

Marineregions.org

towards a standard for georeferenced marine names

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Flanders Marine Institute (VLIZ)

IMDIS, 23-25 September 2013, Lucca, Italy

Outline presentation

- Objectives geographic data systems at VLIZ
- marineregions.org
 - Data structure
 - Data content (o.a. EEZ boundaries)
 - Interface & web services
 - Users
- Future plans



Objective

- VLIZ is a National Oceanographic Data Centre (NODC): need to group and structure in a standardized way marine geographic information
 - to create a standard list of marine geographic placenames, together with their coordinates



Problem....

 Definition of marine placenames not always straightforward

Clear definitions lacking

Marine places harder to access, harder to define



The North Sea?



Initiatives

• VLIMAR: Marine gazetteer (2004)

• MARBOUND: The world EEZ boundaries (2005)

• Towards one system: Marine Regions (2012)





Marineregions.org

towards a standard for georeferenced marine names

About

Marine Gazetteer

EE7 boundaries

Sources

Statistics

About Marine Regions

Marine Regions is a standard list of marine georeferenced place names and areas. It integrates and serves geographic information from the VLIMAR Gazetteer and the MARBOUND database and proposes a standard of marine georeferenced locations, boundaries and regions.

Read more...

Statistics

7

28,814 marine georeferenced places 36,079 marine place names 9,532 polygons of geographic places 12 marine geographic regional/global classifications Maritime Boundaries (EEZ) of the world

News

Marine Natura 2000 sites available!

Added on: 2013-05-27 14:29:04 by Claus, Simon

The boundaries of the marine and coastal Natura 2000 sites, representing an ecological network of protected areas for Europe are now accessible from marineregions.org. The sites are integrated into the <u>marine gazetteer</u>. Selection criteria used when defining a 'marine' site, was by checking if the site falls (partly) within the Exclusive Economic Zone of the country, based on the version 7 of the high resolution EEZ GIS cover. Currently 2894 marine Natura 2000 sites are available. The GIS boundaries of these sites, defined by the EU Habitat and Bird directives are provided to Marine Regions in real time through a webservice developed by the <u>European Environmental Agency</u>. EEA map services are available <u>here</u>.

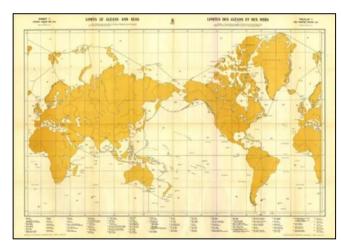
Database structure: one geographic entity (geo-object) has

- ✓ Coordinates (lat-long)
- Placetype
 - ✓ Physical: bay-trench-sandbank-sea...
 - ✓ Administrative: Territorial sea, contiguous zone, EEZ
- ✓ But can have different names: name not unique!!
- ✓ Multiple relations between two geo-objects
 - ✓ North Sea part of NEA
 - ✓ North Sea adjacent to Norwegian Sea
 - ✓ Rhine river flows out into the North Sea

