

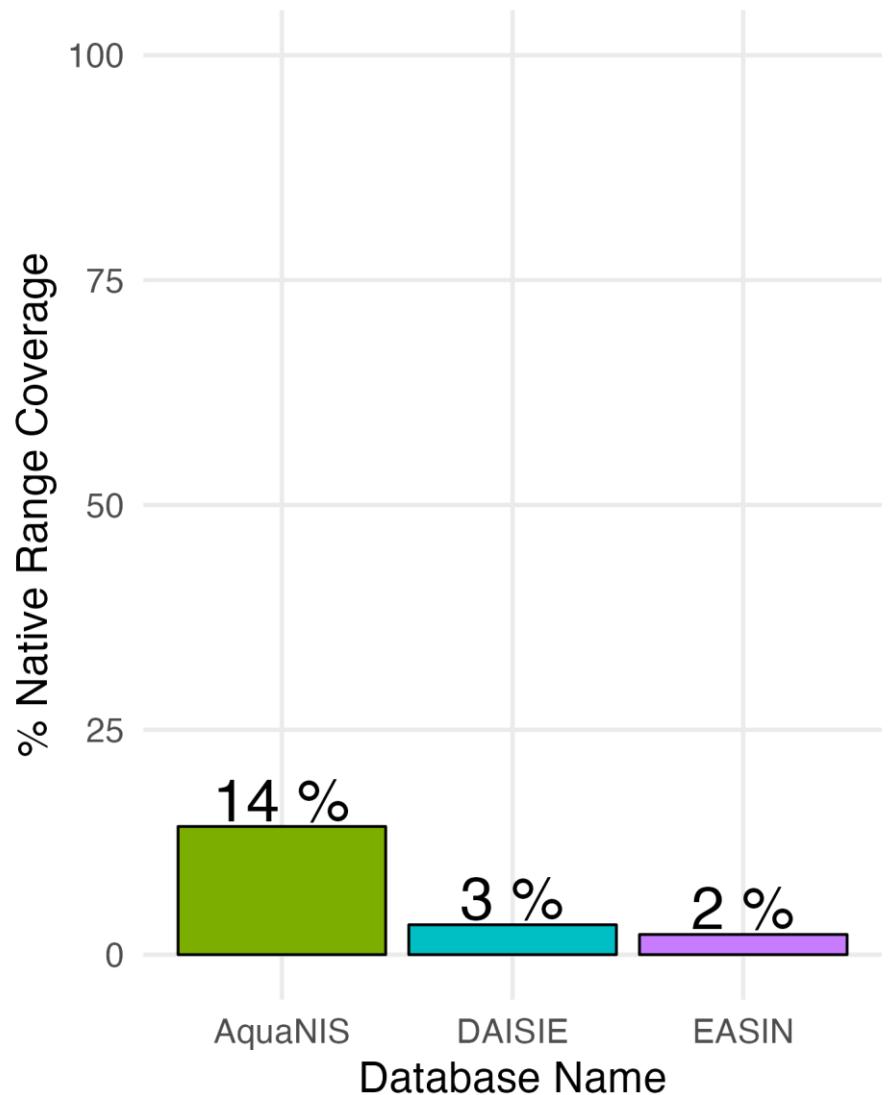
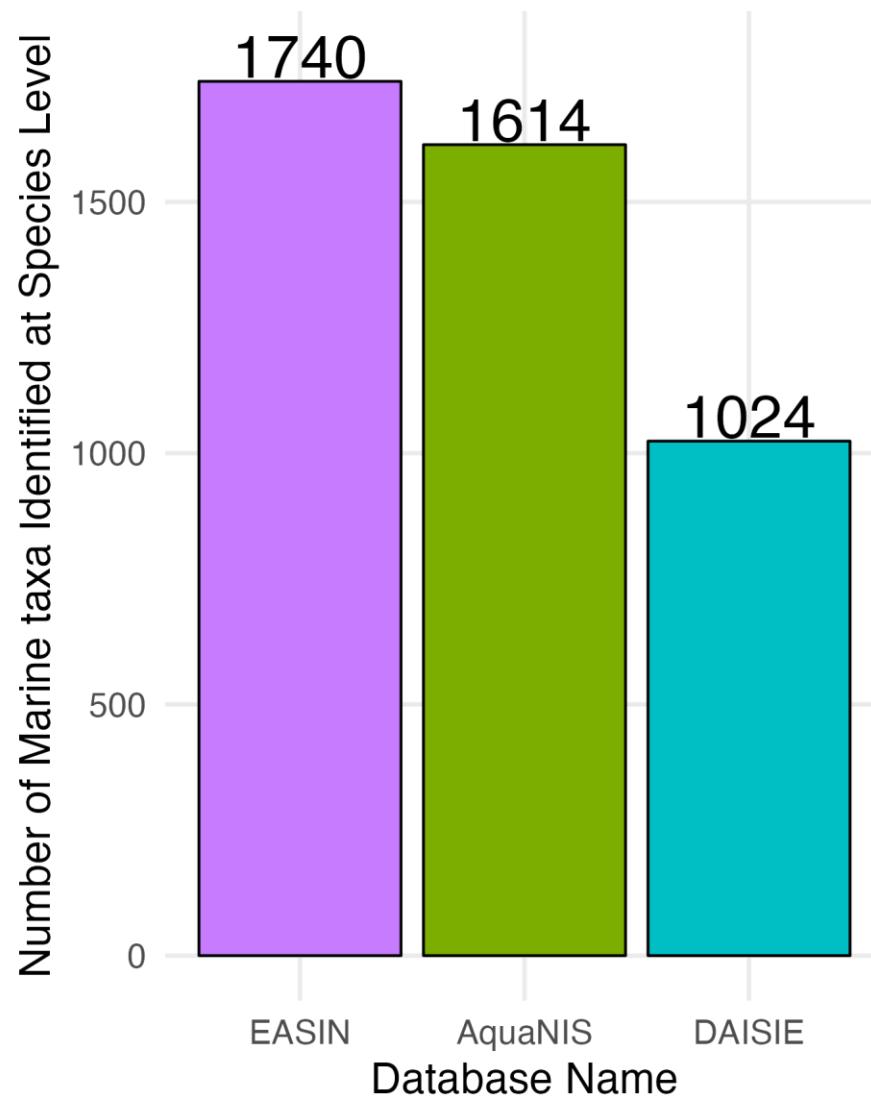
ANIS-E : Explorer l'origine des espèces non- indigènes en un clic



