



Protected Sites

Geodatabase

Version 3

WP9 Data Management and Synthesis

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1. Introduction

CoCoNet is a European project that will produce guidelines to design, manage and monitor network of MPAs and Ocean Wind Farms. The Project covers a high number of Countries and involves researchers covering a vast array of subjects, developing a timely holistic approach and integrating the Mediterranean and Black Seas scientific communities through intense collective activities and a strong communication line with stakeholders and the public at large. Within this project we aim at providing a common framework for marine data management and final synthesis of the outcomes of different scientific topics from heterogeneous sources. An integrated Geodatabase and a WebGIS system will be the linking tool for all partners, regions and thematic research. It will involve the entire consortium at different levels in topics such as data provision and integration, GIS products, GIS interpretation, data archiving and data exchange. The work is organized around the following main objectives:

- assess the rules for data and metadata sharing between partners reviewing the existing common European protocols and standards (INSPIRE);
- design and implement data repositories (Marine Geodatabase) following the INSPIRE Directive, to store and retrieve the spatial data collected during the lifespan of the project for the Mediterranean and Black Sea areas and for the pilot study areas;
- develop the COCONET WebGIS to integrate the multi scale GIS layers derived from all regions going towards an integrated management of the marine resources;
- develop an analytical and evaluative framework for designing, managing and monitoring regional networks of MPAs, including wind farms, centered on science-based guidelines, criteria, concepts and models.

The CoCoNet project produced the architecture of thirteen Geodatabases storing data about the major themes starting from the INSPIRE Directive: Protected sites, Habitats and Biotopes, Threats, Geology, Biodiversity, Offshore Wind Farms, Elevation, Maritime Units, Biogeographical and Sea Regions, Oceanography, Socioeconomics, Connectivity, Habitat Mapping.

The final goal will be to deliver digital maps of networks of marine protected areas and offshore wind farms as final synthesis of the outcome from all scientific topics. The integrated Geodatabase will be a fundamental tool to produce the guidelines to design, manage and monitor network of MPAs, and an enriched wind atlas for both the Mediterranean and the Black Seas. The Project will identify groups of putatively interconnected MPAs in the Mediterranean and the Black Seas, shifting from local (single MPA) to regional (Networks of MPAs) and basin (network of networks) scales. The identification of physical and biological connections with clear the processes that govern patterns of biodiversity distribution. This will enhance policies of effective environmental management, also to ascertain if the existing MPAs are sufficient for ecological networking and to suggest how to design further protection schemes based on effective exchanges between protected areas.

2. Geodatabase design

The INSPIRE data model is the conceptual model which the Protected Sites Geodatabase is inspired. The logic model is built in Microsoft Visio 2007 using ESRI classes. The physical model is a ESRI File Geodatabase, with Feature Classes, Object Classes, Domains, Subtypes, Relationship Classes, Feature Dataset and RasterCatalogs.

Feature Class: a collection of geographic features with the same geometry type (such as point, line, or polygon), the same attributes, and the same spatial reference. Feature classes can be stored in geodatabases, shapefiles, coverages, or other data formats. Feature classes allow homogeneous features to be grouped into a single unit for data storage purposes. For example, highways, primary roads, and secondary roads can be grouped into a line feature class named "roads." In a geodatabase, feature classes can also store annotation and dimensions

Object Class: In a geodatabase, a collection of nonspatial data of the same type or class. While spatial objects (features) are stored in feature classes in a geodatabase, nonspatial objects are stored in object classes.

Relationship Class: An item in the geodatabase that stores information about a relationship. A relationship class is visible as an item in the ArcCatalog tree or contents view.

Domains: The range of valid values for a particular metadata element.

Code Value Domain: A type of attribute domain that defines a set of permissible values for an attribute in a geodatabase. A coded value domain consists of a code and its equivalent value. For example, for a road feature class, the numbers 1, 2, and 3 might correspond to three types of road surface: gravel, asphalt, and concrete. Codes are stored in a geodatabase, and corresponding values appear in an attribute table.

Subtype: In geodatabases, a subset of features in a feature class or objects in a table that share the same attributes. For example, the streets in a streets feature class could be categorized into three subtypes: local streets, collector streets, and arterial streets. Creating subtypes can be more efficient than creating many feature classes or tables in a geodatabase.

Feature Dataset: In ArcGIS, a collection of feature classes stored together that share the same spatial reference; that is, they share a coordinate system, and their features fall within a common geographic area. Feature classes with different geometry types may be stored in a feature dataset.

Raster Catalog: A collection of raster datasets defined in a table of any format, in which the records define the individual raster datasets that are included in the catalog. Raster catalogs can be used to display adjacent or overlapping raster datasets without having to mosaic them together into one large file (<http://support.esri.com/en/knowledgebase/GISDictionary/term/object%20class>).

The Protected Sites Geodatabase stores spatial data (vector, grid and raster) and nonspatial data.

The structure with data of the Geodatabase is available as .xml file, OGC services (WFS, WMS) and in the Google Earth file format (.kmz).

3. Geodatabase architecture

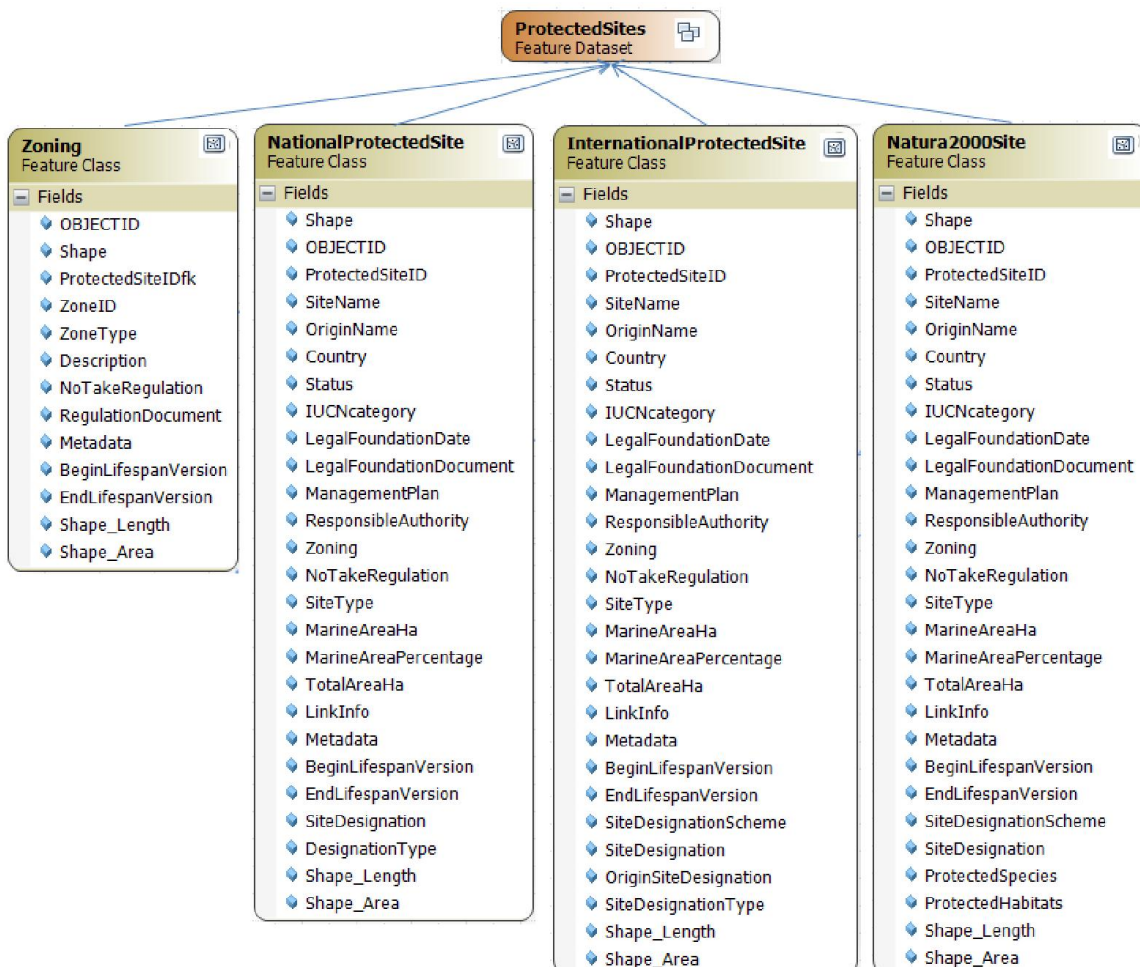
The Protected Sites Geodatabase consists of one Feature Dataset named ProtectedSites and used to store vector data (NationalProtectedSite, InternationalProtectedSite, Natura2000site, Zoning). In the Geodatabase there are eight tables: ActivityManagement, DocumentCitation, PresentActivitiesAndImpactsType, PresentHabitatType, PresentSpeciesType, RelatedParty, SocioEconomicInfo and SourceMethodType. The tables are linked to the Feature Classes though Relationship Classes. Domains and Subtypes are present in the Feature Classes and in the Object Classes.