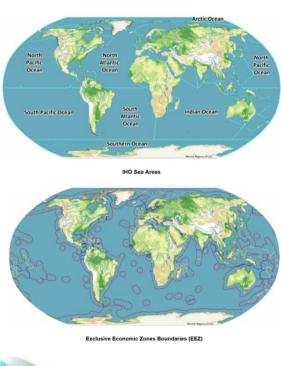


Parent classification of marine waters

- ✓ Physical: world seas of IHO
- ✓ Administrative: EEZ boundaries

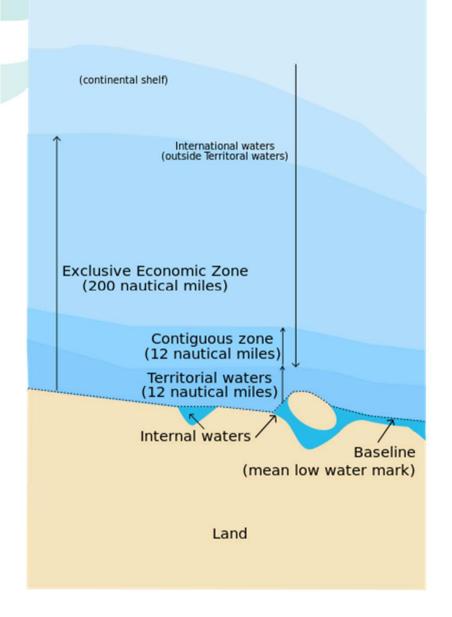


'Limits of Oceans and Seas', IHO, 1953





EEZ Boundaries



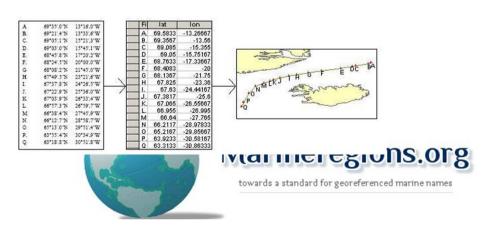
UN Sea convention (UNCLOS - Montego Bay, 1982)

- Territorial seas
- Contiguous zone
- Exclusive Economical Zone
- International Waters



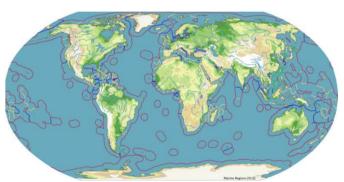
Marbound (EEZ Boundaries)

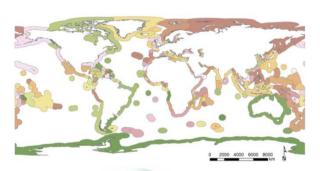
- ✓ Applications
 - √ hierarchy gazetteer
 - ✓ national marine checklists
- ✓ Not freely available: digitisation
 - ✓ Compilation existing sources
 - ✓ Established in treaties
 - √ 200NM of baseline
 - ✓ < 400NM=>Median line



EEZ Boundaries

- √ Two products
 - ✓ GIS with boundaries (polylines)
 - ✓ GIS with polygones EEZ (merge with Global Self-consistent, Hierarchical, High-resolution Shoreline Database (NOAA))







EEZ Boundaries

- ✓ Version control
- ✓ Include comments from community

Shapefiles

Web services

Static Maps

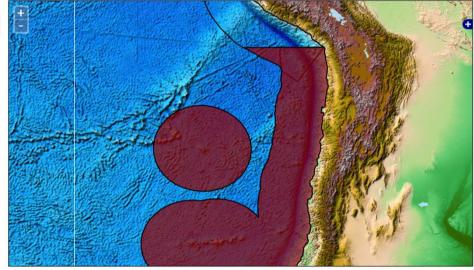
Shapefiles

- ▼ Exclusive Economic Zones Boundaries (EEZ)
 - World EEZ v7 (2012-11-20, 67 MB) downloads: 2425
 [Download] [Low res] [KML] [Change history] [Known issues]
 - World EEZ v6.1 (2011-05-12, 84 MB) downloads: 5579
 [Download] [Low res] [KML] [Change history] [Known issues]
 - World EEZ v6 (2011-03-30, 84 MB) downloads: 6367
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 - World EEZ v5 (2009-10-01, 86 MB) downloads: 3799
 [Download] [KML] [Change history] [Known issues]
 - World EEZ v4 (2009-08-11, 86 MB) downloads: 610 [Download] [KML] [Change history]
 - World EEZ v3 (2009-04-30, 85 MB) downloads: 604
 [Download] [KML] [Change history]
 - World EEZ v2 (2008-10-31, 4 MB) downloads: 1150 [Download] [Change history]
 - World EEZ v1 (2006-01-26, 4 MB) downloads: 1713
 [Download]

Marbound (EEZ Boundaries)

✓ Sensitive information: disputed areas

Map interface
Methodology
About



Lat: -35.39 Lon:-78.53

WORLD EXCLUSIVE ECONOMIC ZONES, VERSION 7 (2012)

Exclusive Economic Zone	Country	Sovereign	EEZ_ID	MRGID	Date change	of last	Area (m^2)	Longitude	Latitude
Chilean Exclusive Economic Zone (disputed - Chilean point of view)	Chile	Chile	224	8465	2011/03/3	30	2.985193892E12	-76.145857295486	-38.879311683859



Brussels, 27 February 2012

Mr.Koen Verlaeckt Secretary General Department of Foreign Affairs Flemish Government Boudenwijnlaan 30 b80 Brussles 1000



Dear Mr. Secretary-General,

I refer to my letter dated 7 February 2011, regarding the clarification by the Maritime Institute of Flanders (VLIZ) of the data showed in its web page Maritime Boundaries Debbes.

