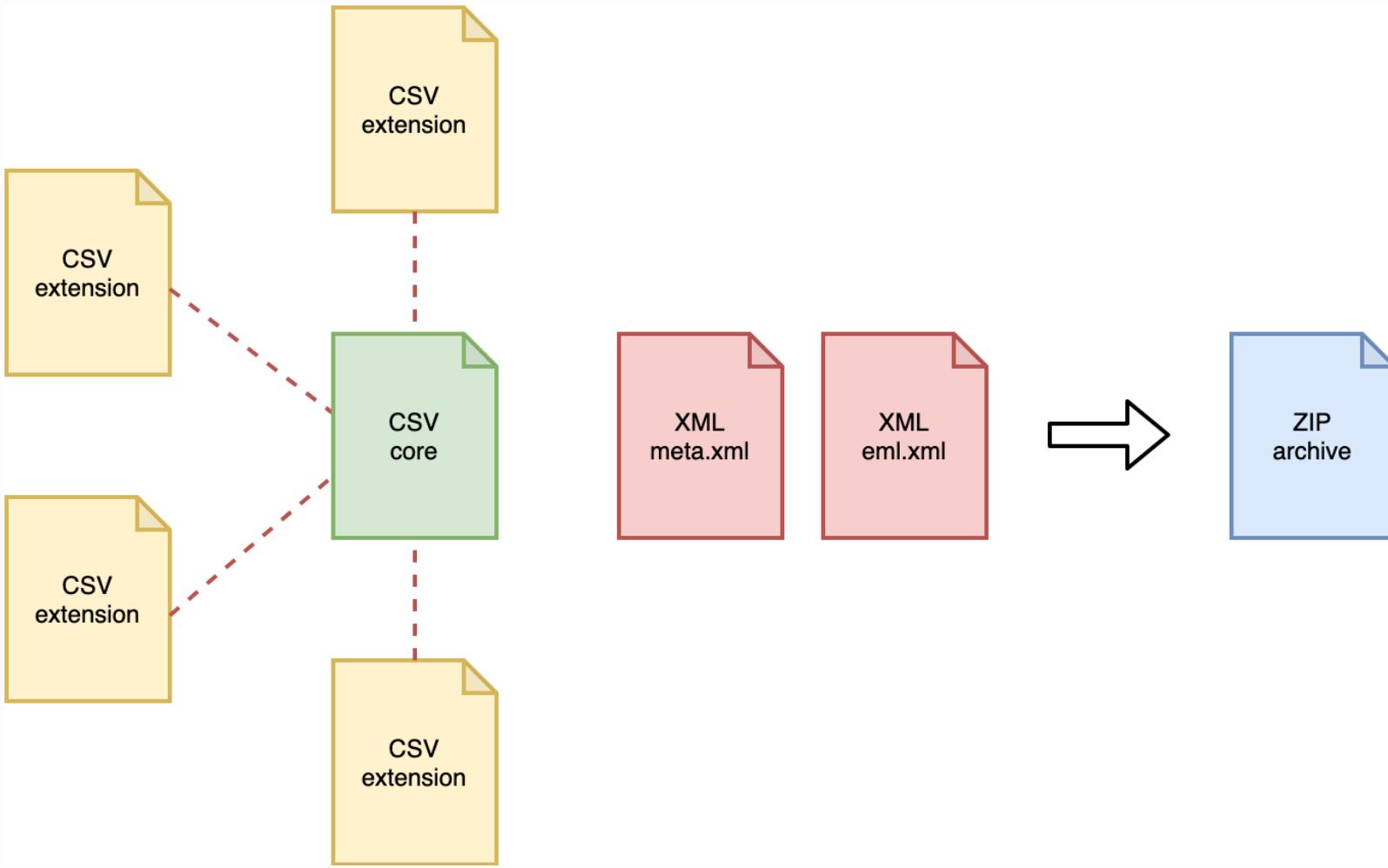
modified		Property
Identifier	http://purl.org/dc/terms/modified	
Definition	The most recent date-time on which the resource was changed.	
Comments	Recommended best practice is to use a date that conforms to ISO 8601-1:2019.	
Examples	1963-03-08T14:07-0600 (8 Mar 1963 at 2:07pm in the time zone six hours earlier than UTC). 2009-02-20T08:40Z (20 February 2009 8:40am UTC). 2018-08-29T15:19 (3:19pm local time on 29 August 2018). 1809-02-12 (some time during 12 February 1809). 1906-06 (some time in June 1906). 1971 (some time in the year 1971). 2007-03-01T13:00:00Z/2008-05-11T15:30:00Z (some time during the interval between 1 March 2007 1pm UTC and 11 May 2008 3:30pm UTC). 1900/1909 (some time during the interval between the beginning of the year 1900 and the end of the year 1909). 2007-11-13/15 (some time in the interval between 13 November 2007 and 15 November 2007).	

Record-level
 Occurrence
 Organism
 MaterialSample
 Event
 Location
 GeologicalContext
 Identification
 Taxon
 MeasurementOrFact
 ResourceRelationship
 UseWithIRI

LivingSpecimen
 PreservedSpecimen
 FossilSpecimen
 MaterialCitation
 HumanObservation
 MachineObservation

Text guide

<https://dwc.tdwg.org/text/>





Repository of Schemas

This site contains technical GBIF resources including XML schemas, Darwin Core Archive/IPT extensions and vocabularies.

- [Darwin Core Archive — current cores and extensions](#)
- [Darwin Core Archive — Core Definitions](#)
- [Darwin Core Archive — Extension Definitions](#)
- [Darwin Core Archive — Term Definitions](#)
- [Vocabularies](#)
- [Geographical Area Standards](#)
- [XML Schemas](#)

See our [Sandbox](#) for extensions and vocabularies under development which are subject to change.

The source code for this site is maintained in [this Git repository](#).

<https://rs.gbif.org/>



Darwin Core Extension

Darwin Core Occurrence

Title	Darwin Core Occurrence
Name	Occurrence
Issued	2022-02-02
Namespace	http://rs.tdwg.org/dwc/terms/
RowType	http://rs.tdwg.org/dwc/terms/Occurrence
Description	The category of information pertaining to the existence of an Organism (sensu http://rs.tdwg.org/dwc/terms/Organism) at a particular place at a particular time.
Keywords	dwc:Event dwc:Taxon
Link	http://rs.tdwg.org/dwc/terms/Occurrence

(This is an HTML view of the definition. Use View-Source to see the underlying XML.)

Properties

eventID

An identifier for the set of information associated with an Event (something that occurs at a place and time). May be a global unique identifier or an identifier specific to the data set. See also <https://dwc.tdwg.org/terms/#dwc:eventID>

Examples: `INBO:VIS:Ev:00009375`

Qualname	http://rs.tdwg.org/dwc/terms/eventID
Namespace	http://rs.tdwg.org/dwc/terms/
Group	Event
Data Type	
Required	false

parentEventID

An identifier for the broader Event that groups this and potentially other Events. See also <https://dwc.tdwg.org/terms/#dwc:parentEventID>

Examples: `A1` (parentEventID to identify the main Whittaker Plot in nested samples, each with its own eventID - `A1:1`, `A1:2`).