3.1. Feature Dataset- ProtectedSites

The dataset collects all the protected sites at sea and until a distance inland from the coast of 15 km. A protected site is “An area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives” (INSPIRE Directive, r4618-ir).The Feature Dataset consists of four Feature Classes:

- Zoning
- NationalProtectedSite
- InternationalProtectedSite
- Natura2000site

GeometryType: None



3.1.1. Feature Class: Zoning

The Feature Class collects the zoning of the protected site. Several sites have a regulation plan that defines internal zones with different kind of protection. This areas are represented by polygons with a different color based on the protection degree.

GeometryType: Polygon

Field	Type	Restriction	Description
ProtectedSiteID	String	None	The identification string of the protected site to which the zone refers
ZoneID	String	None	The identification string of the zone
ZoneType	String	Code Value Domain	The type of the zone (core zone, buffer zone, etc)
Description	String	None	A brief description of the protection in the zone
NoTakeRegulation	String	Code Value Domain	This field indicates if the zone is a no-take zone or not
RegulationDocument	String	None	The title or the link to the management plan/regulation document
Metadata	String	None	The name of the metadata file available on the SeaDataNet repository
BeginLifespanVersion	Date	DD/MM/YYYY	Date at which this version of the spatial object was inserted or changed in the spatial data set
EndLifespanVersion	Date	DD/MM/YYYY	Date at which this version of the spatial object was superseded or retired in the spatial data set

Note 1: the ID fields have to be unique in the entire Geodatabase

3.1.2. Feature Class: NationalProtectedSite

The Feature Class collects all the protected sites with a national designation.

GeometryType: Polygon

Field	Type	Restriction	Description
ProtectedSiteID	String	None	The identification string of the protected site
SiteName	String	None	The name of the protected site
OriginName	String	None	The name of the protected site in the origin language
Country	String	Code Value Domain	The country where the protected site is located
Status	String	Code Value Domain	The legal status of the protected sites (designated, proposed, etc)
IUCNcategory	String	Code Value Domain	The category defined by IUCN at which the protected site belongs
LegalFoundationDate	Integer	None	The date in which the protected site was designated
LegalFoundationDocument	String	None	The establishment document of the protected site
ManagementPlan	String	None	The title or the link to the management plan of the protected site
ResponsibleAuthority	String	None	The responsible authority of the protected site

Zoning	String	Code Value Domain	The field indicates if the protected site has a zoning or not
NoTakeRegulation	String	Code Value Domain	This field indicates if the zone is a no-take zone or not
SiteType	String	Code Value Domain	This field indicates if the protected site is strictly marine, partially marine or terrestrial
MarineAreaHa	Double	None	The marine surface of the protected site in hectares
MarineAreaPercentage	Double	None	The percentage of the marine surface of the protected site
TotalAreaHa	Double	None	The total area of the protected site in hectares
LinkInfo	String	None	Link to the protected site webpage or to a webpage with information about it
Metadata	String	None	The name of the metadata file available on the SeaDataNet repository
BeginLifespanVersion	Date	DD/MM/YYYY	Date at which this version of the spatial object was inserted or changed in the spatial data set
EndLifespanVersion	Date	DD/MM/YYYY	Date at which this version of the spatial object was superseded or retired in the spatial data set
SiteDesignation	String	Code Value Domain	The designation of the protected site (Reserve, Park, etc)
DesignationType	String	Code Value Domain	The field indicates if the designation of the protected site is national, regional, federal, etc

3.1.3. Feature Class: InternationalProtectedSite

The Feature Class collects all the protected sites with an international designation.

GeometryType: Polygon

Field	Type	Restriction	Description
ProtectedSiteID	String	None	The identification string of the protected site
SiteName	String	None	The name of the protected site
OriginName	String	None	The name of the protected site in the origin language
Country	String	Code Value Domain	The country where the protected site is located
Status	String	Code Value Domain	The legal status of the protected sites (designated, proposed, etc)
IUCNcategory	String	Code Value Domain	The category defined by IUCN at which the protected site belongs
LegalFoundationDate	Integer	None	The date in which the protected site was designated
LegalFoundationDocument	String	None	The establishment document of the protected site
ManagementPlan	String	None	The title or the link to the management plan of the protected site
ResponsibleAuthority	String	None	The responsible authority of the protected site
Zoning	String	Code Value Domain	The field indicates if the protected site has a zoning or not
NoTakeRegulation	String	Code Value Domain	This field indicates if the zone is a no-take zone or not

SiteType	String	Code Value Domain	This field indicates if the protected site is strictly marine, partially marine or terrestrial
MarineAreaHa	Double	None	The marine surface of the protected site in hectares
MarineAreaPercentage	Double	None	The percentage of the marine surface of the protected site
TotalAreaHa	Double	None	The total area of the protected site in hectares
LinkInfo	String	None	Link to the protected site webpage or to a webpage with information about it
Metadata	String	None	The name of the metadata file available on the SeaDataNet repository
BeginLifespanVersion	Date	DD/MM/YYYY	Date at which this version of the spatial object was inserted or changed in the spatial data set
EndLifespanVersion	Date	DD/MM/YYYY	Date at which this version of the spatial object was superseded or retired in the spatial data set
SiteDesignationScheme	String	Code Value Domain	The scheme from which the designation code comes (Barcelona Convention, Ramsar Convention, etc)
SiteDesignation	String	Code Value Domain	The actual site designation (SPAMI, Ramsar site, etc)
OriginSiteDesignation	String	None	The actual site designation in the origin language
SiteDesignationType	String	Code Value Domain	The designation type indicates the main reason for conservation

3.1.4. Feature Class: Natura2000site

The Feature Class collects all the protected sites that belong to the Natura 2000 Network (SCI, SAC, SPA, pSCI, pSPA).

GeometryType: Polygon

Field	Type	Restriction	Description
ProtectedSiteID	String	None	The identification string of the protected site
SiteName	String	None	The name of the protected site
OriginName	String	None	The name of the protected site in the origin language
Country	String	Code Value Domain	The country where the protected site is located
Status	String	Code Value Domain	The legal status of the protected sites (designated, proposed, etc)
IUCNcategory	String	Code Value Domain	The category defined by IUCN at which the protected site belongs
LegalFoundationDate	Integer	None	The date in which the protected site was designated
LegalFoundationDocument	String	None	The establishment document of the protected site
ManagementPlan	String	None	The title or the link to the management plan of the protected site
ResponsibleAuthority	String	None	The responsible authority of the protected site
Zoning	String	Code Value Domain	The field indicates if the protected site has a zoning or not

NoTakeRegulation	String	Code Value Domain	This field indicates if the zone is a no-take zone or not
SiteType	String	Code Value Domain	This field indicates if the protected site is strictly marine, partially marine or terrestrial
MarineAreaHa	Double	None	The marine surface of the protected site in hectares
MarineAreaPercentage	Double	None	The percentage of the marine surface of the protected site
TotalAreaHa	Double	None	The total area of the protected site in hectares
LinkInfo	String	None	Link to the protected site webpage or to a webpage with information about it
Metadata	String	None	The name of the metadata file available on the SeaDataNet repository
BeginLifespanVersion	Date	DD/MM/YYYY	Date at which this version of the spatial object was inserted or changed in the spatial data set
EndLifespanVersion	Date	DD/MM/YYYY	Date at which this version of the spatial object was superseded or retired in the spatial data set
SiteDesignationScheme	String	Code Value Domain	The scheme from which the designation code comes (Habitat Directive, Bird Directive)
SiteDesignation	String	Code Value Domain	The actual site designation (SCI, SPA, etc)
ProtectedSpecies	Integer	None	The number of species under protection according to the Natura2000 lists
ProtectedHabitats	Integer	None	The number of habitats under protection according to the Natura2000 lists

3.2. Object Classes

3.2.1. Object Class: PresentActivitiesAndImpactsType

Impacts resulting from human activities or natural process that positively or negatively affect the conservation status of the Protected Site. Information needed to inform evaluation of conservation status of a Protected Site (INSPIRE Directive, r4618).