On this respect I would like to point out that although some of the information presented in the said database regarding the boundary Chile – Peru was corrected, there is still some information that needs to be clarified by the VLIZ to be accurate and impartial regarding this boundary:

- a clear distinction is made between the maritime boundary Chile/Argentina (with a link to the Peace and Friendship Treaty of 1984) and the maritime boundary Chile/Pera. In the latter case there is only a link to a Peruvian document published in the newspaper "El Comercio", in March 2009, There is no reference to any source to explain the Chilean position which is the international recognized boundary between both countries.
- VLIZ has not incorporated any Chilean source of information, in spite that the Treaties of 1952 and 1954 are widely available in different web pages, including the one to the Division of Ocean Affairs of the United Nations Organizations.
- The documentary and geographical information regarding the Chilean boundaries has mistakes. For example, Easter Island (Isla de Pascua) is not a "dependency" (dependencia) neither an "overseas territory" (territorio de ultramar) of Chile, but part of its territory.

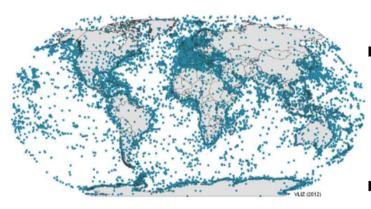
I would very much appreciate if these comments were passed to VLIZ in order to incorporate them to its Maritime Boundaries Database.

I take this opportunity to renew the assurances of my highest consideration.



Data content Marine Regions

• 36,081 place names, representing 28,814 marine geographic places



- Regional checklists
 (Antarctic, Black Sea, North Sea...)
- Global checklists
 (SCUFN, UNESCO Marine Heritage Sites, ASFA, WoRMS....)
- Marine boundaries
 (EEZ, IHO, MEOW, LME, FAO Fishing zones, SeaVox, Longhurst, ICES, Natura2000 Sites, Marine Regions)

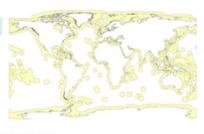


Marine Regions: intersect EEZ and IHO Seas

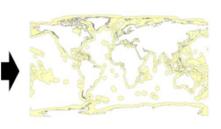
Intersect Tool

Erase EEZ and countries

Merge of both layers







MRGID 25281

Status Proposed standard 👩

Name Language Name Source

English United States part of the Gulf of Mexico

PlaceType Marine Region

Latitude 27° 29' 10" N (27.48611°)

Longitude 88° 43' 49.9" W (-88.730529°)

Min. Lat 23° 49' 22" N (23.8228°)

Min. Long 97° 46' 9.6" W (-97.7693°)

Max. Lat 30° 42' 4" N (30.7011°)

Max. Long 80° 23' 15.2" W (-80.3876°)

Relations Part of Gulf of Mexico (IHO Sea Area)

Part of United States Exclusive Economic Zone (EEZ) [view hierarchy]



High seas of the North Atlantic Ocean

PlaceType Marine Region

Latitude 30° 6' 31.3" N (30.108681°)

Longitude 38° 20' 38.8" W (-38.344124°)

Min. Lat 0° 0' 0" N (0°)

Min. Long 76° 58' 3.1" W (-76.9675°)

Max. Lat 63° 18' 48" N (63.3133°)

Max. Long 3° 14' 7.5" E (3.2354°)

Relation Part of North Atlantic Ocean (IHO Sea Area) [view hierarchy]



Marine Regions: MRGID



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Place names change over time, and the same names may be used for different locations. Available gazetteers may find locations of some marine place names, but a truly global standard for marine place names is lacking. Marine Regions tries to establish for the first time a standardized list of georeferenced marine place names and marine areas. In order to preserve the identity of the marine geographic objects from the database, and to name and locate the geographic resources on the web, we promote the Marine Regions Geographic IDentifier, or the MRGID.