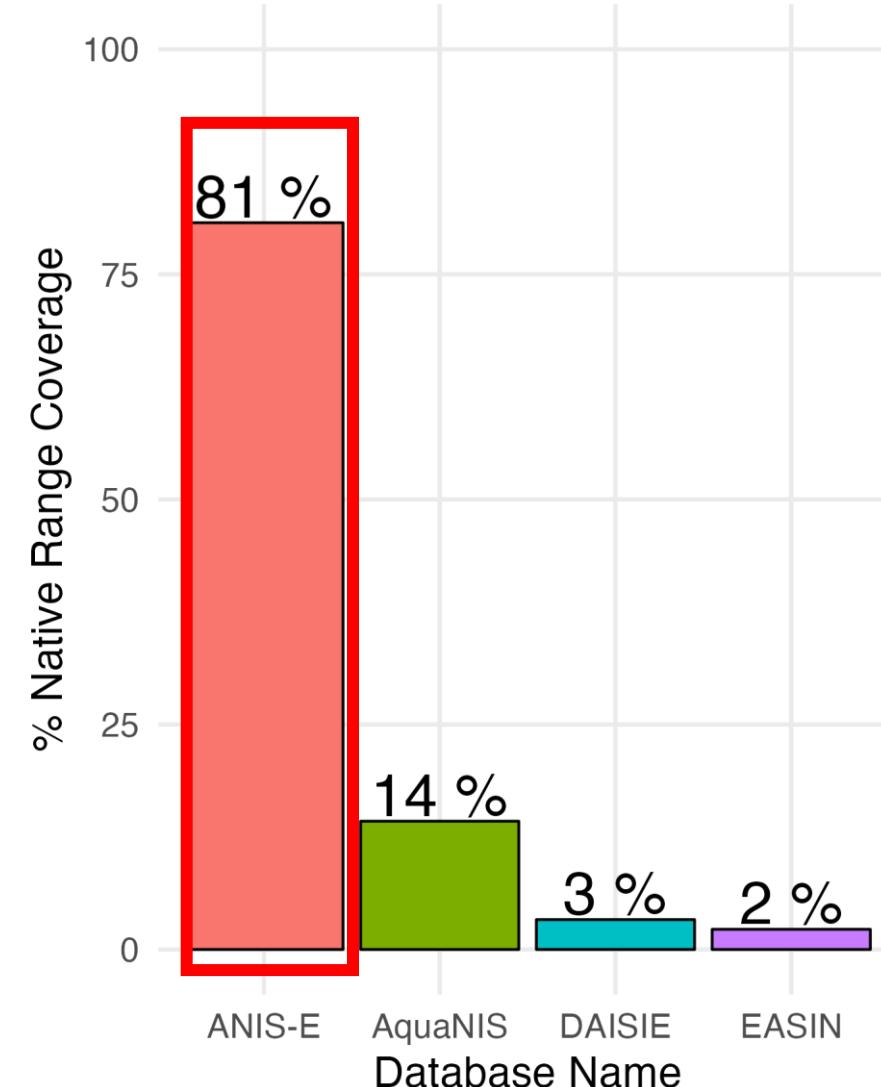
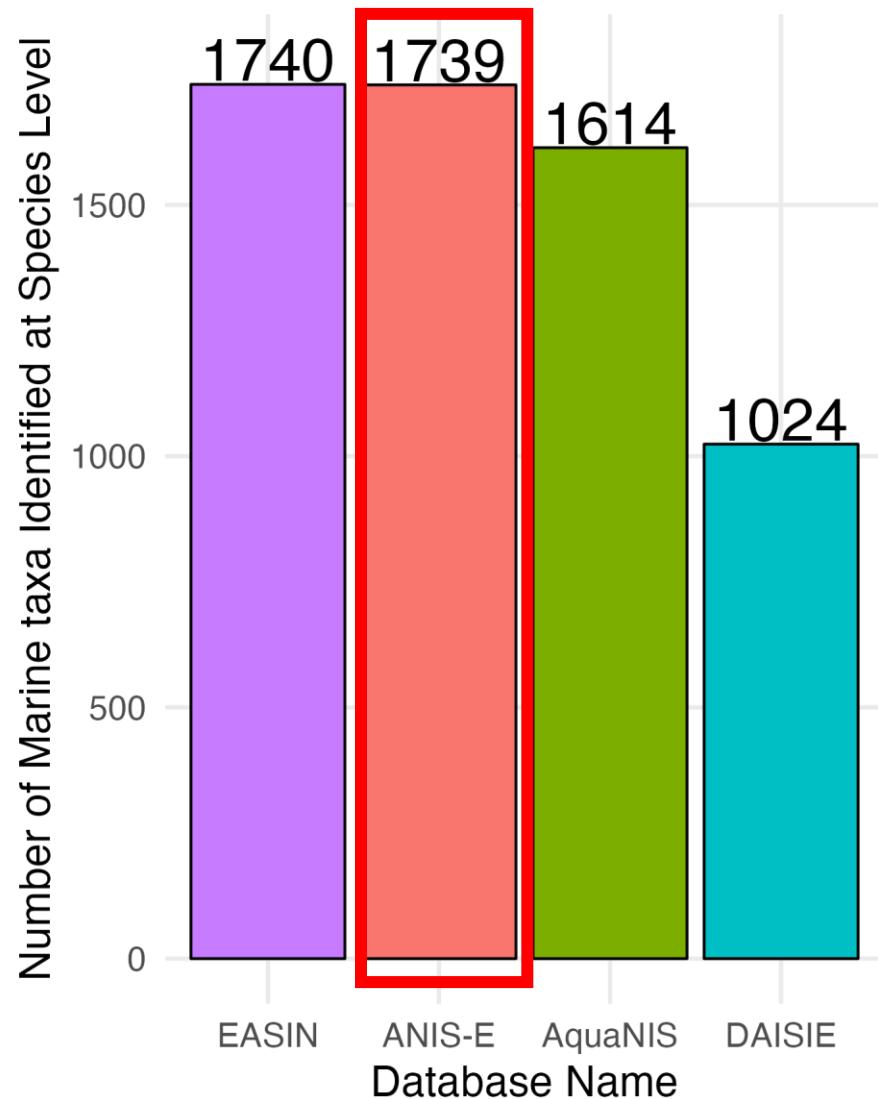
Raison d'être d'ANIS-E