Field	Type	Restriction	Description
ProtectedSiteIDfk	String	None	The identification string of the protected site. The field is used as foreign key
ActivitiesAndImpactsScheme	String	Code Value Domain	The scheme from which the activity/impact code and description come
ActivityAndImpactID	String	None	The code of the activity or impact that occur on the site
ActivityAndImpact	String	None	The activities or impacts that occur on the site
ActivityIntensity	String	Code Value Domain	The intensity of the activity's influence on the site
NatureOfInfluence	String	Code Value Domain	The nature of influence of the activity on the site (positive, negative or natural)
PercentageUnderActivity	Integer	None	The percentage of the protected site over which the activity occurs
Source	String	None	The source of the information in the Object Class

3.2.2. Object Class: PresentHabitatType

Type of habitats existing in the protected site.

Field	Type	Restriction	Description
ProtectedSiteDfk	String	None	The identification string of the protected site. The field is used as foreign key
HabitatGroup	String	Code Value Domain	Category at which the habitat belongs (Biogenic habitat, Seagrass, etc)
ReferenceHabitatTypeScheme	String	Code Value Domain	The scheme from which the habitat code and description come
ReferenceHabitatTypeName	String	None	Name of the habitat
UnderProtection	String	None	The field indicates if the habitat is under protection or not
Covered_ha	Double	None	Surface covered by the habitat in hectares
Source	String	None	The source of the information in the Object Class

3.2.3. Object Class: PresentSpeciesType

Species existing in the protected site.

Field	Type	Restriction	Description
ProtectedSiteDfk	String	None	The identification string of the protected site. The field is used as foreign key
ReferenceSpeciesName	String	None	The scientific name of the taxa
SpeciesGroup	String	Code Value Domain	Group at which the species belongs
Kingdom	String	None	Kingdom from WoRMS repository
Phylum	String	None	Phylum from WoRMS repository
Class	String	None	Class from WoRMS repository
Order_	String	None	Order from WoRMS repository
Family	String	None	Family from WoRMS repository
Genus	String	None	Genus from WoRMS repository
Species	String	None	Species from WoRMS repository
Author	String	None	Author of the species from WoRMS
WoRMS	Date	DD/MM/YYYY	Date of the research on WoRMS repository
UnderProtection	String	None	The field indicates if the species is under protection or not
Description	String	None	A brief description of the species or population
Note_	String	None	Note
Source	String	None	The source of the information in the Object Class

3.2.4. Object Class: ActivityManagement

Activities played inside the protected site and how this activities are managed.

Field	Type	Restriction	Description
AreaDfk	String	None	The identification string of the zone. The field is used as foreign key
Activity	String	None	

ManagementType	String	Code Value Domain	
Source	String	None	

3.2.5. Object Class: SocioEconomicInfo

Socioeconomic information linked to the protected site, for example the number of tourists per year.

Field	Type	Restriction	Description
ProtectedSiteDfk	String	None	The identification string of the protected site. The field is used as foreign key
Year	Integer	None	
Parameter	String	None	
Value	Double	None	
UnitOfMeasure	String	None	
Source	String	None	

3.2.6. Object Class: DocumentCitation

Citation for the purposes of unambiguously referencing a document (INSPIRE Directive, r4618).

Field	Type	Restriction	Description
ObjectIDfk	String	None	The identification string of the protected site. The field is used as foreign key
Name	String	None	
Date_	Date	DD/MM/YYYY	
DateType	String	Code Value Domain	
Link	String	None	
ShortName	String	None	
SpecificReference	String	None	
DateEnteredIntoForce	String	None	
DateRepealed	Date	DD/MM/YYYY	
IdentificationNumber	String	None	
LegislationLevel	String	Code Value Domain	
OfficialDocumentNumber	String	None	

3.2.7. Object Class: RelatedParty

An organization or a person with a role related to a resource (INSPIRE Directive, r4618).

Field	Type	Restriction	Description
ObjectIDfk	String	None	Identification string of the protected site object. The field is used as foreign key.
IndividualName	String	None	Name of the related party (INSPIRE Directive, r4618).
PositionName	String	None	Position of the party in relation to a resource, such as head of department (INSPIRE Directive, r4618).
Role	String	Code Value	Role(s) of the party in relation to a resource, such as owner

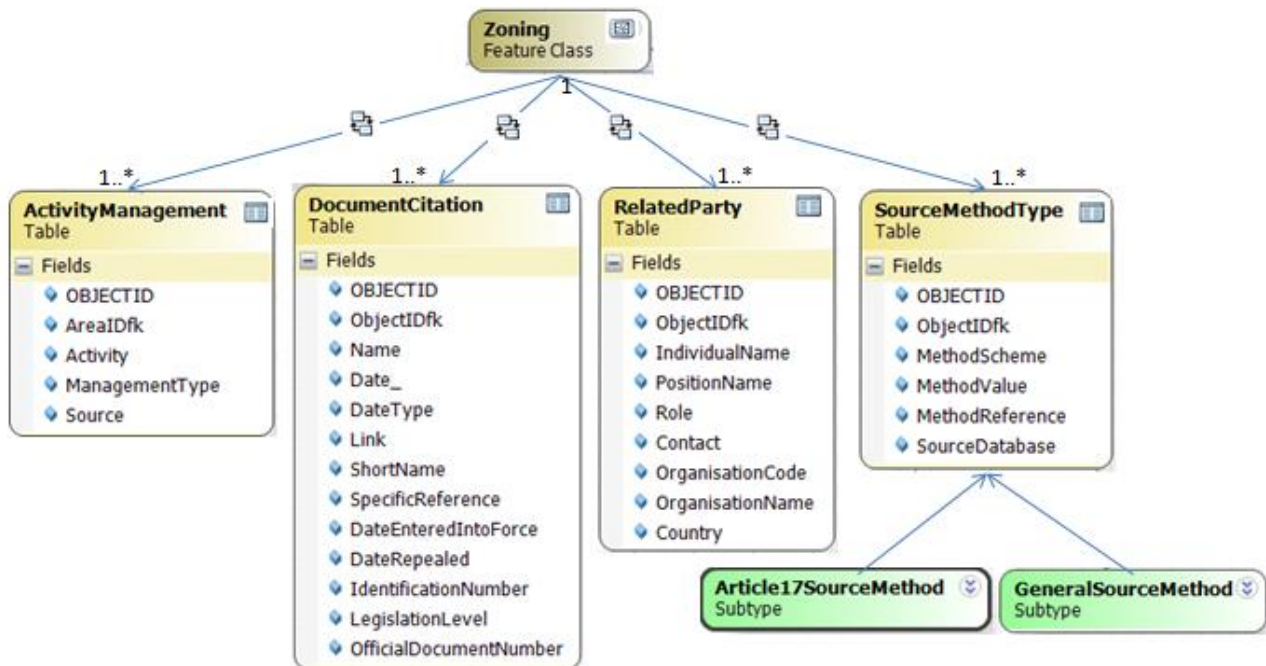
		Domain	(INSPIRE Directive, r4618).
Contact	String	None	Contact information for the related party (INSPIRE Directive, r4618).
OrganizationCode	String	None	Code of the related organization (INSPIRE Directive, r4618).
OrganizationName	String	None	Name of the related organization (INSPIRE Directive, r4618).
Country	String	Code Value Domain	Country of the related organization (INSPIRE Directive, r4618).

3.2.8. Object Class: SourceMethodType

Contains metadata about specific instances of elevation object. Refers to the methods on how observations have been made or recorded (INSPIRE Directive, r4618).