Qualname	http://rs.tdwg.org/dwc/terms/parentEventID
Namespace	http://rs.tdwg.org/dwc/terms/
Group	Event
Data Type	
Required	false

Darwin Core terms

Taxonomy

- scientificName
- scientificNameAuthorship
- scientificNameID : WoRMS LSID
- taxonRank
- identifiedBy
- identificationRemarks
- identificationQualifier : e.g. cf., aff.

scientificName	scientificNameAuthorship	taxonRank		scientificNameID	identificationQualifier
<i>Abra alba</i> Lanice	(W. Wood, 1802) Malmgren, 1866	species genus		urn:lsid:marinespecies.org:taxname:141433 urn:lsid:marinespecies.org:taxname:129697	cf. conchilega

Time

- eventDate
- verbatimEventDate
- year
- month
- day

PUBLIC SERVICE ANNOUNCEMENT:

OUR DIFFERENT WAYS OF WRITING DATES AS NUMBERS CAN LEAD TO ONLINE CONFUSION. THAT'S WHY IN 1988 ISO SET A GLOBAL STANDARD NUMERIC DATE FORMAT.

THIS IS **THE** CORRECT WAY TO WRITE NUMERIC DATES:

2013-02-27

THE FOLLOWING FORMATS ARE THEREFORE DISCOURAGED:

02/27/2013 02/27/13 27/02/2013 27/02/13

20130227 2013.02.27 27.02.13 27-02-13

27.2.13 2013. II. 27. $\frac{2}{2}$ -13 2013.158904109

MMXIII-II-XXVII MMXIII ^{LVII}_{CCCLXV} 1330300800

$((3+3)\times(111+1)-1)\times3/3-1/3^3$ 2013 Mississ 10/11011/1101 02/27/20/13 01237


Some ISO 8601 examples:

```
1948-09-13
1973-02-28T15:25:00
1973-02-28T15:25:00Z
2005-08-31T12:11+12
1993-01-26T04:39/1993-01-26T05:48
1993-01/02
1993-01
1993
```

Location

- decimalLongitude
- decimalLatitude
- coordinateUncertaintyInMeters
- footprintWKT
- geodeticDatum : EPSG 4326
- locality
- locationID
- waterBody
- islandGroup
- island
- country

Some WKT examples:

```
LINESTRING (30 10, 10 30, 40 40)
POLYGON ((30 10, 40 40, 20 40, 10 20, 30 10))
MULTILINESTRING ((10 10, 20 20, 10 40),(40 40, 30 30, 40 20, 30 10))
MULTIPOLYGON (((30 20, 45 40, 10 40, 30 20)),((15 5, 40 10, 10 20, 5 10, 15 5)))
```

decimalLatitude	decimalLongitude	geodeticDatum	coordinateUncertaintyInMeters	footprintWKT
38.698	20.950	EPSG:4326	75033	LINESTRING (20.31 39.15, 21.58 38.24)
42.720	15.228	EPSG:4326	154338	LINESTRING (16.64 41.80, 13.82 43.64)

Layers

Switch layers on or off.

EEZ IHO

WKT

Generate WKT.

WKT

Coordinates

Add a location using decimal longitude and latitude.

Enter coordinates

Add

Geocoding

Find locations by name and add them to the locations list.

Enter location name

Submit

Clear

Type

Name

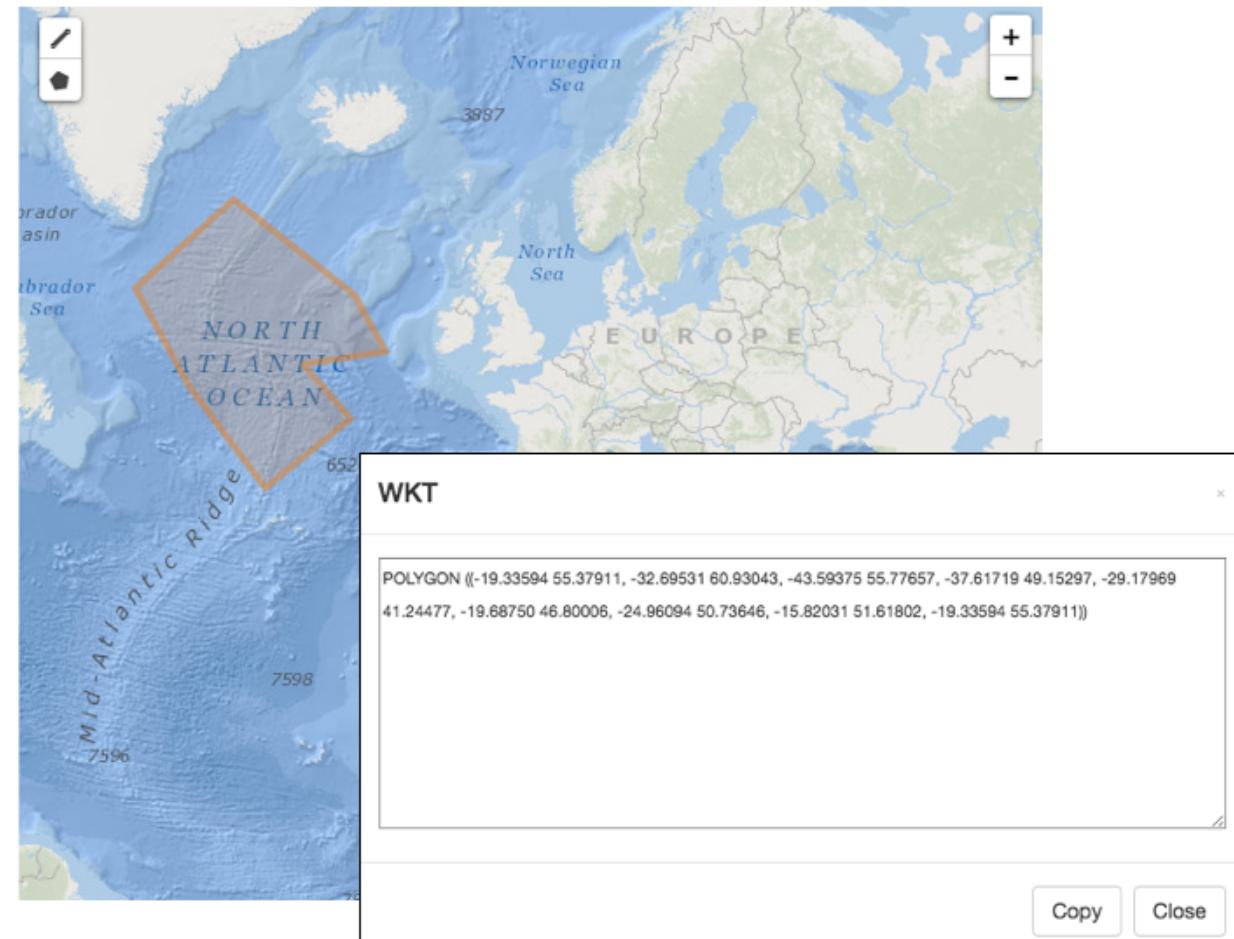
Longitude

Latitude

No results

Locations

Longitude	Latitude	Radius	Name	EEZ	IHO
-27.6095	51.7959	1,179,295			



Identifiers and references

- eventID
- parentEventID
- occurrenceID
- datasetID
- fieldNumber
- materialSampleID
- institutionCode and institutionID
- collectionCode and collectionID
- catalogNumber
- organismID
- associatedReferences
- bibliographicCitation