- Connaître l'aire native des espèces non indigènes est important pour plusieurs raisons en écologie des invasions
 - Comprendre la tolérance physiologique, les exigences de niche (Broennimann et al., 2021)
 - Démographie des parasites (Blakeslee et al. 2012)
 - Reconstitution des voies d'introduction (Estoup & Guillemaud, 2010)
 - Comprendre le cycle de vie (traits, génétique des populations, etc.) (Phillips, Brown & Shine, 2010)
 - Interactions entre les traits et l'environnement (Ricciardi et al. 2021)
 - ...

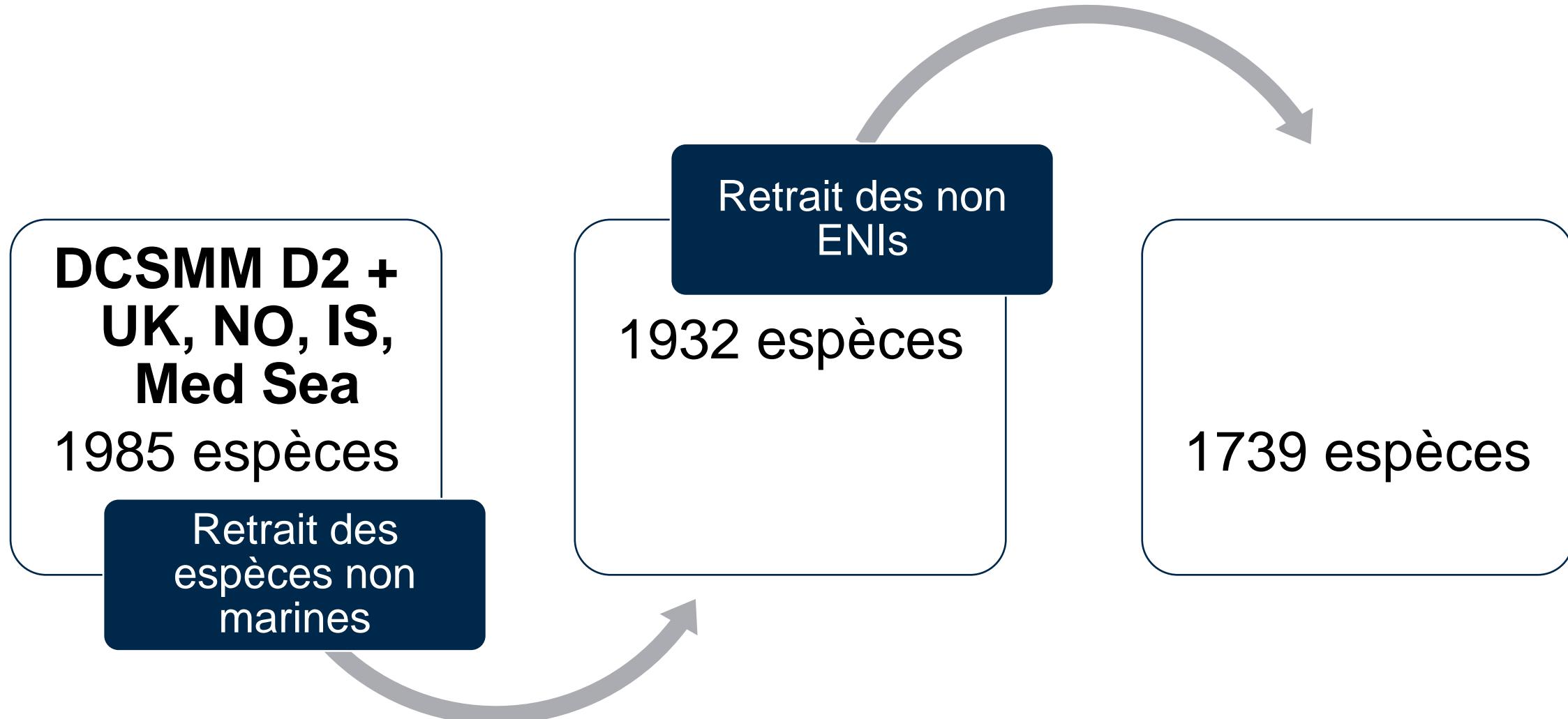
Bases de données sur les ENIs marines



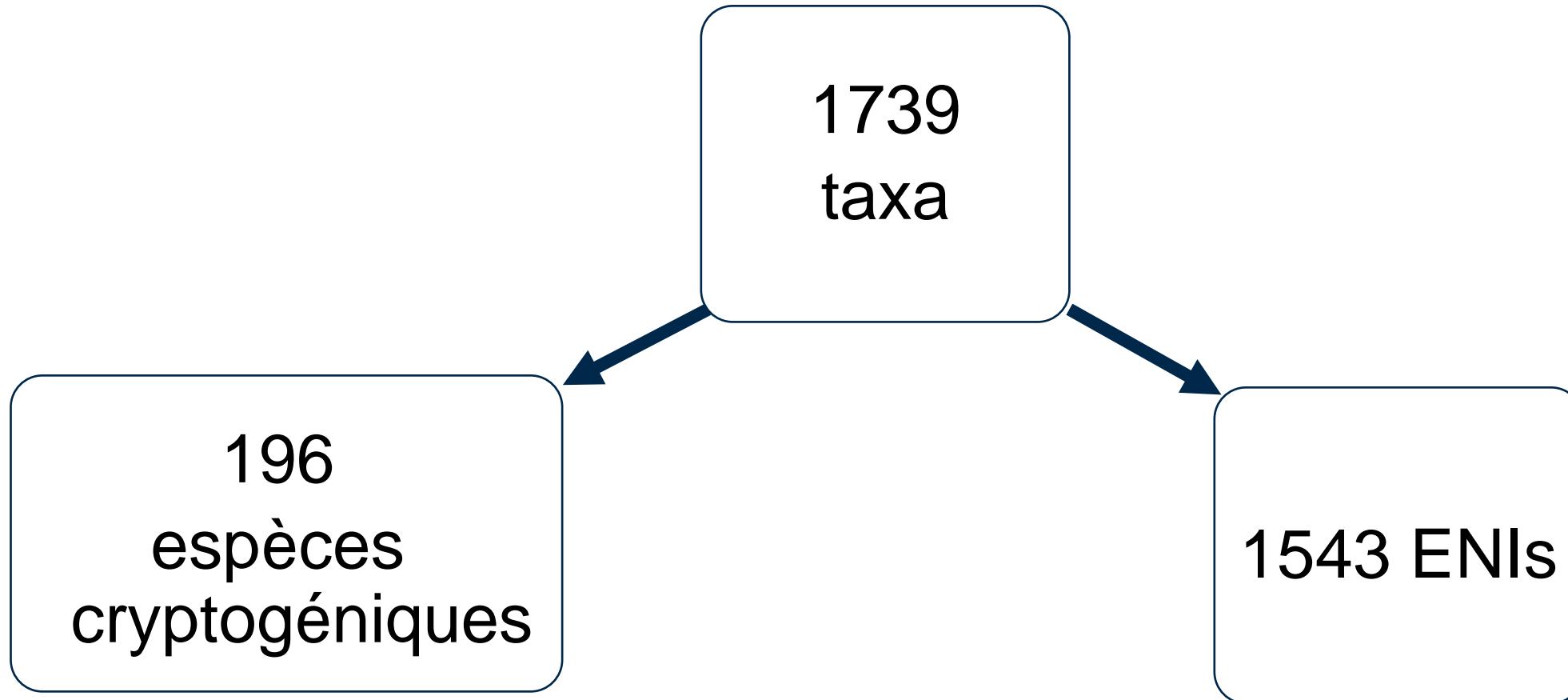
Bases de données sur les ENIs marines



Processus de production



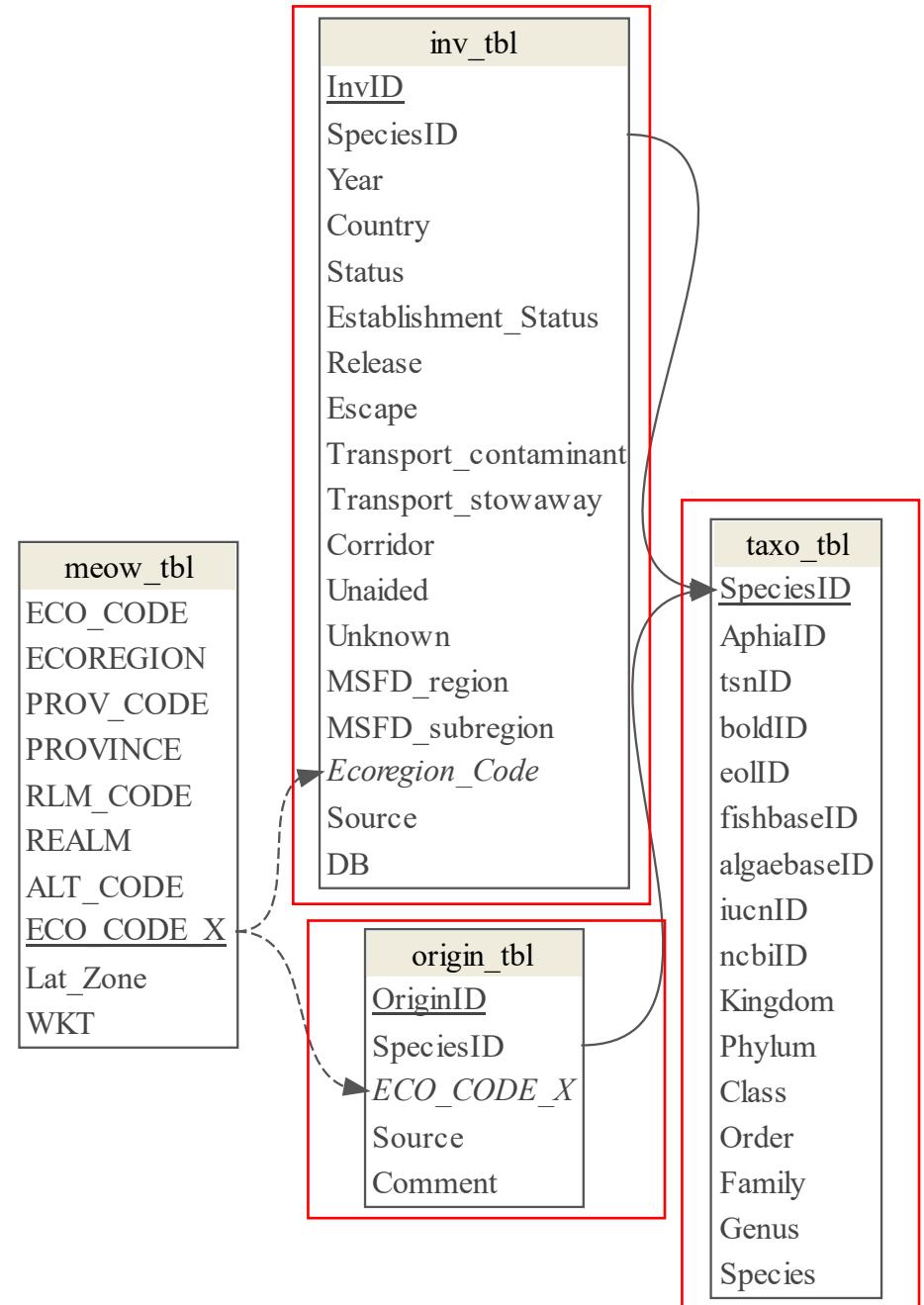
Composition d'ANIS-E



Métadonnées ANIS-E

3 Tables :

- taxo_tbl : Informations Taxonomiques
- inv_tbl : Historique des observations
- origin_tbl : Aire Natives des ENIS



Fonctionnement ANIS-E



The screenshot shows the ANIS-E application interface. At the top left, there's a logo for "E-MARINADE" and a menu