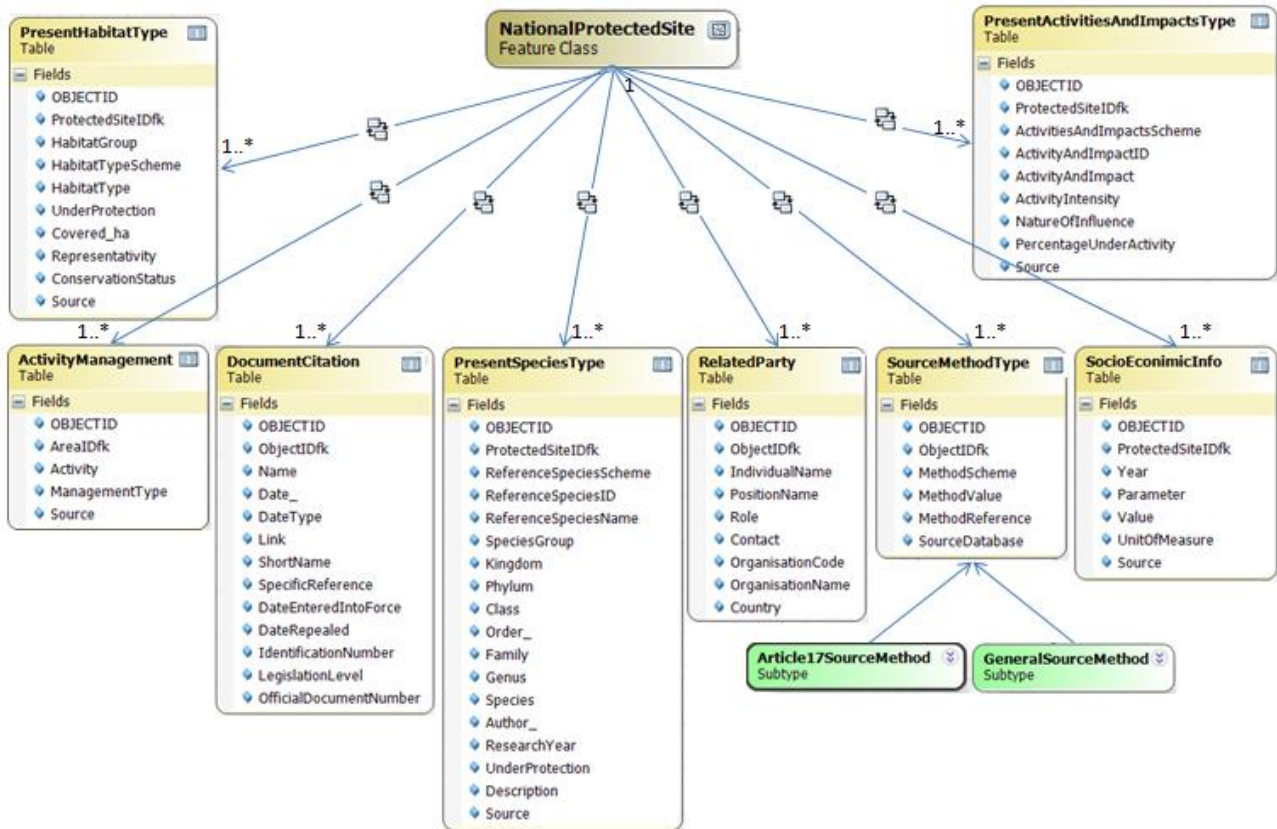
Field	Type	Restriction	Description
ObjectIDfk	String	None	Identification string of the protected site object. The field is used as foreign key.
MethodScheme	String	None	Scheme used to compiling the Method Value field (Article17SourceMethodValue or GeneralSourceMethod) (INSPIRE Directive, r4618).
MethodValue	String	None	Method by which the data on the object is collected (INSPIRE Directive, r4618).
MethodReference	String	None	A reference to a description of the method by which the data on the object is collected (INSPIRE Directive, r4618).
SourceDatabase	String	None	Name of the database where the object data is retrieved from (INSPIRE Directive, r4618).

3.3. Relationship Classes



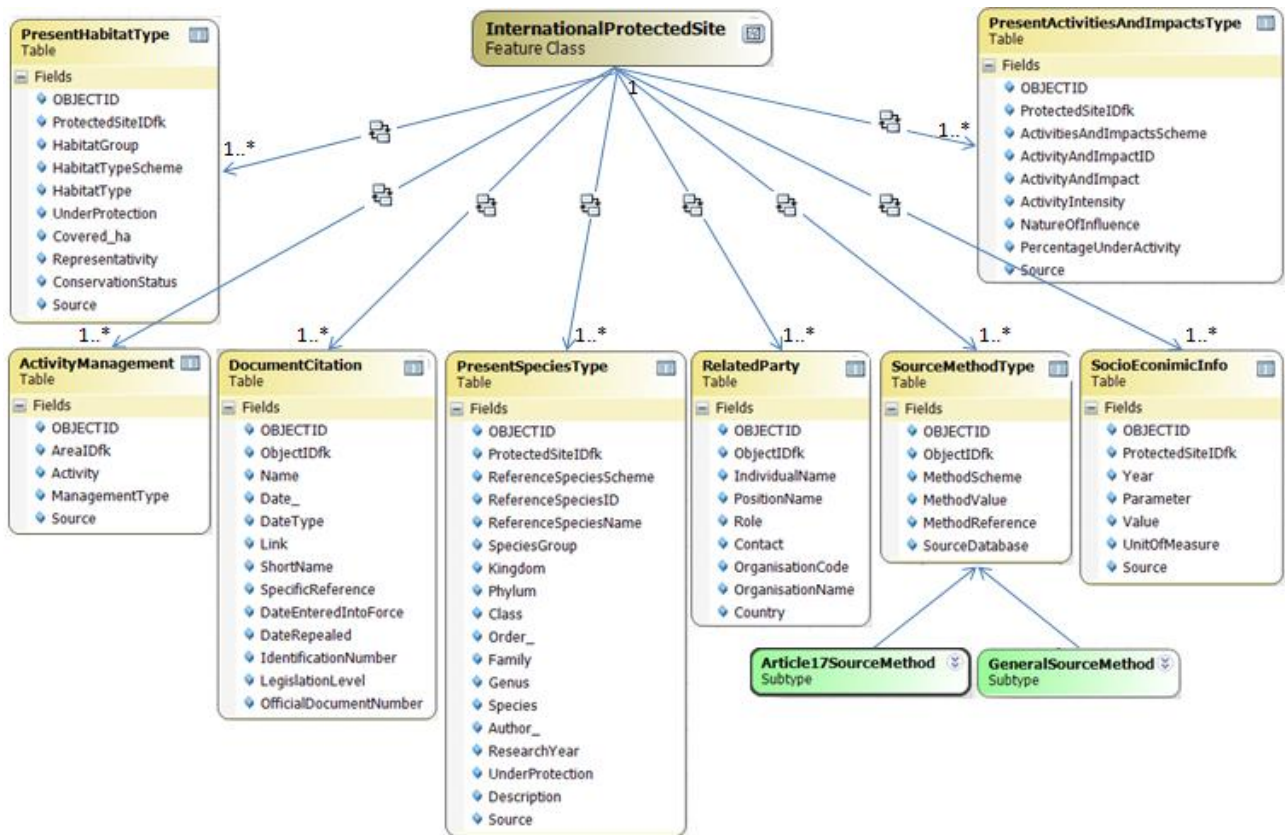
Name	Multiplicity	Origin class	Destination class	Primary key	Foreign key
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ZoningHasActivityManagement	1→1..*	Zoning	ActivityManagement	ZoneID	AreaIDfk
ZoningHasDocumentCitation	1→1..*	Zoning	DocumentCitation	ZoneID	ObjectIDfk
ZoningHasSourceMethodType	1→1..*	Zoning	SourceMethodType	ZoneID	ObjectIDfk
ZoningHasRelatedParty	1→1..*	Zoning	RelatedParty	ZoneID	ObjectIDfk