Standards

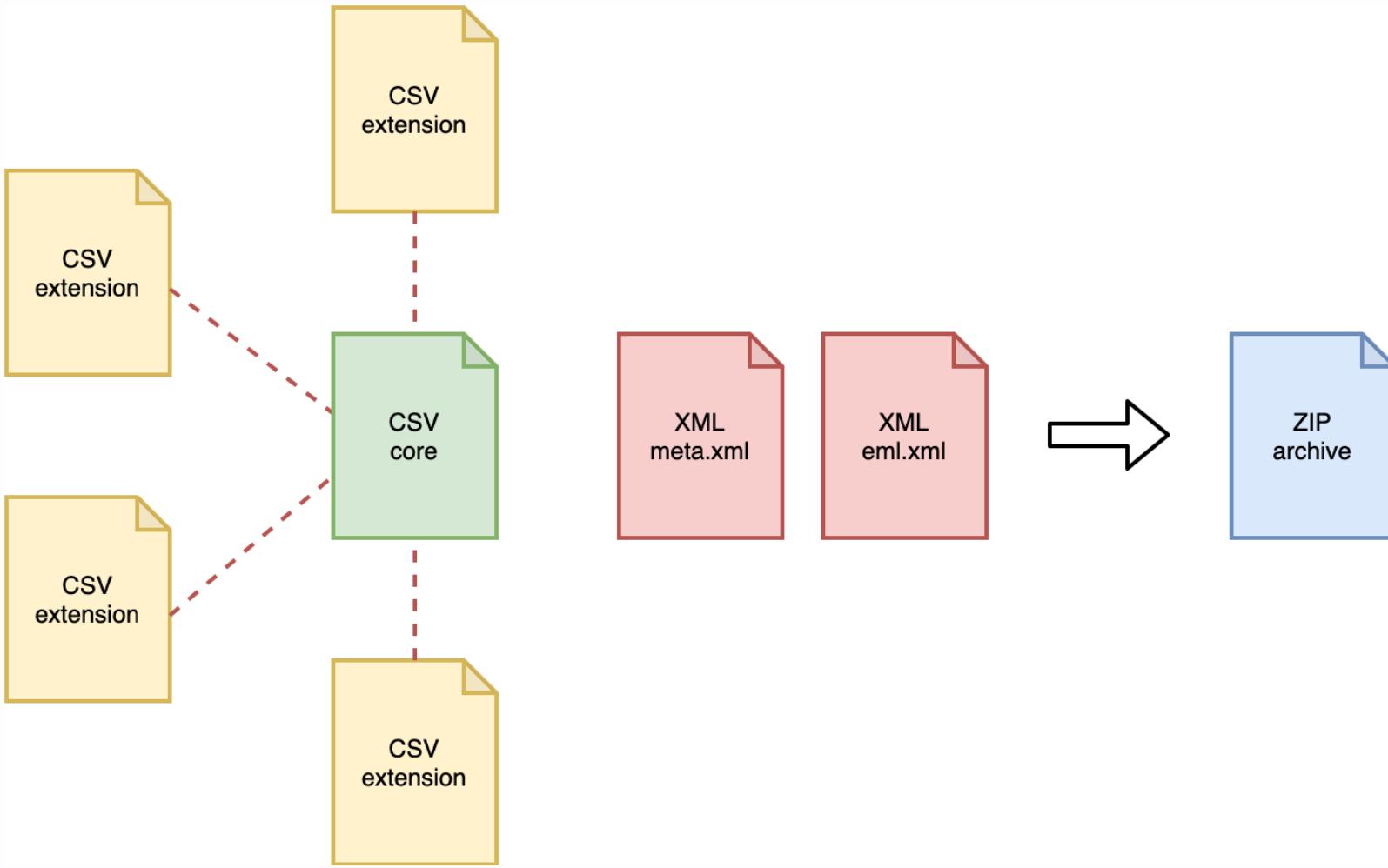
Terms for AIS

Improving Darwin Core for research and management of alien species

Quentin Groom[†], Peter Desmet[§], Lien Reyserhove[§], Tim Adriaens[§], Damiano Oldoni[§], Sonia Vanderhoeven[¶], Steven J Baskauf[¶], Arthur Chapman[#], Melodie McGeoch[¤], Ramona Walls[¤], John Wieczorek[¤], John R.U. Wilson^{^, ^}, Paula F F Zermoglio[¶], Annie Simpson[?]

- establishmentMeans : native, introduced, vagrant, uncertain
- pathway : release, escape, transport-contaminant, transport-stowaway, corridor, unaided
- degree0fEstablishment : captive, cultivated, failing, reproducing, established, colonising, invasive

Dataset structure



Occurrence core

occurrenceID	scientificName	scientificNameID	eventDate	decimalLongitude	decimalLatitude
urn:ABC:occ:123	<i>Abra alba</i>	urn:lsid:marinespecies.org:taxname:141433	2022-10-03	3.456	51.987
urn:ABC:occ:124	<i>Lanice</i>	urn:lsid:marinespecies.org:taxname:129697	2022-10-03	3.456	51.987

Event core

eventID	eventDate	decimalLongitude	decimalLatitude
urn:ABC:event:789	2022-10-03	3.456	51.987

Occurrence extension

eventID	occurrenceID	scientificName	scientificNameID
urn:ABC:event:789	urn:ABC:occ:123	Abra alba	urn:lsid:marinespecies.org:taxname:141433
urn:ABC:event:789	urn:ABC:occ:124	Lanice	urn:lsid:marinespecies.org:taxname:129697

Event core

eventID	parentEventID	eventDate	decimalLongitude	decimalLatitude
urn:ABC:event:42			3.456	51.987
urn:ABC:event:789	urn:ABC:event:42	2022-10-03		

Occurrence extension

eventID	occurrenceID	scientificName	scientificNameID
urn:ABC:event:789	urn:ABC:occ:123	Abra alba	urn:lsid:marinespecies.org:taxname:141433
urn:ABC:event:789	urn:ABC:occ:124	Lanice	urn:lsid:marinespecies.org:taxname:129697

