spatial data

Agenda

- 1. Overview of the **products** using the WISE spatial data dets
- 2. Structure of the WISE spatial data model
- 3. Overview of the **reporting process**

WISE spatial data products and where to find them

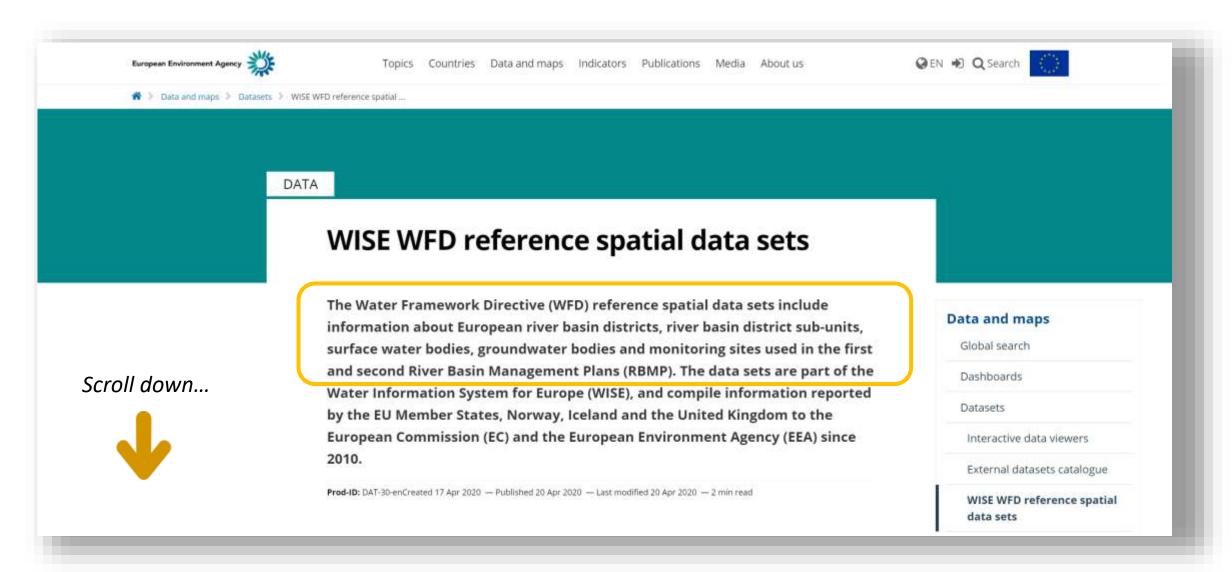
WISE Spatial Data Products

- The information report to WISE is used to create **European data sets**.
- Different products are available:
 - Downloadable data sets.
 - Online map services.
 - Derived products, such as map viewers and dashboards.

- The National data sets can be accessed in CDR or in a restricted area.
 - Only authorised users have access to national data sets.

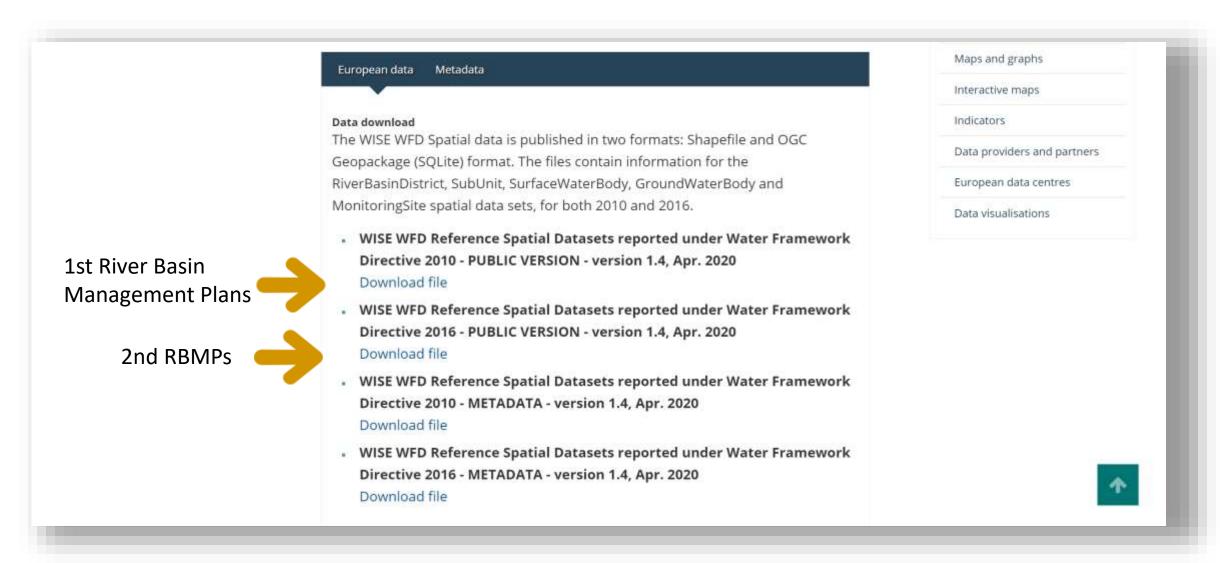
Water Framework Directive data sets in the EEA site





Water Framework Directive data sets in the EEA site





- The European data sets are published in two different formats:
 - Shapefiles
 - OCG Geopackage (SQLite)
- Only the public content is available for download.
 - For example, the location of confidential monitoring sites is not published.
 - The access constraints set by the Data Providers are published with the data set.
- The current frequency of publication is annual (if updated data exists).