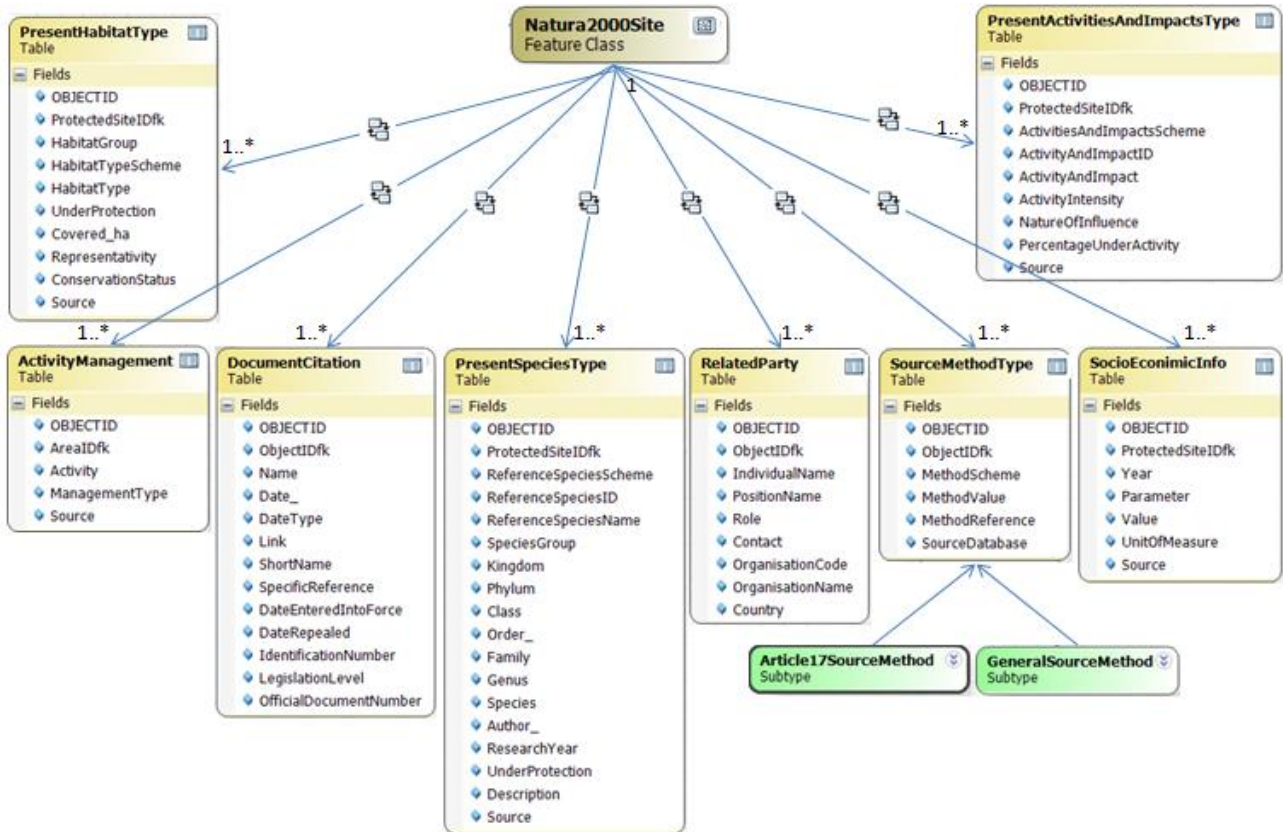
Name	Multiplicity	Origin class	Destination class	Primary key	Foreign key
NationalProtectedSiteHas SourceMethodType	1→1..*	NationalProtectedSite	SourceMethodType	Protected SiteID	Object IDfk
NationalProtectedSiteHas RelatedParty	1→1..*	NationalProtectedSite	RelatedParty	Protected SiteID	Object IDfk
NationalProtectedSiteHas DocumentCitation	1→1..*	NationalProtectedSite	DocumentCitation	Protected SiteID	Object IDfk
NationalProtectedSiteHas PresentActivitiesAndImpactsType	1→1..*	NationalProtectedSite	PresentActivitiesAndImpactsType	Protected SiteID	ProtectedSiteIDfk
NationalProtectedSiteHas PresentHabitatType	1→1..*	NationalProtectedSite	PresentHabitatType	Protected SiteID	ProtectedSiteIDfk
NationalProtectedSiteHas PresentSpeciesType	1→1..*	NationalProtectedSite	PresentSpeciesType	Protected SiteID	ProtectedSiteIDfk
NationalProtectedSiteHas ActivityManagement	1→1..*	NationalProtectedSite	ActivityManagement	Protected SiteID	AreaIDfk
NationalProtectedSiteHas SocioEconomicInfo	1→1..*	NationalProtectedSite	SocioEconomicInfo	Protected SiteID	ProtectedSiteIDfk
NationalProtectedSiteHas Zoning	1→1..*	NationalProtectedSite	Zoning	Protected	Protected

Zoning				SiteID	tedSiteIDfk
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Name	Multiplicity	Origin class	Destination class	Primary key	Foreign key
InternationalProtectedSiteHas SourceMethodType	1→1..*	InternationalProtectedSite	SourceMethodType	ProtectedSiteID	ObjectIDfk
InternationalProtectedSiteHas RelatedParty	1→1..*	InternationalProtectedSite	RelatedParty	ProtectedSiteID	ObjectIDfk
InternationalProtectedSiteHas DocumentCitation	1→1..*	InternationalProtectedSite	RelatedParty	ProtectedSiteID	ObjectIDfk
InternationalProtectedSiteHas PresentActivitiesAndImpactsType	1→1..*	InternationalProtectedSite	PresentActivitiesAndImpactsType	ProtectedSiteID	ProtectedSiteIDfk
InternationalProtectedSiteHas PresentHabitatType	1→1..*	InternationalProtectedSite	PresentHabitatType	ProtectedSiteID	ProtectedSiteIDfk
InternationalProtectedSiteHas PresentSpeciesType	1→1..*	InternationalProtectedSite	PresentSpeciesType	ProtectedSiteID	ProtectedSiteIDfk
InternationalProtectedSiteHas ActivityManagement	1→1..*	InternationalProtectedSite	ActivityManagement	ProtectedSiteID	AreaIDfk
InternationalProtectedSiteHas SocioEconomicInfo	1→1..*	InternationalProtectedSite	SocioEconomicInfo	ProtectedSiteID	ProtectedSiteIDfk

		dSite			
InternationalProtectedSiteHas Zoning	1→1..*	InternationalProtectedSite	Zoning	ProtectedSiteID	ProtectedSiteIDfk



Name	Multiplicity	Origin class	Destination class	Primary key	Foreign key
Natura2000siteHas SourceMethodType	1→1..*	Natura2000site	SourceMethodType	ProtectedSiteID	ObjectIDfk
Natura2000siteHas RelatedParty	1→1..*	Natura2000site	RelatedParty	ProtectedSiteID	ObjectIDfk
Natura2000siteHas DocumentCitation	1→1..*	Natura2000site	DocumentCitation	ProtectedSiteID	ObjectIDfk
Natura2000siteHas PresentActivitiesAndImpactsType	1→1..*	Natura2000site	PresentActivitiesAndImpactsType	ProtectedSiteID	ProtectedSiteIDfk
Natura2000siteHas PresentHabitatType	1→1..*	Natura2000site	PresentHabitatType	ProtectedSiteID	ProtectedSiteIDfk
Natura2000siteHas PresentSpeciesType	1→1..*	Natura2000site	PresentSpeciesType	ProtectedSiteID	ProtectedSiteIDfk
Natura2000siteHas ActivityManagement	1→1..*	Natura2000site	ActivityManagement	ProtectedSiteID	AreaIDfk
Natura2000siteHas SocioEconomicInfo	1→1..*	Natura2000site	SocioEconomicInfo	ProtectedSiteID	ProtectedSiteIDfk
Natura2000siteHas Zoning	1→1..*	Natura2000site	Zoning	ProtectedSiteID	ProtectedSiteIDfk

4. Metadata

In the framework of the CoCoNet project, metadata are produced by Mikado software. Each Feature Class and raster layer has a CDI (Common Data Index) accessible through the SeaDataNet portal:

http://seadatanet.maris2.nl/v_cdi_v3/search.asp

The user of the WebGIS platform can find the name of the metadata file, which the object refers, in the field named "Metadata" in the attribute table.