Event core

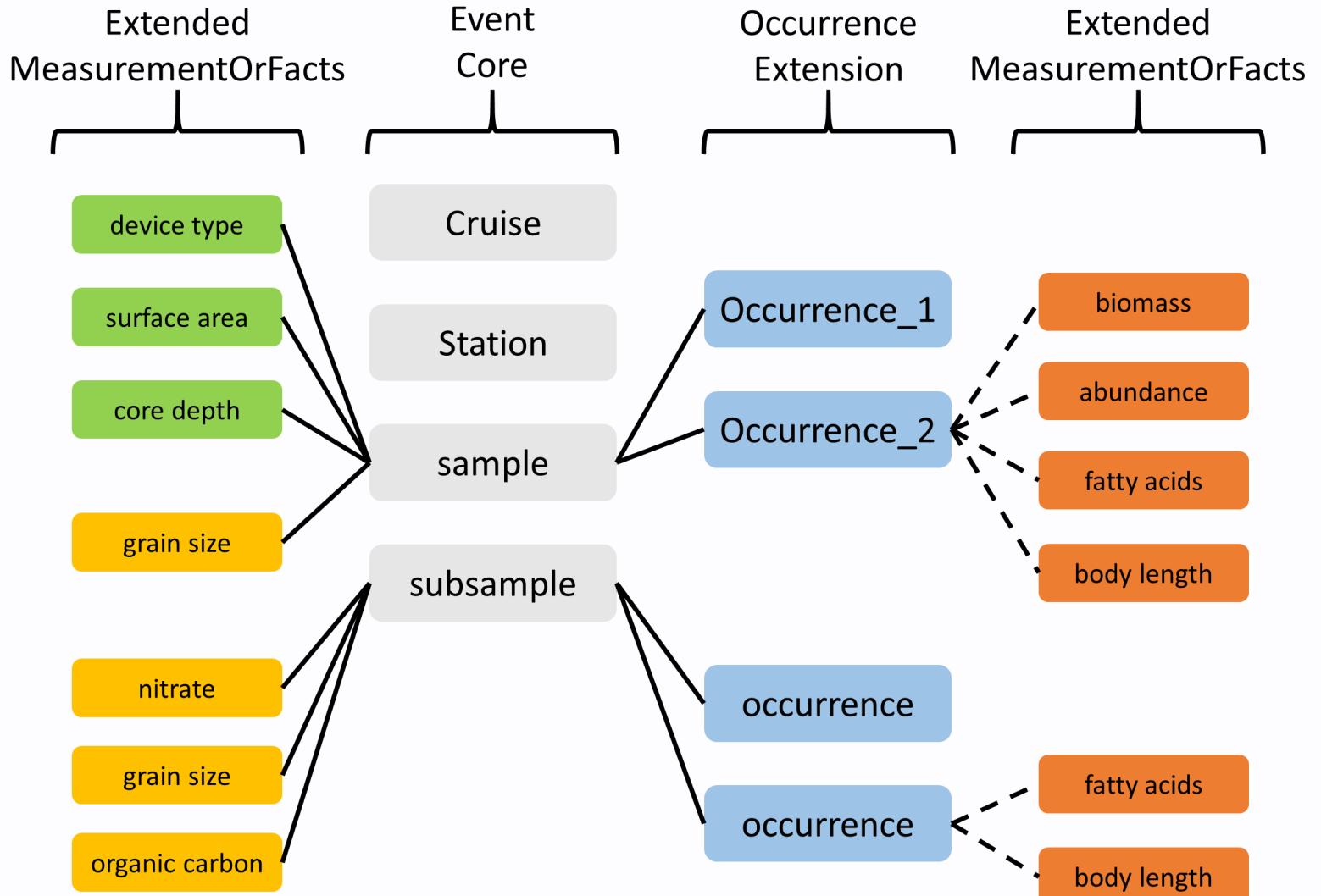
eventID	eventDate	decimalLongitude	decimalLatitude
urn:ABC:event:789	2022-10-03	3.456	51.987

Occurrence extension

eventID	occurrenceID	scientificName	scientificNameID
urn:ABC:event:789	urn:ABC:occ:123	Abra alba	urn:lsid:marinespecies.org:taxname:141433
urn:ABC:event:789	urn:ABC:occ:124	Lanice	urn:lsid:marinespecies.org:taxname:129697

MeasurementOrFact extension

eventID	measurementType	measurementValue	measurementUnit
urn:ABC:event:789	temperature	17	degrees C
urn:ABC:event:789	salinity	31	psu



ExtendedMeasurementOrFact extension

https://rs.gbif.org/extension/obis/extended_measurement_or_fact.xml

- measurementID
- **occurrenceID**
- measurementType
- **measurementTypeID**
- measurementValue
- **measurementValueID**
- measurementUnit
- **measurementUnitID**

DNADerivedData extension

<https://docs.gbif.org/publishing-dna-derived-data/1.0/en/>

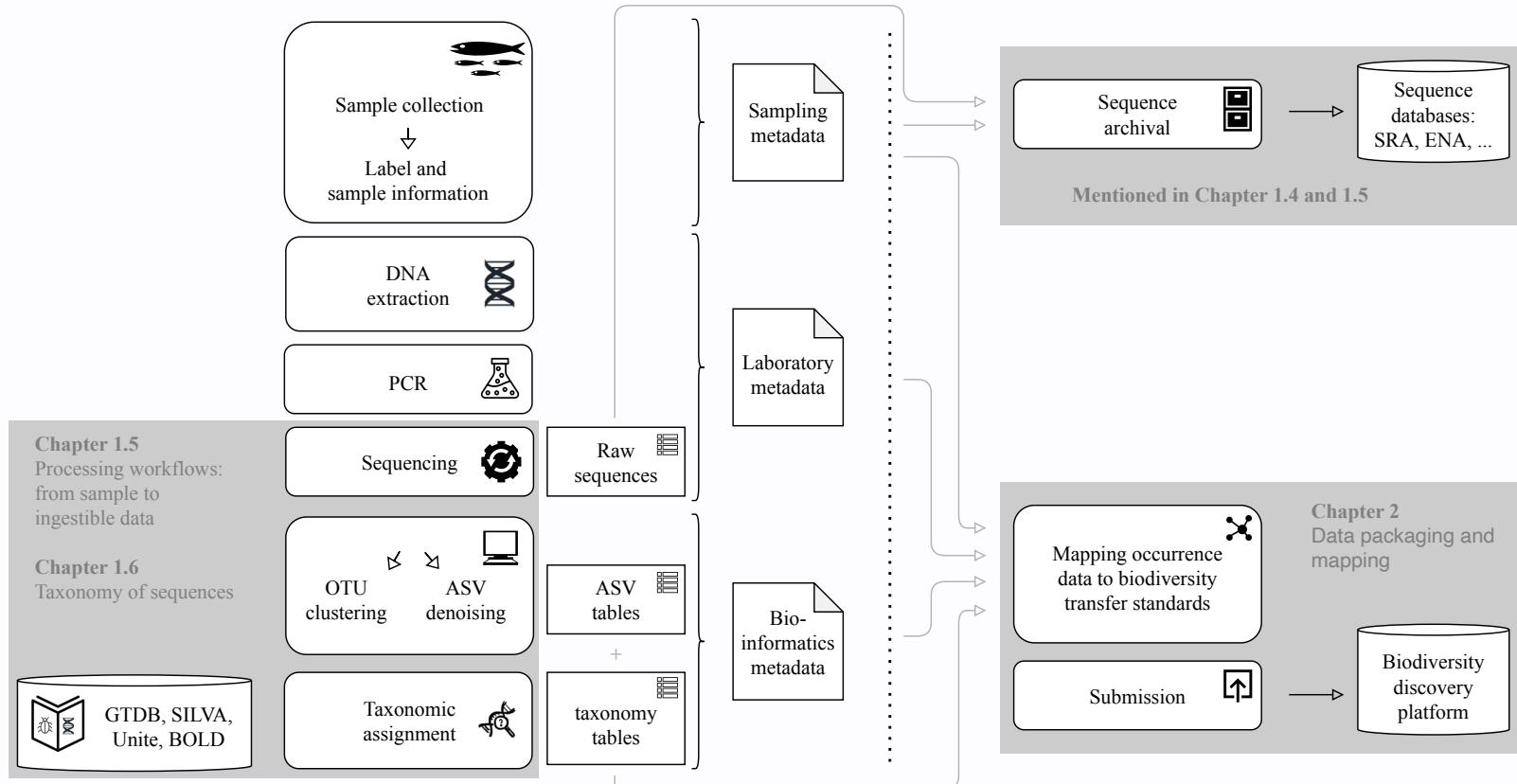
Publishing DNA-derived data through biodiversity data platforms