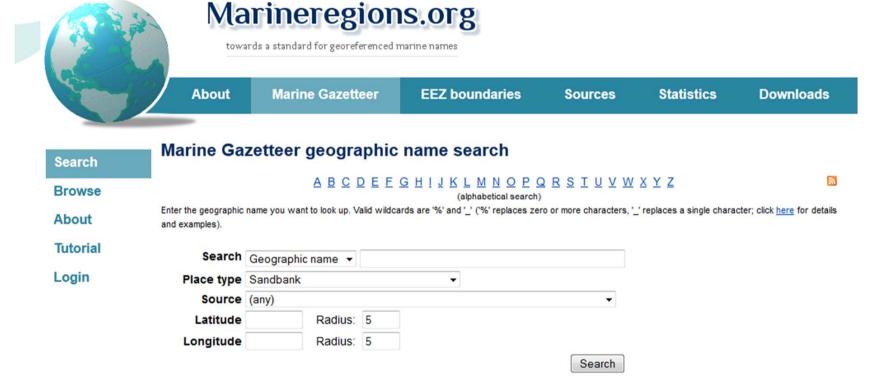
MRGID

Marine Regions Geographic IDentifier

- · unique:
- persistent:
- identifier: to refer to a Geographic Object

For an identifier to be persistent, it requires the governing body to arrange for the identifier to be available for the long term. Use of the MRGID, as URI and persistent identifier has the commitment of the Flanders Marine Institute, issuing the identifier to maintain the http domain registration, and a strategy for managing the domain and the web servers.









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Marine Gazetteer Search results

Your search for "returned 132 records, showing records 1-100

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Adlergrund (Sandbank)

Tutorial Akkaert Bank (Sandbank)

Amrumbank (Sandbank)

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Bakkegrund (Sandbank)

Baland Bank (Sandbank)

Balgzand (Sandbank)

Ballastplaat (Sandbank)

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Banjaard (Sandbank)

Bank zonder Naam (Sandbank)

Bankje van Zoutelande (Sandbank)

Bergen Bank (Sandbank)

entral/





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Marine Gazetteer Placedetails

MRGID 2437

Status Proposed standard 👩

Name Language Name Source

Dutch Akkaert Bank ASFA thesaurus

PlaceType Sandbank

Latitude 51° 25' 22.6" N (51.42294°)

Longitude 2° 52' 37.1" E (2.876971°)

Precision 14280 meter

Min. Lat 51° 21' 17.8" N (51.3549°)

Min. Long 2° 42' 8.4" E (2.7023°)

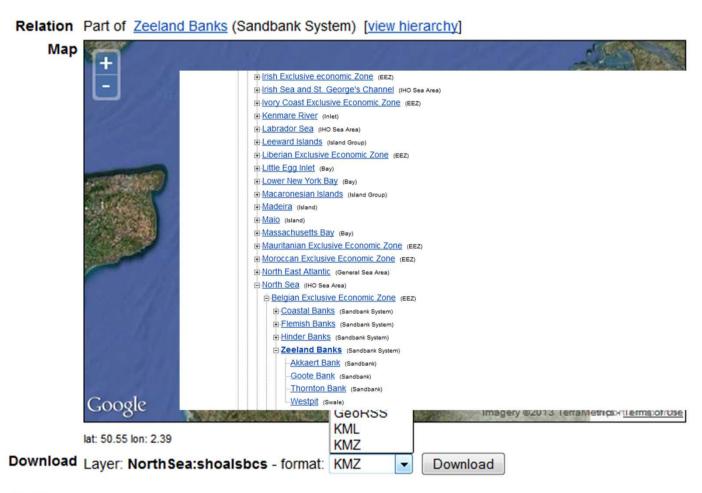
Max. Lat 51° 29' 27.4" N (51.491°)

Max. Long 3° 3' 5.8" E (3.0516°)

Source ASFA thesaurus, available online at http://www4.fao.org/asfa/asfa.htm







Edit history Last edited on 2005-01-01 00:00:00 by db_admin





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utorial	Placetyp	e*				
.ogout	Languag	le* English ▼				
ogout	Parent Locali	ty*		[help]		
	Latitue	de	[decimal degrees]			
	Longitue	de	[decimal degrees]			
	Minimum Latitue	de	[decimal degrees]			
	Minimum Longitue	de	[decimal degrees]			
	Maximum Latitue	de	[decimal degrees]			
	Maximum Longitue	de	[decimal degrees]			
		Create				



Web services

1. WMS | WFS services: retrieve maps | features

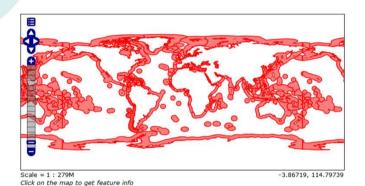
SOAP | Restful services: retrieve names,
 MRGID, coordinates,
 classifications