icon (three horizontal lines). Below the header, there are two hexagonal icons, each featuring a stylized map of Europe with marine life and the text "ANIS-E". To the right of these icons, the text "Welcome to ANIS-E" is displayed. The main content area contains the following text:

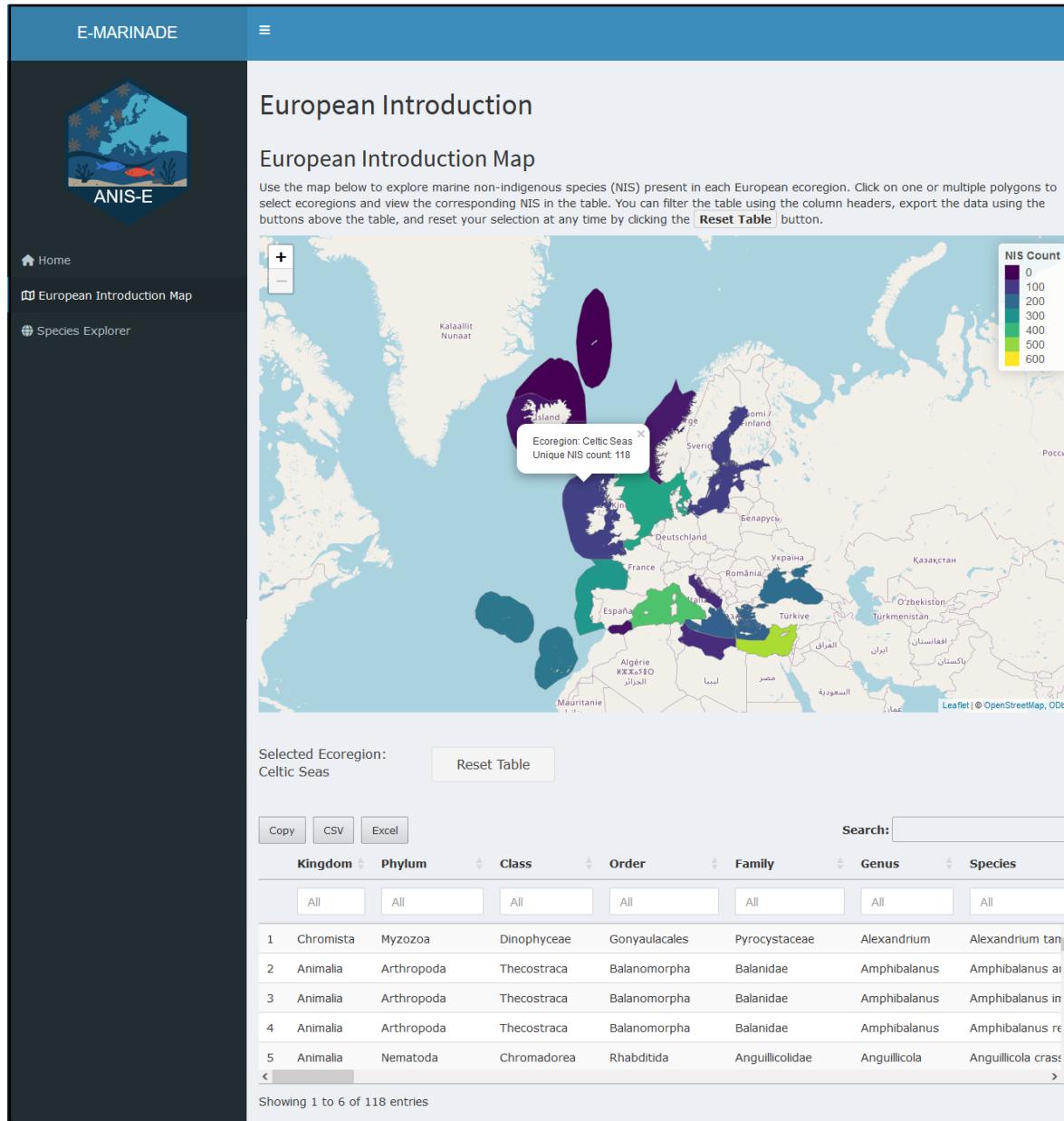
ANIS-E (Atlas of marine Non-Indigenous Species in Europe) is an interactive R-Shiny application designed to help you explore the spread and origin of marine Non-Indigenous Species (NIS) across European waters.