Anders F. Andersson · Andrew Bissett · Anders G. Finstad · Frode Fossøy · Marie Grosjean · Michael Hope · Thomas S. Jeppesen · Urmas Kõljalg · Daniel Lundin · R. Henrik Nilsson · Maria Prager · Cecilie SvenningSEN · Dmitry Schigel – Version 3027b16, 2022-08-05 14:26:56 UTC

This document is also available in [PDF format](#) and in other languages: [français](#).



Generate and document data



Technical acronyms:

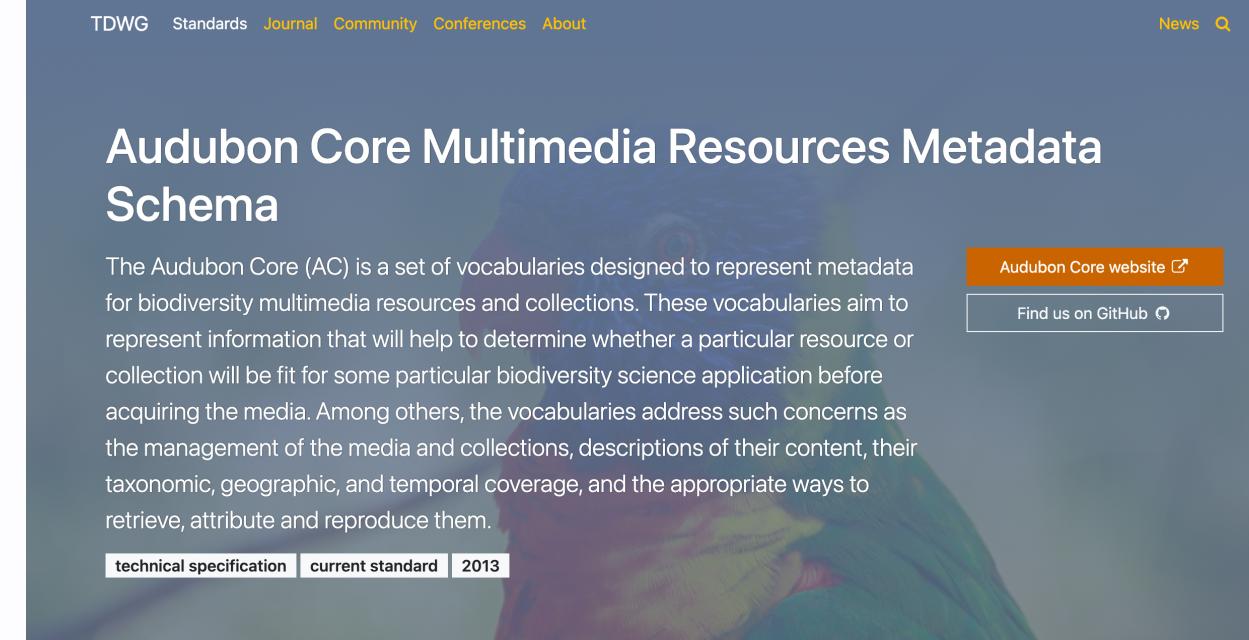
PCR: Polymerase chain reaction
OTU: Operational taxonomic unit
ASV: Amplicon sequence variant

Databases:

GTDB: <https://gtdb.ecogenomic.org>
SILVA: <https://www.arb-silva.de>
BOLD: <http://www.boldsystems.org>

Field name	Example
DNA_sequence	TCTATCCTCAATTATAGGTCA
sop	https://dx.doi.org/10.17504/protocols.io.pa7dihn
target_gene	16S rRNA
target_subfragment	V6
pcr_primer_forward	GGACTACHVGGGTWTCTAAT
pcr_primer_reverse	GGACTACHVGGGTWTCTAAT
pcr_primer_name_forward	jgLCO1490
pcr_primer_name_reverse	jgHCO2198
pcr_primer_reference	https://doi.org/10.1186/1742-9994-10-34
env_broad_scale	forest biome [ENVO:01000174]
env_local_scale	litter layer [ENVO:01000338]
lib_layout	Paired
seq_meth	Illumina HiSeq 1500
otu_seq_comp_appr	"blastn;2.6.0+;e-value cutoff: 0.001"
otu_db	"NCBI Viral RefSeq;83", "UNITE;8.2"

Audubon Core extension

A dark blue header bar at the top of the page. On the left, there is a navigation menu with links to TDWG, Standards, Journal, Community, Conferences, and About. On the right, there are links for News and a search icon. The main title "Audubon Core Multimedia Resources Metadata Schema" is centered in large white font. Below the title is a detailed description of the Audubon Core (AC) in white text. At the bottom of the section, there are three small white buttons labeled "technical specification", "current standard", and "2013".

The Audubon Core (AC) is a set of vocabularies designed to represent metadata for biodiversity multimedia resources and collections. These vocabularies aim to represent information that will help to determine whether a particular resource or collection will be fit for some particular biodiversity science application before acquiring the media. Among others, the vocabularies address such concerns as the management of the media and collections, descriptions of their content, their taxonomic, geographic, and temporal coverage, and the appropriate ways to retrieve, attribute and reproduce them.