The metadata for this Geodatabase are also in the CoCoNet Geoportal for metadata:

<http://gp.sea.gov.ua:8082/geoportal/>

ANNEX 1

Acronyms

CDI – Common Data Index

FC – Feature Class

FD – Feature Dataset

OC - Object Class

fk – foreign key

xml – eXtensible Markup Language

kmz - Keyhole Markup Language

References

Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

D2.8.1.9 Data Specification on Protected Sites – Technical Guidelines (D2.8.1.9_v3.2)

<http://inspire.ec.europa.eu/data-model/approved/r4618-ir/html/>

<http://coconetgis.ismar.cnr.it/>

http://seadatanet.maris2.nl/v_cdi_v3/search.asp

<http://gp.sea.gov.ua:8082/geoportal/>

WoRMS Editorial Board (2015). World Register of Marine Species. Available from <http://www.marinespecies.org>

ANNEX 2 – Domains

ActivityValue_v3

Type: Code Value Domain

Description: list of possibilities to managing an activity inside a protected site

Value	Code	Definition
Allowed	allowed	
Forbidden	forbidden	
Regulated	regulated	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: ActivityManagement (OC)

Extensibility: none

Note 1: none

ActivityAndImpactSchemeValue_v3

Type: Code Value Domain

Description: list of schemes the describe activities and impacts

Value	Code	Definition
Natura 2000	natura2000	
Water Framework Directive	waterFrameworkDirective	
EIONET	eionet	
Other	other	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: PresentActivitiesAndImpactsType (OC)

Extensibility: none

Note 1: none

Article17SourceMethodValue_v3

Type: Code Value Domain

Description: The methods that have been used in the sources for compiling the information for article 17 purposes. Describes how the information has been compiled (INSPIRE Directive, r4618-ir)

Value	Code	Definition
Absent data	absentData	Absent data (INSPIRE Directive, r4618-ir)
Complete survey	completeSurvey	Complete survey (INSPIRE Directive, r4618-ir)
Estimate expert	estimateExpert	Estimate based in expert opinion with no or minimal sampling (INSPIRE Directive, r4618-ir)
Estimate partial	estimatePartial	Estimate based on partial data with some extrapolation and/or modeling (INSPIRE Directive, r4618-ir)

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: SourceMethodType (OC)

Extensibility: none

Note 1: The values of the list are found here:

[http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2007-2012/reporting_guidelines/reporting-formats_1/_EN_1.0_&a=d \(D2.8.II.1_v3.0\)](http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2007-2012/reporting_guidelines/reporting-formats_1/_EN_1.0_&a=d (D2.8.II.1_v3.0))

Boolean_v3

Type: Code Value Domain

Description:

Value	Code	Definition
Yes	Y	
No	N	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: NationalProtectedSite (FC), InternationalProtectedSites (FC), Natura2000site (FC)

Extensibility: none

Note 1: none

ConservationStatus_v3

Type: Code Value Domain

Description: A.c) of Annex III. Degree of conservation of the structure and functions of the natural habitat type concerned. and restoration possibilities site (NATURA 2000 form: Explanatory Notes 1)

Value	Code	Definition
Favourable	favourable	
Unfavourable-inadequate	unfavourable-ulinadequate	
Unfavourable-bad	unfavourableBad	
Unknown	Unknown	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: PresentHabitatType (OC)

Extensibility: none

Note 1: The values of the list are found here: NATURA 2000 form: Explanatory Notes 1

CountryCode_v3

Type: Code Value Domain

Description: Country code as defined in the Interinstitutional style guide published by the Publications Office of the European Union (INSPIRE Directive, r4618-ir)

Value	Code
Albania	AL
Algeria	ZD
Bosnia and Herzegovina	BA
Bulgaria	BG
Cyprus	CY
Croatia	HR
Egypt	EG
France	FR
Gaza Trip	PS

Georgia	GE
Gibraltar	GI
Greece	EL
Israel	IL
Italy	IT
Lebanon	LB
Libya	LY
Malta	MT
Monaco	MC
Morocco	MA
Montenegro	ME
Romania	RO
Russia	RU
Slovenia	SI
Spain	ES
Syria	SY
Tunisia	TN
Turkey	TR
Ukraine	UA
United Kingdom	UK

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: RelatedParty (OC), NationalProtectedSite (FC), InternationalProtectedSite (FC), Natura2000site (FC)

Extensibility: none

Note 1: none

DateTypeCode_v3

Type: Code Value Domain

Description:

Value	Code	Definition
Creation	creation	
Pubblication	publication	
Revision	revision	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: DocumentCitation(OC)

Extensibility: yes

Note 1: none

DesignationTypeValue_v2

Type: Code Value Domain

Description:

Value	Code	Definition
Federal	federal	
National	national	
Regional	regional	

Statal	statal	
Transboundary	transboundary	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: NationalProtectedSite (FC)

Extensibility: yes

Note 1: none

GeneralSourceMethodValue_v3

Type: Code Value Domain

Description: What are the methods that have been used in the sources for compiling the information about the objects

Value	Code	Definition
Collection examination	collectionExamination	Data collected from examinations of collections (INSPIRE Directive, r4618-ir)
Grid mapping	gridMapping	Data observations collected by systematic surveys in grid cells (INSPIRE Directive, r4618-ir)
Line sampling	lineSampling	Data collected by systematic surveys along linear transects (INSPIRE Directive, r4618-ir)
Literature examination	literatureExamination	Data collected from literature examinations like printed maps, tables (INSPIRE Directive, r4618-ir)
Prediction modeling	predictionModeling	Data from prediction modeling
Random observation	ramdomObservation	Data collected by randomly distributed (INSPIRE Directive, r4618-ir)collection/observation sites randomly outside a systematic survey (INSPIRE Directive, r4618-ir)
Remote sensing observation	remoteSensingObservation	Data collected by the Remote Sensing Observation method
Statistical sampling	statisticalSampling	Data collected on locations selected by statistical sampling methods (INSPIRE Directive, r4618-ir)

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: SourceMethodType (OC)

Extensibility: yes

Note 1: none

HabitatGroup_v3

Type: Code Value Domain

Description: categories of habitats

Value	Code	Definition
Barren	barren	
Biogenic habitat	biogenicHabitat	
Canopy	canopy	
Deep-sea habitat	deepSeaHabitat	
Mosaic	mosaic	

Rocky subtidal	rockySubtidal	
Seagrass	seagrass	
Sublittoral sediment	sublittoralSediment	
Not applicable	notApplicable	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: PresentHabitatType (OC)

Extensibility: yes

Note 1: none

Inter_SiteDesignationSchemeValue_v2

Type: Code Value Domain

Description:

Value	Code	Definition
Barcelona Convention	Barcelona Convention	
Emerald Network	Emerald Network	
National Monuments Record	National Monuments Record	
Ramsar Convention	Ramsar Convention	
UNESCO Man and the Biosphere Programme	UNESCO Man and the Biosphere Programme	
UNESCO World Heritage Convention	UNESCO World Heritage Convention	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: InternationalProtectedSite (FC)

Extensibility: yes

Note 1: none

Inter_SiteDesignationType_v2

Type: Code Value Domain

Description:

Value	Code	Definition
Agriculture and subsistence	Agriculture and subsistence	
Civil	Civil	
Commemorative	Commemorative	
Commercial	Commercial	
Communications	Communications	
Defence	Defence	
Domestic	Domestic	
Education	Education	
Gardens parks and urban spaces	Gardens parks and urban spaces	
Health and welfare	Health and welfare	
Industrial	Industrial	
Maritime	Maritime	
Monument	Monument	
Recreational	Recreational	
Religious ritual and funerary	Religious ritual and funerary	
Settlement	Settlement	

Transport	Transport	
Water supply and drainage	Water supply and drainage	
Cultural	Cultural	
Natural	Natural	
Cultural and natural	Cultural and natural	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: InternationalprotectedSite (FC)

Extensibility: none

Note 1: none

Inter_SiteDesignationvalue_v2

Type: Code Value Domain

Description:

Value	Code	Definition
Areas of Special Conservation Interest	Areas of Special Conservation Interest	
National Monuments Record	National Monuments Record	
Ramsar Site, Wetland of International Importance	Ramsar Site, Wetland of International Importance	
Specially Protected Areas of Mediterranean Importance - SPAMI	Specially Protected Areas of Mediterranean Importance - SPAMI	
UNESCO-MAB Biosphere Reserve	UNESCO-MAB Biosphere Reserve	
UNESCO World Heritage Site	UNESCO World Heritage Site	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: InternationalProtectedSite (FC)

Extensibility: none

Note 1: none

IUCN_v3

Type: Code Value Domain

Description:

Value	Code	Definition
Ia - Strict nature reserve	Ia	
Ib - Wilderness area	Ib	
II - National park	II	
III - Natural monument	III	
IV - Habitat species management area	IV	
V - Protected landscape or seascape	V	
VI - Managed resource protected area	VI	
Not adopted	NotAdopted	
Not applicable	NotApplicable	
Not reported	NotReported	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: NationalProtectedSite (FC), InternationalProtectedSite (FC), Natura2000site (FC)

Extensibility: none

Note 1: none

LegislationLevelValue_v3

Type: Code Value Domain

Description: the level at which a legal act or convention has been adopted (INSPIRE Directive, r4618-ir)

Value	Code	Definition
European	european	A legal act of European Union (INSPIRE Directive, r4618-ir)
International	international	An international legal act or convention (INSPIRE Directive, r4618-ir)
National	national	A legal act at national level (INSPIRE Directive, r4618-ir)
Sub-national	subNational	A legal act at sub-national level (INSPIRE Directive, r4618-ir)

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: DocumentCitation (OC)

Extensibility: none

Note 1: none

LocalSiteDesignationType_v2

Type: Code Value Domain

Description:

Value	Code	Definition
Archaeological Protection Area (APA)	Archaeological Protection Area (APA)	
Biological Protection Areas (ZTB)	Biological Protection Areas (ZTB)	
Biosphere Zapovednik	Biosphere Zapovednik	
Biotope Protection Order Zone	Biotope Protection Order Zone	
Collaborative Fishery Management Area	Collaborative Fishery Management Area	
Essential Fish Habitat (EFH)	Essential Fish Habitat (EFH)	
Exclusive Fishing Zone (EFZ)	Exclusive Fishing Zone (EFZ)	
Fisheries Management Zone (FMZ)	Fisheries Management Zone (FMZ)	
Fisheries Restricted Area (FRA)	Fisheries Restricted Area (FRA)	
Game Reserve	Game Reserve	
Land acquired by Littoral and Lakeside Conservatory	Land acquired by Littoral and Lakeside Conservatory	
Landscape Park	Landscape Park	
Managed Nature Reserve	Managed Nature Reserve	
Marine Protected Area	Marine Protected Area	
Marine Nature Reserve	Marine Nature Reserve	
Marine Park	Marine Park	
Marine Reserve	Marine Reserve	
Natural Park	Natural Park	
Natural Landscape	Natural Landscape	
Natural Marine Park	Natural Marine Park	
Natural Monument	Natural Monument	
Nature Park	Nature Park	
Nature Protectorate	Nature Protectorate	
Nature Reserve	Nature Reserve	
Nature Zapovednik	Nature Zapovednik	
Other Area	Other Area	

Park	Park	
Park-Monument of Orchard-Park Art	Park-Monument of Orchard-Park Art	
Partial Protected Area	Partial Protected Area	
Plan for Areas of Natural Interest	Plan for Areas of Natural Interest	
Protected Ecological Park	Protected Ecological Park	
Protected Landscape	Protected Landscape	
Recreation Area	Recreation Area	
Reserve	Reserve	
Scientific Reserve	Scientific Reserve	
Special Environmental Protection Area (SEPA)	Special Environmental Protection Area (SEPA)	
Special Reserve	Special Reserve	
Special Nature Reserve	Special Nature Reserve	
Strict Nature Reserve	Strict Nature Reserve	
Underwater Park	Underwater Park	
Underwater Reserve	Underwater Reserve	
Zakaznik	Zakaznik	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: NationalProtectedSite (FC)

Extensibility: none

Note 1: none

Natura2000_desig_v2

Type: Code Value Domain

Description: The Natura 2000 network stems from the Habitats Directive. Member States choose sites according to precise, scientific criteria, but the selection procedure varies depending on which of the two nature directives – Birds or Habitats – warrants the creation of a particular site. Under the Habitats Directive (Art. 3 and 4), Member States designate Special Areas of Conservation (SACs) to ensure the favourable conservation status of each habitat type and species throughout their range in the EU. Under the Birds Directive (Art. 4), the network must include Special Protection Areas (SPAs) designated for 194 particularly threatened species and all migratory bird species

Value	Code	Definition
proposed Site of Community Importance	pSCI	Member States first carry out comprehensive assessments of each of the habitat types and species present on their territory. They then submit lists of proposed Sites of Community Importance (pSCIs).
proposed Special Protection Area	pSPA	Member States designate Special Protection Areas (SPAs) according to scientific criteria such as '1% of the population of listed vulnerable species' or 'wetlands of international importance for migratory waterfowl'.
Site of Community Importance	SCI	Only the sufficient high-quality sites (pSCIs) become Sites of Community Importance (SCIs).
Special Area of Conservation	SAC	Once the lists of Sites of Community Importance (SCIs) have been adopted, Member States must designate them as Special Areas of Conservation (SACs).
Special Protection Area	SPA	Based on the information provided by the Member States, the European Commission determines if the designated sites (pSPAs) are sufficient to form a coherent network for the protection of these

		vulnerable and migratory species. These sites then become an integral part of the Natura 2000 network as SPAs.
pSite of Community Importance-Special Protection Area	pSCI-SPA	
Site of Community Importance-Special Protection Area	SCI-SPA	
Special Area of Conservation-Special Protection Area	SAC-SPA	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: Natura2000site (FC)

Extensibility: none

Note 1: none

Natura2000_desigScheme_v2

Type: Code Value Domain

Description: Natura 2000 is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right. It stretches across all 28 EU countries, both on land and at sea. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both the Birds Directive and the Habitats Directive.

Value	Code	Definition
Habitat Directive	Habitat Directive	The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species
Birds Directive	Birds Directive	The Birds Directive aims to protect all of the 500 wild bird species naturally occurring in the European Union
Habitat Directive and Birds Directive	Habitat Directive and Birds Directive	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: Natura2000site (FC)

Extensibility: none

Note 1: none

NatureOfInfluenceValue_v3

Type: Code Value Domain

Description: a code indicating the nature of the influence of activities in and around the site (INSPIRE Directive, r4618-ir)

Value	Code	Definition
Positive	+	The protected site is positively influenced by impacts and activities in and around the site (INSPIRE Directive, r4618-ir)
Negative	-	The protected site is positively influenced by impacts and activities in and around the site (INSPIRE Directive, r4618-ir)

Created: 20/05/2015
 Modified: none
 Author: CNR-ISMAR
 State: approved
 Used in: PresentActivitiesAndImpactsType (OC)
 Extensibility: none
 Note 1: none

NoTakeValue_v3

Type: Code Value Domain

Description: part of the zone in the protected site that is a no-take area

Value	Code	Definition
All	all	
None	none	
Part of	partOF	
Unknown	unknown	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: NationalProtectedSite (FC), InternationalProtectedSite (FC), Natura2000site (FC), Zoning (FC)

Extensibility: none

Note 1: none

PartyRoleValue_v3

Type: Code Value Domain

Description: Roles of parties related to or responsible for a resource (INSPIRE Directive, r4618-ir)

Value	Code	Definition
Author	author	Author of the data (INSPIRE Directive, r4618-ir)
Custodian	custodian	Guardian or keeper responsible for maintaining data (INSPIRE Directive, r4618-ir)
Distributor	distributor	Person or organisation who distributes the data (INSPIRE Directive, r4618-ir)
Originator	originator	Responsible party who created the dataset or metadata (INSPIRE Directive, r4618-ir)
Owner	owner	Person who owns the data (INSPIRE Directive, r4618-ir)
Point of contact	pointOfContact	Responsible party who can be contacted for acquiring knowledge about or acquisition of the data (INSPIRE Directive, r4618-ir)
Principal investigator	principallInvestigator	Key person responsible for gathering information and conducting research (INSPIRE Directive, r4618-ir)
Processor	processor	Responsible party who has processed the data in a manner in which data has been modified (INSPIRE Directive, r4618-ir)
Publisher	publisher	Responsible party who published the data (INSPIRE Directive, r4618-ir)
Resource provider	resourceProvider	Party that supplies the data (INSPIRE Directive, r4618-ir)
User	user	Person who uses the data (INSPIRE Directive, r4618-ir)