This tool provides access to harmonized datasets and visualization tools that allow users to:

- Explore where marine NIS have been introduced, by clicking on European Seas ecoregions.
- Visualize their native ranges, to better understand species origins and biogeographic pathways.
- Search and select individual species to view detailed maps of their introduced and native distributions.
- Download datasets for further analysis, and filter tables by taxonomy or geography.

The app combines spatial data, ecological metadata, and interactive maps to support researchers, policymakers, and educators in assessing patterns of biological invasions in marine ecosystems.

Fonctionnement ANIS-E



Fonctionnement ANIS-E

E-MARINADE

ANIS-E

Home European Introduction Map Species Explorer

Species Explorer

Click on a row in the taxonomic table or use the input field to filter by species/AphiaIDs.¹
In the tables below, you will be able to access and download the information about the introduced and native range.

Select Input Mode:

Table selection Text input

Search:

Class	Order	Family	Genus	Species	EU_native
All	All	All	All	All	All
Teleostei	Beloniformes	Belonidae	Ablennes	Ablennes hians	false
Teleostei	Ovalentaria incertae sedis	Pomacentridae	Abudephduf	Abudephduf hoefleri	false
Teleostei	Ovalentaria incertae sedis	Pomacentridae	Abudephduf	Abudephduf saxatilis	false
Teleostei	Ovalentaria incertae sedis	Pomacentridae	Abudephduf	Abudephduf sexfasciatus	false
Teleostei	Ovalentaria incertae sedis	Pomacentridae	Abudephduf	Abudephduf sordidus	false

Showing 1 to 6 of 1.739 entries
Refine species to plot and show in the tables
Actaeodes tomentosus, Alpheus rapacida, Calappa pelli, Cancer irroratus

NB: If a species has no known native area, the **Native Range** subpanel will be empty.

Introduced Range Native Range

Search:

Kingdom	Phylum	Class	Order	Family	Genus	Species	AphiaID	tsnID
All	All	All	All	All	All	All	All	All
1 Animalia	Arthropoda	Malacostraca	Decapoda	Xanthidae	Actaeodes	Actaeodes tomentosus	209053	
2 Animalia	Arthropoda	Malacostraca	Decapoda	Xanthidae	Actaeodes	Actaeodes tomentosus	209053	
3 Animalia	Arthropoda	Malacostraca	Decapoda	Xanthidae	Actaeodes	Actaeodes tomentosus	209053	
4 Animalia	Arthropoda	Malacostraca	Decapoda	Alpheidae	Alpheus	Alpheus rapacida	107482	659
5 Animalia	Arthropoda	Malacostraca	Decapoda	Alpheidae	Alpheus	Alpheus rapacida	107482	659

Showing 1 to 6 of 10 entries

¹ Searching by AphiaID is currently supported only at the species level. Future versions will extend this feature to all taxonomic levels.

Fonctionnement ANIS-E

E-MARINADE
ANIS-E

Species Explorer

Click on a row in the taxonomic table or use the input field to filter by species/AphiaIDs.¹
In the tables below, you will be able to access and download the information about the introduced and native range.

Select Input Mode:
 Table selection Text input

Select taxonomic level of interest.
Note: If you have selected a taxonomic rank higher than Species, the search by AphiaID will not be available.

Species

Species or AphiaIDs (one per line).
Homo sapiens
Caulerpa taxifolia
417798

Success - Recognised taxon/taxa
Caulerpa taxifolia

Warning - Unrecognised taxon/taxa
Homo sapiens

Success - Recognised AphiaID(s)
417798

Refine species to plot and show in the tables
Caulerpa taxifolia, *Laguna setigera*