WMS/WFS Web services

http://geo.vliz.be/geoserver/MarineRegions/wms?Request=getCapabilities

http://geo.vliz.be/geoserver/MarineRegions/wfs?Request=getCapabilities



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MRGID 29136

Status Proposed standard 📀

Name Language Name Source

German Seevogelschutzgebiet Natura 2000 Sites, European Environment Agency (EEA)

Helgoland 2011)

PlaceType Natura 2000 Special Protection Area (SPA, EU Birds Directive)

Latitude 54° 17' 17.2" N (54.288107°)

Longitude 8° 9' 12.5" E (8.153459°)

Source Natura 2000 Sites, European Environment Agency (EEA) (Updates 2011), available online at

http://www.eea.europa.eu/data-and-maps/data/natura-2

Links http://natura2000.eea.europa.eu/natura2000/SDFPublic.aspx?site=DE1813491

Relations Part of North Sea (IHO Sea Area) [view hierarchy

Part of German Exclusive Economic Zone (EEZ) [view hierarchy]

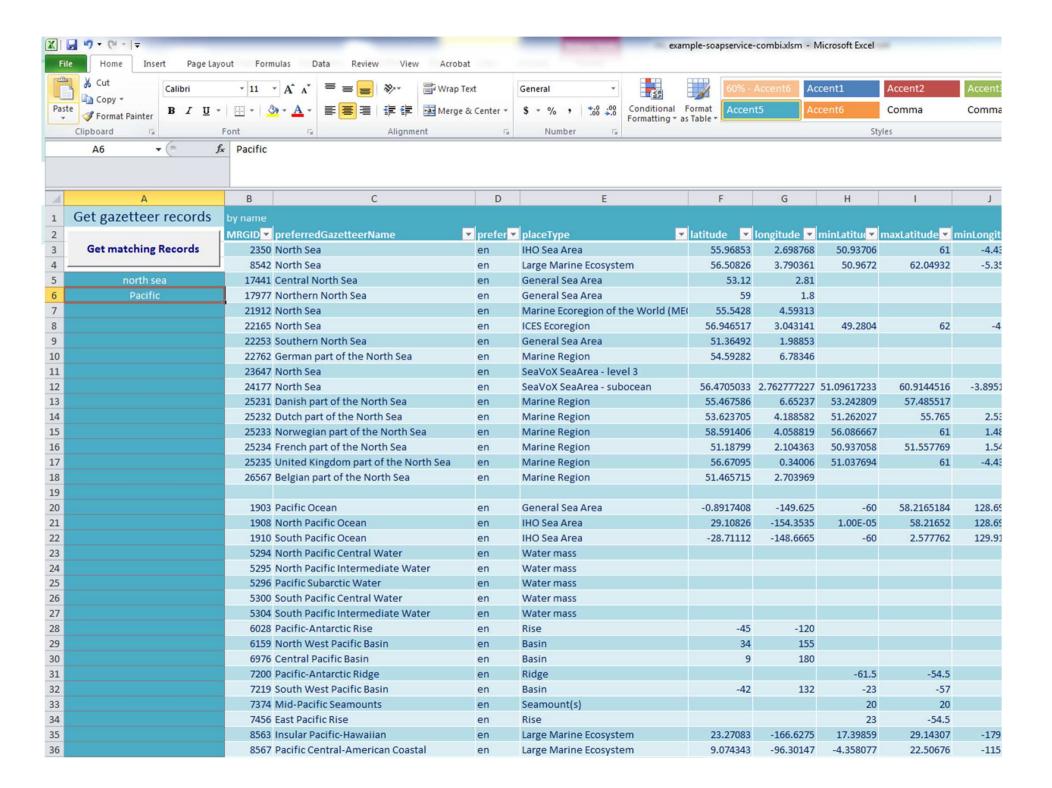




Web services

SOAP services | Rest services: methods

Search	Restfull methods	
Browse		
About	/getGazetteerRecordsByName	Show/Hide List Operations Expand Operations Raw
Tutorial	/getGazetteerRecordsByName.json/{name}/{like}/	Get matching records by name
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	/getGazetteerNamesByMRGID	Show/Hide List Operations Expand Operations Raw