[technical specification](#) | [current standard](#) | [2013](#)

[Audubon Core website](#) 

[Find us on GitHub](#) 

Field name	Example
provider	http://morphbank.net
rights	http://creativecommons.org/licenses/by/3.0/legalcode
owner	https://orcid.org/0000-0002-4236-0384
description	Epistenia coeruleata: head frontal view
associatedSpecimenReference	http://www.morphbank.net/135231
captureDevice	digital camera, UV pass filter
accessURI	http://images.morphbank.net/?id=135233
format	http://mediatypes.appspot.com/jpeg
PixelXDimension	2000
startTime	15
endTime	23
xFrac	0.2
widthFrac	0.1

Vocabularies

made by **VocPrez** for NVS

NVS Search

Not Secure | vocab.nerc.ac.uk/search_nvs/

National Environment Research Council

National Oceanography Centre
British Oceanographic Data Centre BODC

The NERC Vocabulary Server (NVS)

Service Status

NVS Home | Vocabularies | Thesauri | Search NVS | SPARQL | Other Tools | About NVS

Search for a term in a vocabulary collection

Enter search string using % as wildcard if required. Example: chlorophyll%sediment.

Identifier Preferred label Alternative label Definition Exact match Case sensitive toggle advanced options

A01	A02	A03	A04	A05	B02	B03	B04	B05	B06	B07	B09	B11	B12	B20	B21	B22	B39	B75	B76	C00	C10	C16	C17	C18	C19
C30	C31	C32	C33	C34	C35	C36	C37	C38	C39	C40	C41	C43	C45	C46	C47	C48	C59	C60	C61	C62	C64	C67	C71	C72	C75
C77	C86	C87	C88	C89	C96	C98	D01	E01	E02	F02	G01	G02	G03	G04	G05	G06	G07	G08	G09	G10	G11	G12	G13	G14	G15
G17	G18	G20	G21	G22	G23	G25	G26	G28	G29	G30	GBX	GGB	GGS	GGT	GS1	GS2	GS3	GS4	GS5	GS6	GS8	GS9	GSA	GSB	GSC
GXM	H01	H02	H03	H04	H05	H06	HA2	I01	I02	I03	I10	I11	I12	I13	I14	I15	L02	L03	L04	L05	L06	L07	L08	L10	L11
L12	L13	L14	L15	L18	L19	L20	L21	L22	L23	L24	L26	L27	L30	L31	L33	L34	L35	M01	M03	M04	M05	M06	M09	M10	M11
M12	M13	M14	M15	M16	M17	M18	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	MVB	N01	N02	N03	N04	N05	N06	OD1	OG1
P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13	P14	P15	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27
P28	P29	P30	P35	P36	P37	P38	P64	Q01	R01	R03	R04	R05	R06	R07	R08	R09	R10	R11	R12	R13	R15	R16	R19	R20	R21
R22	R23	R24	R25	R26	R27	RD2	RMC	RP2	RR2	RTV	S01	S02	S03	S04	S05	S06	S07	S09	S10	S11	S12	S13	S14	S15	S18
S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	T01	T02	V12	V22	V23	W01	W02	W03	W04	W05	W06	W07	W08	W09
W10	W11																								

Vocabulary collection selector: hover on the coloured cells to see the collection's title and click to select. Note that the codes and the colours have no meaning but related vocabularies tend to be given a code starting with the same letter.

BODC P01 Parameter Usage Vocabulary

<https://github.com/nvs-vocabs/P01>

“ The BODC PUV is a controlled vocabulary for labelling scientific variables in databases and data files. It is a collection of unique and persistent identifiers attached to structurally logical labels and textual definitions. It is a SKOS (Simple Knowledge Organisation System) controlled vocabulary. This means that its structure is compliant with SKOS, a W3C recommendation for the representation of knowledge in a format understandable to computers. ”

The property or attribute (S06)
of an object of interest (S25, S27, S29)
in relation to (S02)
an environmental matrix (S26)
by a method (S03, S04, S05)

Concept

Concentration of oxygen {O2 CAS 7782-44-7} per unit mass of the water body [dissolved plus reactive particulate phase] by Winkler titration

URI	http://vocab.nerc.ac.uk/collection/P01/current/DOKGWITX/
Within Vocab	BODC Parameter Usage Vocabulary
Alternative Labels	WC_dissO2_Winkler/kg
Definition	Unavailable
Date	2015-08-26T15:08:03
Identifier	SDN:P01::DOKGWITX
Note	accepted
Has Current Version	3
Version	1 , 2
version	3
inScheme	http://vocab.nerc.ac.uk/scheme/EMODNET_CHEM/current/
Broader	P01:DOXMZZXX Concentration of oxygen {O2 CAS 7782-44-7} per unit mass of the water body [dissolved plus reactive particulate phase] A05:EV_OXY Oxygen P02:DOXY Dissolved oxygen parameters in the water column S06:S0600045 Concentration S26:MAT00633 water body [dissolved plus reactive particulate phase] S27:CS002779 oxygen P35:EPC00002 Water body dissolved oxygen concentration C67:DOXY dissolved oxygen
Related	P06:KGUM Micromoles per kilogram S02:S057 per unit mass of the S04:S04108 Winkler titration

Alternate Formats

Other formats for this page:

[RDF/XML](#) [Turtle](#) [JSON-LD](#)

Alternate Profiles

Other views of this page:

[Alternate Profiles](#) ?

[I-ADOPT html view](#) ?

World Register of Marine Species

<https://www.marinespecies.org/>

<https://www.marinespecies.org/introduced/>

WoRMS - World Register of Marine Species

marine only extant only

Quick search... Taxa Literature Distribution Specimen Editors Statistics Tools Manual Log in

WoRMS taxon details

★ *Abra alba* (W. Wood, 1802)

AphiaID 141433 (urn:lsid:marinespecies.org:taxname:141433)

Classification Biota > ★ Animalia (Kingdom) > ★ Mollusca (Phylum) > ★ Bivalvia (Class) > ★ Autobranchia (Subclass) > ★ Heteroconchia (Infraclass) > ★ Euheterodonta (Subterclass) > ★ Imparidentia (Superorder) > ★ Cardiida (Order) > ★ Tellinoidea (Superfamily) > ★ Semelidae (Family) > ★ Abra (Genus) > ★ *Abra alba* (Species)

Status accepted

Rank Species

Parent ★ *Abra* Lamarck, 1818

Orig. name ★ *Mactra alba* W. Wood, 1802

Synonymised names

- ★ *Abra renieri* (Bonn, 1831) · unaccepted
- ★ *Amphidesma boyssiana* Leach, 1852 · unaccepted > unjustified emendation (Unjustified emendation of *Mactra...*) ⓘ
- ★ *Erycina renierii* Bonn, 1831 · unaccepted
- ★ *Erycina tumida* Brusina, 1865 · unaccepted
- ★ *Mactra alba* W. Wood, 1802 · unaccepted
- ★ *Mactra boyssi* Montagu, 1803 · unaccepted
- ★ *Scrobicularia alba* (W. Wood, 1802) · unaccepted
- ★ *Scrobicularia alba* var. *oblonga* J. T. Marshall, 1893 · unaccepted
- ★ *Syndesmya alba* (W. Wood, 1802) · unaccepted
- ★ *Syndesmya alba* var. *apesa* De Gregorio, 1884 · unaccepted (synonym)
- ★ *Syndesmya alba* var. *curta* Jeffreys, 1864 · unaccepted (synonym)
- ★ *Syndosmya alba* (W. Wood, 1802) · unaccepted
- ★ *Syndosmya alba* var. *major* Recluz, 1843 · unaccepted (synonym)
- ★ *Syndosmya apelina* Récluz, 1843 · unaccepted
- ★ *Syndosmya occitanica* Récluz in Chenu, 1844 · unaccepted
- ★ *Tellina apelina* Gmelin, 1791, *sensu* Renier, 1804 · unaccepted (misapplication)
- ★ *Tellina pellucida* Brocchi, 1814 · unaccepted (preoccupied by *Tellina pellucida* ...)