Native Introduced

Introduced Range Native Range

Copy CSV Excel

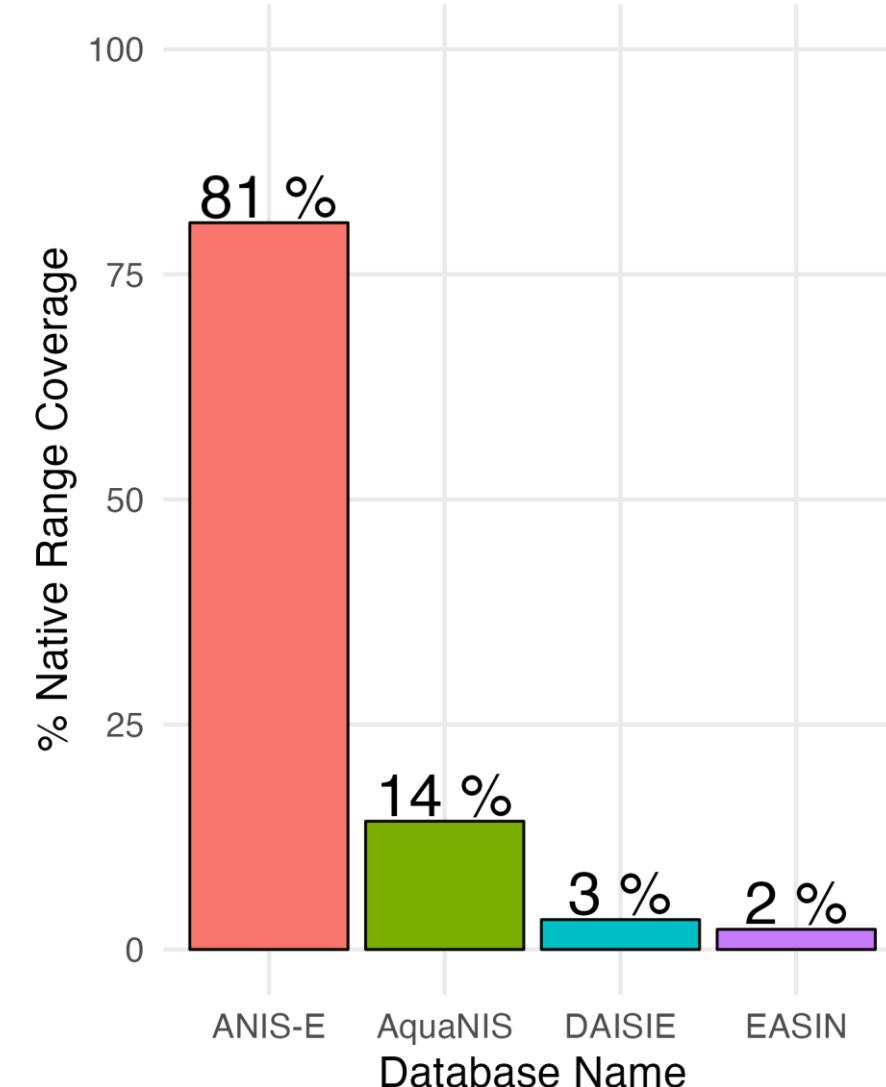
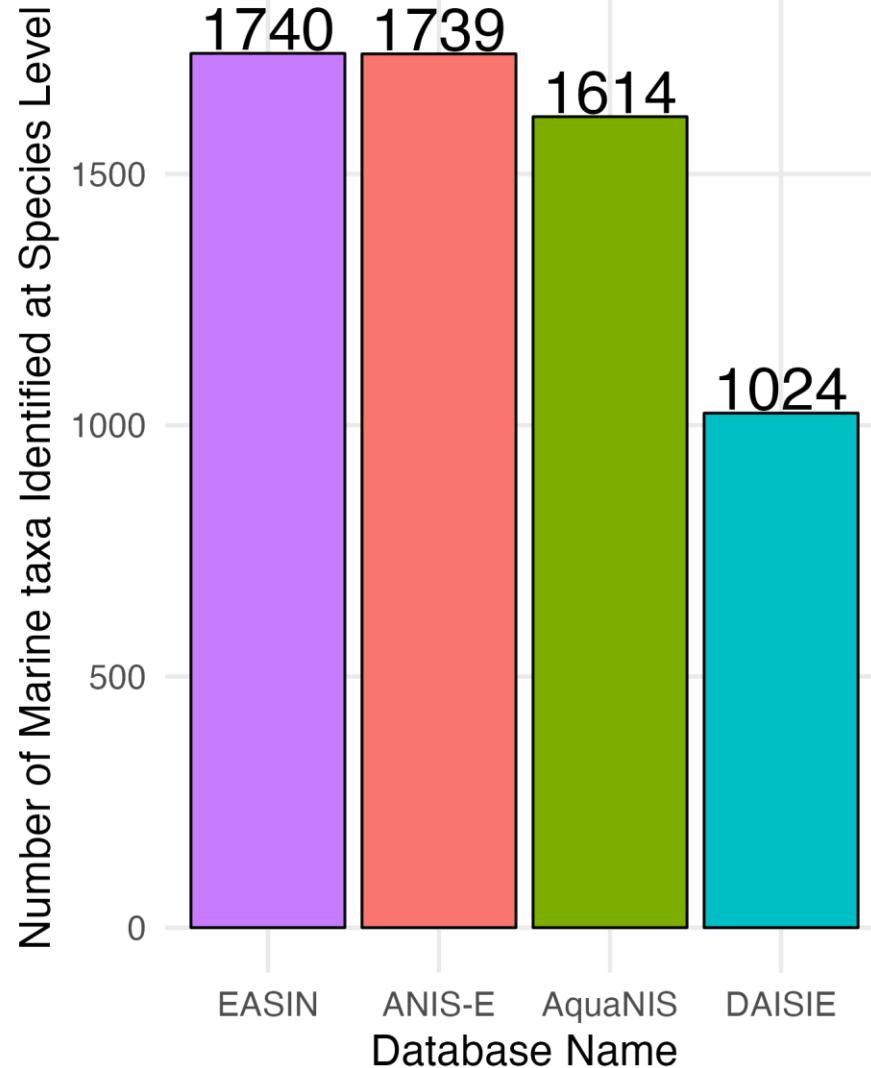
Search:

Kingdom	Phylum	Class	Order	Family	Genus	Species	AphiaID	TsnID
All	All	All	All	All	A	All	All	All
1 Plantae	Chlorophyta	Ulvophyceae	Bryopsidales	Caulerpaceae	Caulerpa	Caulerpa taxifolia	144476	
2 Plantae	Chlorophyta	Ulvophyceae	Bryopsidales	Caulerpaceae	Caulerpa	Caulerpa taxifolia	144476	
3 Plantae	Chlorophyta	Ulvophyceae	Bryopsidales	Caulerpaceae	Caulerpa	Caulerpa taxifolia	144476	
4 Plantae	Chlorophyta	Ulvophyceae	Bryopsidales	Caulerpaceae	Caulerpa	Caulerpa taxifolia	144476	
5 Plantae	Chlorophyta	Ulvophyceae	Bryopsidales	Caulerpaceae	Caulerpa	Caulerpa taxifolia	144476	

Showing 1 to 5 of 5 entries

¹ Searching by AphiaID is currently supported only at the species level. Future versions will extend this feature to all taxonomic levels.