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- Exclusive Economic Zones Boundaries (EEZ)
- IHO Sea Areas
- Marineregions: intersect of EEZ's and IHO areas
- Marine and land zones: the union of world country boundaries and
- World Marine Heritage Sites
- FAO Fishing Areas
- Large Marine Ecosystems of the World
- ▶ Longhurst Biogeographical Provinces
- ▶ ICES Ecoregions
- OSPAR Boundaries
- Marine Ecoregions of the World, MEOW (Spalding et al., 2007)



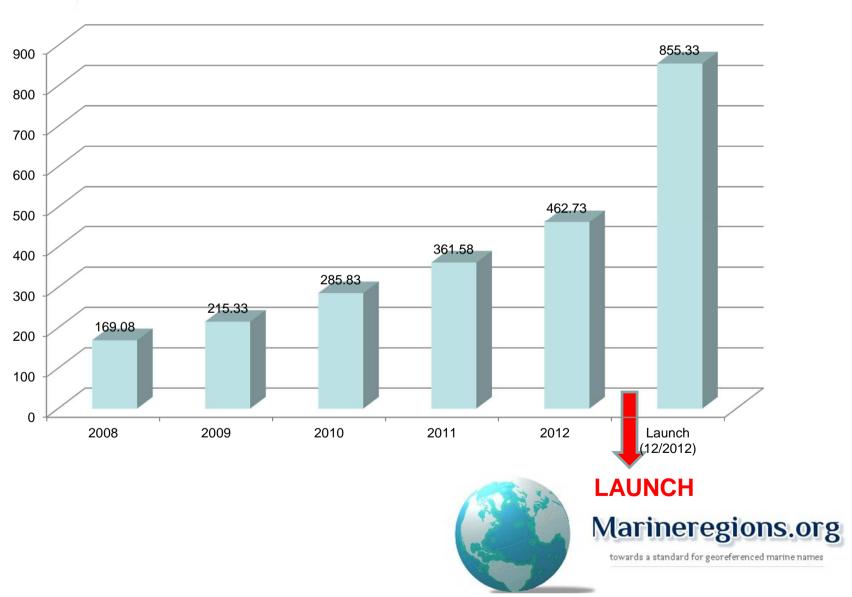


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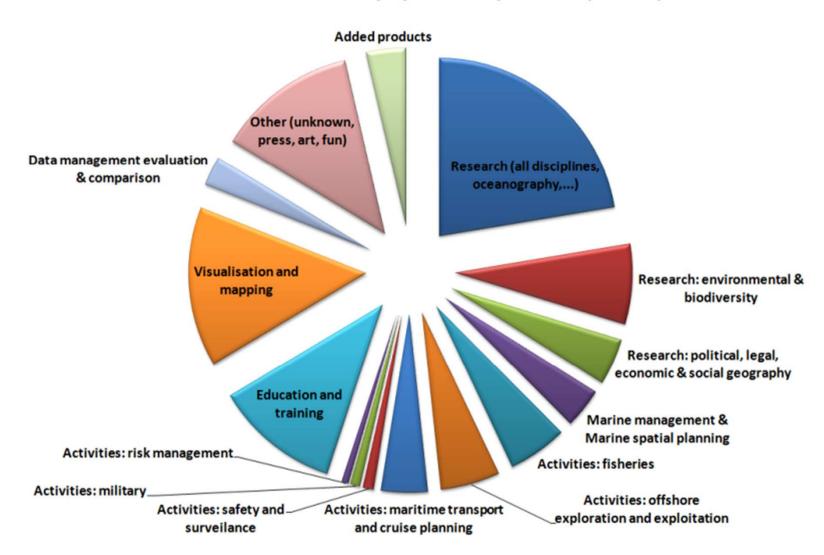
Users

Downloads/month



Users

Use maritime boundaries 01/04/2012. Analysed 100 % (n = 8336)



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- Fisheries and Aquaculture Resources Use and Conservation Division Food and Agriculture Organization (FAO)

Quality control EEZ Boundaries & link between the FAO Marine Areas and Marine Regions

- Mr. Evan Centanni
 Political Geography Now
 Quality control by providing feedback on political maritime geography issues
- Mr. David Forcucci
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 Quality control of the EEZ boundaries and providing geographic information from the <u>Arctic region</u> to Marine Regions.
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Future plans

Further shape Editorial board

New version EEZ

New content



Thank you

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