★ *Abra alba*



WoRMS - World Register of Marine Species

marinespecies.org/aphia.php?p=taxdetails&id=141433#distributions

Environment marine

Original description (of ★ *Macra alba* W. Wood, 1802) Wood W. 1802. Observations on the hinges of British Bivalve shells. *Transactions of the Linnean Society of London*, 6: 154-176, pl. 14-18. , available online at <http://biodiversitylibrary.org/page/758287>
page(s): p. 165, pl. 16 fig. 9-12 [details] Available for editors [request]

Descriptive notes
★ Description Small (up to 25mm long), thin and fragile shell. Oval shape, rather flat with thin concentric growth lines. The shells are... ⓘ
★ Distribution During both periods *Abra alba* is a common species in the near-coastal zone. The species is only rarely found further than... ⓘ
★ Distribution In the investigated area *A. alba* is very abundant in the south-eastern part of the Oyster Ground and the Frisian Front... ⓘ

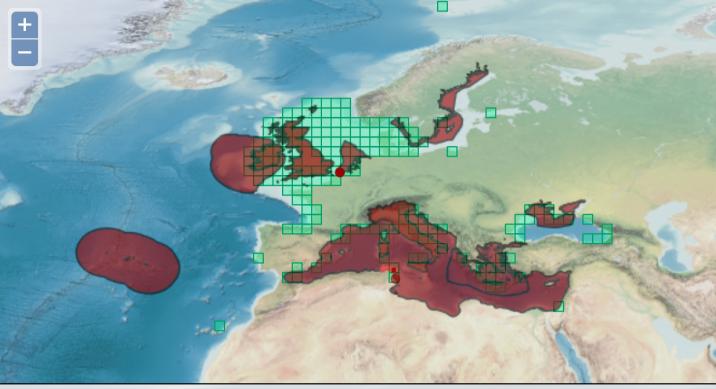
Taxonomic citation MolluscaBase eds. (2022). MolluscaBase. *Abra alba* (W. Wood, 1802). Accessed through: World Register of Marine Species at: <https://www.marinespecies.org/aphia.php?p=taxdetails&id=141433> on 2022-10-30

Taxonomic edit history

Date	action	by
2004-12-21 15:54:05Z	created	Gofas, Serge
2010-09-23 10:34:21Z	changed	Huber, Markus

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[taxonomic tree]

Sources (21) Documented distribution (36) Notes (7) Attributes (18) Vernaculars (9) Links (25) Images (11)



Present Inaccurate Introduced: alien Containing type locality

GEBCO 2014 ⓘ
Countries
OBIS occurrences (47626) ⓘ
Bounding boxes
Centroid points
Polygons

Collapse all Expand all Definitions

— FROM OTHER SOURCES
— Belgium

OBIS data publishing

IPT

ipt.iobis.org/obiscanada/

Home Manage Resources Administration About

HOME

Hosted resources available through this IPT

197 resource(s) currently available

Logo	Name	Organization	Type	Subtype	Records	Last modified	Last publication	Next publication
--	A Study of Attached Benthic Foraminifera Associated With The Deep-Sea Coral Primnoa resedaeformis On The Scotian Margin	Not registered	Occurrence	Observation	2568	2021-04-16	2021-04-16	--
--	Abundance of hydroids in a mangrove ecosystem at Twin Cays, Belize, Central America	Not registered	Occurrence	Observation	49	2021-04-16	2016-03-29	--
--	Abundance of intertidal algae and invertebrates on the Atlantic coast of Nova Scotia	Not registered	Occurrence	Observation	100620	2021-04-16	2021-04-16	--
--	Acadia University: Ectoparasites on Atlantic sturgeon (<i>Acipenser oxyrinchus</i> Mitchell, 1814) in the Minas Basin	Not registered	Occurrence	Observation	50	2021-04-16	2017-09-03	--
--	Acadia University: Invertebrate species distribution during winter conditions at the Windsor mudflat, an intertidal mudflat located in the upper Bay of Fundy, January - June, 1996	Not registered	Occurrence	Observation	1917	2021-04-16	2015-11-07	--
--	Acadia University: Invertebrates from mudflats in the Minas Basin (Bay of Fundy), collected for the NaGISA project July 2008	Not registered	Occurrence	Observation	330	2021-04-16	2021-04-16	--
--	Acadia University: Juvenile Fish Assemblages collected in bays along the Atlantic Coast of mainland Nova Scotia during summers of 2005 and 2006	Not registered	Occurrence	Observation	315	2021-04-16	2017-02-12	--
--	Acadia University: Population demographics of longfin squid, <i>Loligo pealeii</i> , in the Minas Basin, Bay of Fundy, Canada between May and August 2014.	Not registered	Occurrence	Specimen	0	2021-04-16	2017-09-08	--

Abundance of intertidal algae a x +

ipt.iobis.org/obiscanada/resource?r=scrosati_watt_2014_e095-123-d1

Home Manage Resources Administration About

OCCURRENCE

Abundance of intertidal algae and invertebrates on the Atlantic coast of Nova Scotia

Latest version published by Canadian node of the Ocean Biogeographic Information System (OBIS Canada) on 16 April 2021

EDIT

Download the latest version of this resource data as a Darwin Core Archive (DwC-A) or the resource metadata as EML or RTF:

Data as a DwC-A file download 100,620 records in English (2 MB) - Update frequency: unknown

Metadata as an EML file download in English (16 KB)

Metadata as an RTF file download in English (14 KB)

Publication date: 16 April 2021
Published by: Canadian node of the Ocean Biogeographic Information System (OBIS Canada)
License: CC-BY 4.0
How to cite

Description

Description

Data Records

Versions

In 2008 as part of university masters thesis project two studies were completed, one experimental and one mensurative, on the abundance of primary producers and consumers from rocky intertidal habitats in Atlantic Canada.

How to cite

As part of the mensurative study, four wave-sheltered locations were sampled spanning 350 km of Nova Scotia coastline. Data from that study describe the abundance of seaweeds and invertebrates found at three tidal elevation zones (high, middle, and low) for a total of 1170 quadrats. Measurements include the abundance (percent cover) of the different taxa found at each quadrat using a 20 cm × 20 cm frame. For data associated with the manipulative part of the study see Watt and Scrosati 2014. Because of its taxonomic amplitude and coverage of a wide environmental stress gradient, this data set is potentially useful to address in novel or infrequent ways other broad ecological issues, such as abundance–occupancy relationships, species co-occurrence, species abundance distributions, dominance and rarity, spatial scales of population and community variability, and distribution of phylogenetic diversity. This dataset includes both presence and absence occurrence records.