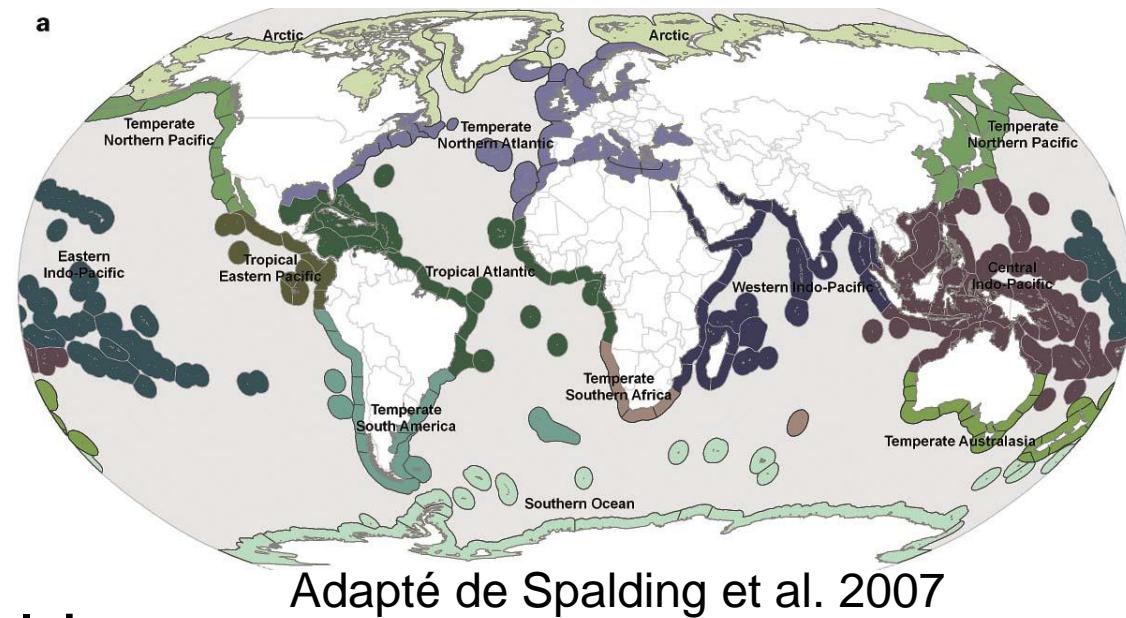
Comparaison ANIS-E vs autres SI



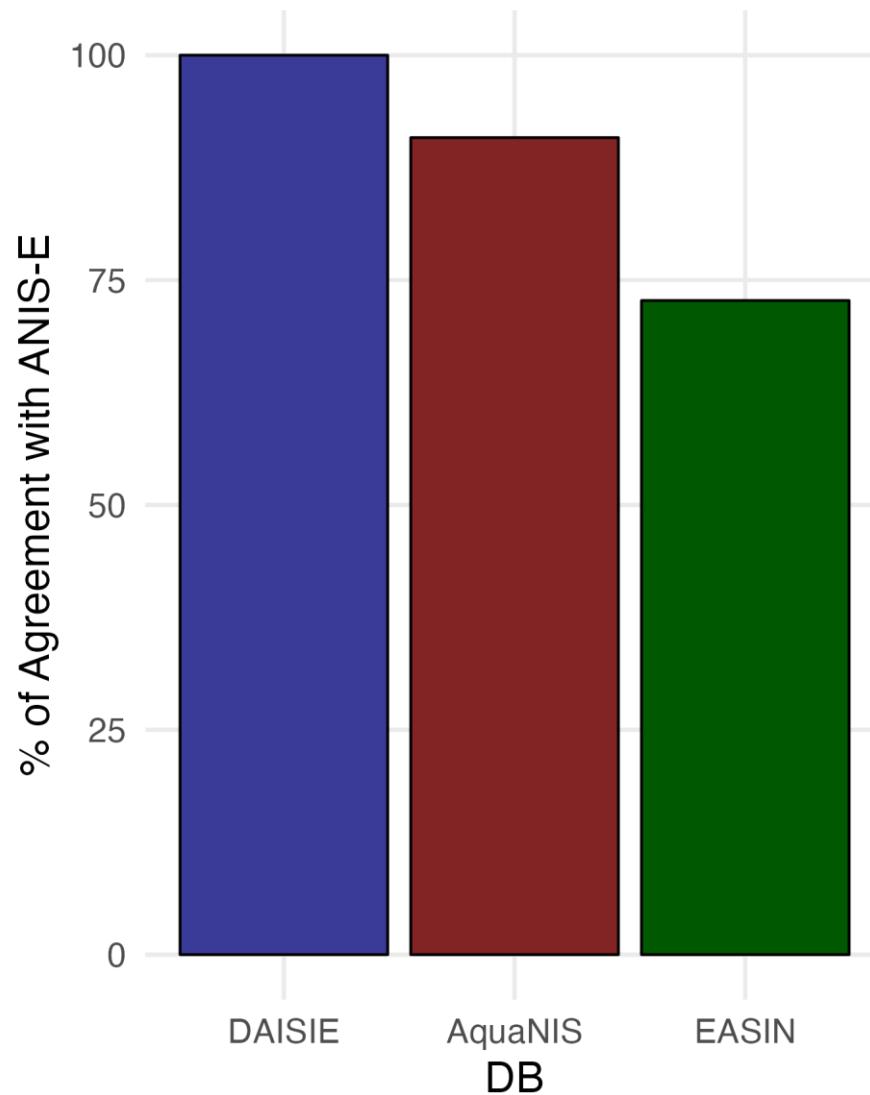
Comparaison Aire Natives ANIS-E vs autres SI

Systèmes biogéographiques difficilement comparable :

- DAISIE : Bassins océaniques
- EASIN : Bassins océaniques
- AquaNIS : Large Marine Ecosystems
- ANISE : Marine Ecoregions of the World



Comparaison Aire Natives ANIS-E vs autres SI



Conclusion

- Travail de compilation des aires natives des espèces
- Base de donnée « évolutive »
- ANIS-E Facilement accessible
 - Respect des principes FAIRs
 - Disponible CSV ou Shiny app
- Article en cours de révision.

Questions, remarques, propositions ?

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