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR
State: approved
Used in: RelatedParty (OC)
Extensibility: yes
Note 1: none

RankValue_v3

Type: Code Value Domain

Description: A code indicating the level of intensity of the influence of the activities in and around the site (INSPIRE Directive, r4618-ir)

Value	Code	Definition
High	h	The impacts and activities carried out on and around the protected site have a high intensity of influence (INSPIRE Directive, r4618-ir)
Medium	m	The impacts and activities carried out on and around the protected site have a medium intensity of influence (INSPIRE Directive, r4618-ir)
Low	l	The impacts and activities carried out on and around the protected site have a low intensity of influence (INSPIRE Directive, r4618-ir)

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: PresentActivitiesAndImpactsType (OC)

Extensibility: none

Note 1: none

ReferenceHabitatTypeSchemeValue_v3

Type: Code Value Domain

Description: This value defines which pan-european habitat classification scheme has been used (INSPIRE Directive, r4618-ir)

Value	Code	Definition
EUNIS	eunis	EUNIS habitat classification (INSPIRE Directive, r4618-ir)
Habitat Directive	habitatDirective	Habitat Directive Annex I habitats (INSPIRE Directive, r4618-ir)
Marine Strategy Framework Directive	marineStrategyFrameworkDirective	Marine Strategy Framework Directive, Annex III table 3 (INSPIRE Directive, r4618-ir)
Not applicable	notApplicable	The habitat is not present in any of the three previous classifications

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: PresentHabitatType (OC)

Extensibility: none

Note 1: none

ReferenceSpeciesSchemeValue_v3

Type: Code Value Domain

Description: Reference lists defining a nomenclatural and taxonomical standard to which local names and taxonomic concepts can be mapped. The authorized ReferenceSpeciesScheme provides reference

species list which defines the ReferenceSpeciesName with its scientific name plus author and ReferenceSpeciesId (INSPIRE Directive, r4618-ir)

Value	Code	Definition
EuNomen	eunomen	Names and taxonomic concepts as defined by the Pan European Species Inventory, published by eunomen.eu/portal (INSPIRE Directive, r4618-ir)
EUNIS	eunis	Names and taxonomic concepts as defined by the EUNIS Species list (INSPIRE Directive, r4618-ir)
Nature Directives	natureDirectives	Names and taxonomic concepts as defined by the nature directives species list (INSPIRE Directive, r4618-ir)
WoRMS	worms	Names and taxonomic concepts as defined by the World Register of Marine Species (WoRMS Editorial Board (2015))

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: PresentSpeciesType (OC)

Extensibility: none

Note 1: In the framework of the CoCoNet project we decided that the WoRMS register has the priority. It is always updated and it includes only the marine species.

Representativity_v3

Type: Code Value Domain

Description: (A.a) of Annex III. Degree of representativity of the natural habitat type on the site (NATURA 2000 form: Explanatory Notes 1).

Value	Code	Definition
Excellent representativity	excellentRepresentativity	
Good representativity	goodRepresentativity	
Significant representativity	significantRepresentativity	
Non-significant presence	nonSignificantPresence	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: PresentHabitatType (OC)

Extensibility: none

Note 1: The values of the list are found here: NATURA 2000 form: Explanatory Notes 1.

SiteTypeValue_v3

Type: Code Value Domain

Description: type of protected site

Value	Code	Definition
Partly marine	partlyMarine	
Strictly marine	strictlyMarine	
Terrestrial	terrestrial	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: NationalProtectedSite (FC), InternationalProtectedSite (FC), Natura2000site (FC)

Extensibility: none

Note 1: none

Status_v3

Type: Code Value Domain

Description: legal status of the protected site

Value	Code	Definition
Degazetted	degazetted	
Designated	designated	
Informally designated	informallyDesignated	
Inscribed	inscribed	
Planning	planning	
Proposed	proposed	
recommended	recommended	
Unknown	unknown	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

State: approved

Used in: DocumentCitation (OC)

Extensibility: none

Note 1: none

ZoneTypeValue_v2

Type: Code Value Domain

Description: type of zone.

Value	Code	Definition
Integral/ Zone A/ Core Zone	Integral/ Zone A/ Core Zone	
Buffer/Zone B	Buffer/Zone B	
Peripheral/ Zone C	Peripheral/ Zone C	
Zone D	Zone D	
No-take zone	No-take zone	
Other	Other	

Created: 20/05/2015

Modified: none

Author: CNR-ISMAR

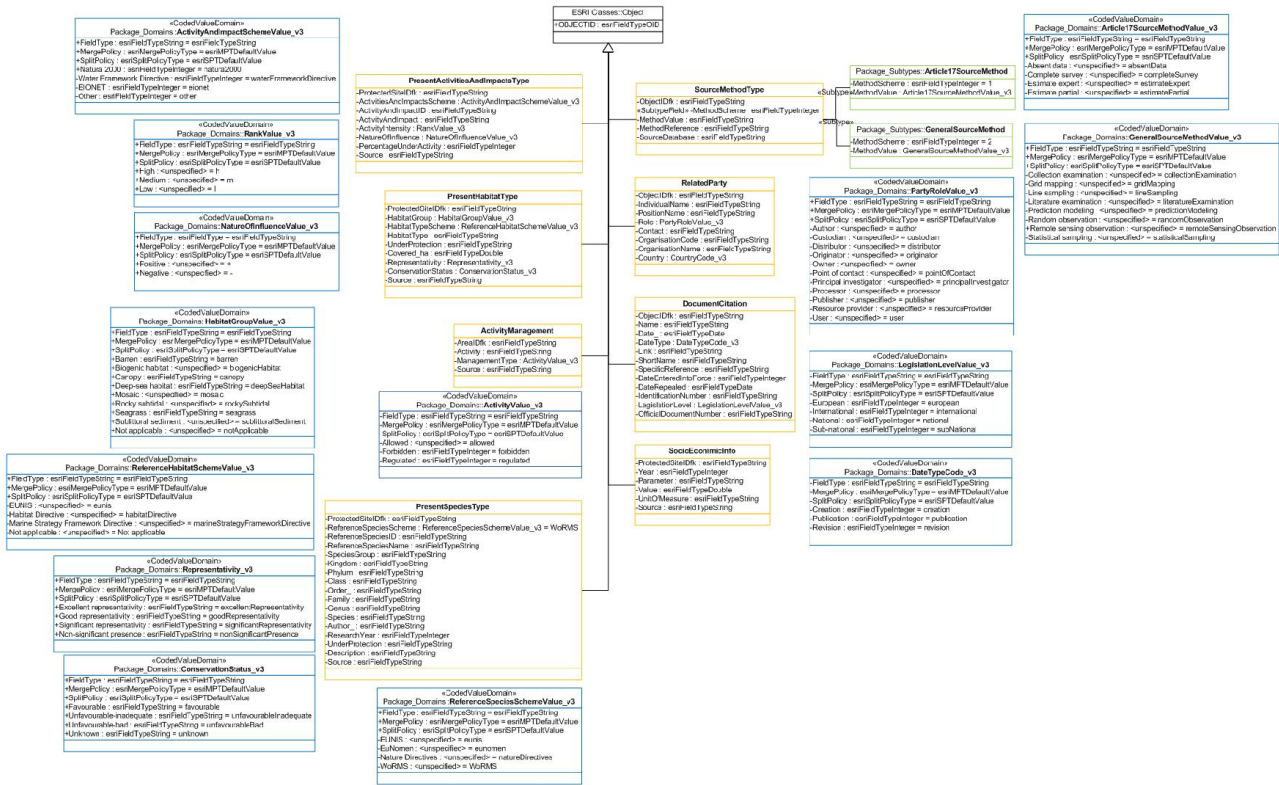
State: approved

Used in: Zoning (FC)

Extensibility: none

Note 1: none

Object classes



Object Class: orange

Subtype: green

Domain: blue

Annex 4 – Layer visualization