Rights

GBIF Registration

Keywords

External data

Contacts

Overview: Abundance of intertidal algae and invertebrates on the Atlantic coast of Nova Scotia

ipt.ioBIS.org/obiscanada/manage/resource.do?r=scrosati_watt_2014_e095-123-d1

Home Manage Resources Administration About

MANAGE > OVERVIEW

Abundance of intertidal algae and invertebrates on the Atlantic coast of Nova Scotia

[DELETE](#) [CANCEL](#)

Resource overview. Upload or connect to source data, map data to Darwin Core, complete metadata, publish the resource and register it with the GBIF network.

Source Data [Source Data](#)

Darwin Core Mappings [Select source type](#)

Metadata

Published Versions

Auto-publishing

Visibility

Networks

Resource Managers

[Darwin Core Occurrence](#) [ADD](#)

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

Not modified since last publication

iptschema_wattscrosati 147.7 MB, 100,620 rows, 56 columns
[file] 6 Apr 2016, 23:19:09
Readable Yes

[Darwin Core Mappings](#)

Your mapping between the source data and Darwin Core terms.

Not modified since last publication

Core

Darwin Core Occurrence 54 terms mapped to
iptschema_wattscrosati 6 Apr 2016, 23:20:28

Basic Metadata

ipt.iobis.org/obiscanada/manage/metadata-basic.do?r=scrosati_watt_2014_e095-123-d1&edit>Edit

Home Manage Resources Administration About

MANAGE > OVERVIEW > METADATA

Basic Metadata

Abundance of intertidal algae and invertebrates on the Atlantic coast of Nova Scotia

SAVE BACK

Basic Metadata

Geographic Coverage

Taxonomic Coverage

Temporal Coverage

Keywords

Associated Parties

Project Data

Sampling Methods

Citations

Collection Data

External links

Additional Metadata

Please enter all the mandatory properties on the Basic Metadata page, and then continue entering metadata in the other pages that are applicable to your resource. The more metadata you provide, the greater the chance that your resource will be found, reused by other researchers, and cited.

Title * ⓘ

Abundance of intertidal algae and invertebrates on the Atlantic coast of Nova Scotia

Metadata Language * ⓘ Type * ⓘ Publishing Organization * ⓘ

English Occurrence Select an organization

Data Language * ⓘ Subtype ⓘ Update Frequency * ⓘ

English Observation Unknown

Data Licence * ⓘ

Creative Commons Attribution (CC-BY) 4.0

SAVE BACK

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cc BY

Description* ⓘ

Overview: Abundance of interti +

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 PP

Source Data i **Metadata**

Darwin Core Mappings

Metadata Edit Upload Your resource metadata.
Not modified since last publication

Published Versions EDIT

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Visibility

Networks

Resource Managers

PUBLISH

i **Published Versions**

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

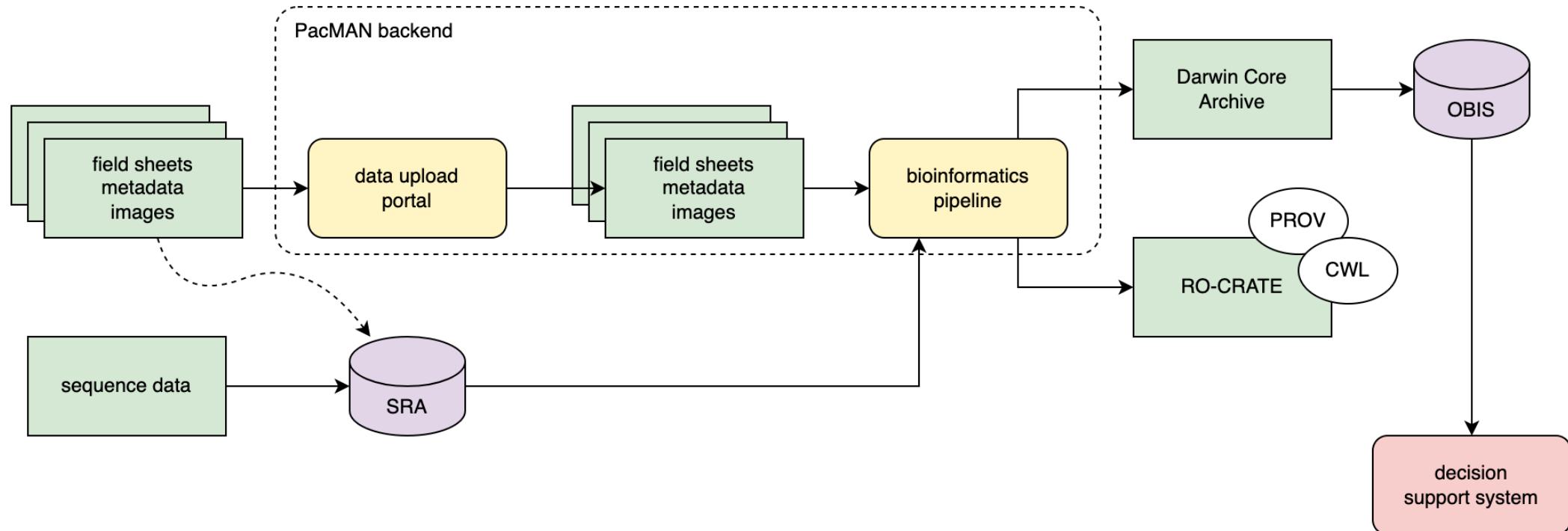
	Current version	Pending version
Version	1.2  	1.3 
DOI 	-	Reserve
Published on	16 April 2021, 13:04	-
Publication log	Download	-

i **Auto-publishing**

EDIT

Auto-publish is inactive. Your resource may be published manually with the Publish button.

PacMAN data management



github.com/iobis/pacman-template

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iobis / pacman-template Public

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

master 1 branch 3 tags Go to file Add file Code

pieterprovoost Delete ~\$template.xlsx a47efcf on 5 Apr 8 commits

.gitignore first commit 11 months ago

README.md readme 7 months ago

template.xlsx multiple changes, added vouchers 7 months ago

README.md

pacman-template

This is the data submission template for the [Pacific islands Marine bioinvasions Alert Network](#) (PacMAN) project.

👉 Go to the [releases page](#) to get the latest version of the template.

Instructions

A data submission website is currently under development, for the time being spreadsheets can be sent to pacman@obis.org.

Sampling metadata

Enter time, location, and contact information for your sampling campaign.

Environmental data

About

Data submission template for the Pacific islands Marine bioinvasions Alert Network (PacMAN) project

Readme 0 stars 2 watching 1 fork

Releases 3

PacMAN template 0.3.0 Latest on 5 Apr + 2 releases

Packages

No packages published Publish your first package