- All the data is published.
 - Except monitoring sites marked as confidential.
 - Except justified cases where Data Providers explicitly request it, and state it in the metadata that accompanies each national dataset (e.g. drinking water).
 - It is important to provide accurate metadata when reporting the national data sets.



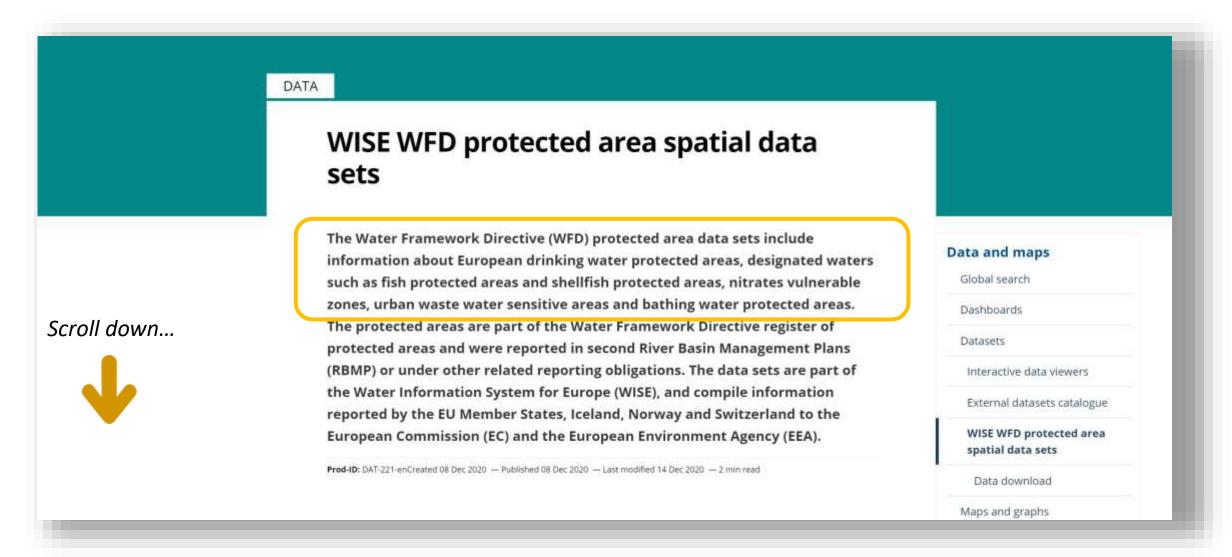
- The newer data is used to replace older data
 - If an identifier changes, the existing time series will be updated by EEA/ETC.
 - It is important to provide accurate life-cycle information, e.g. about changes in the identifiers.



This is be illustrated later on.

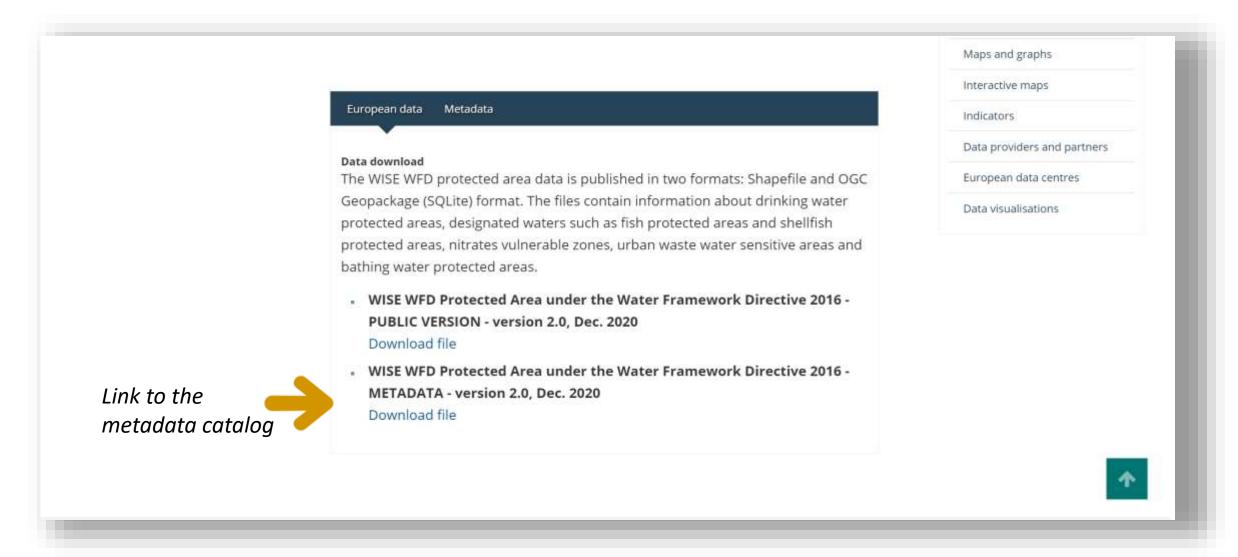
- The **Protected Areas under WFD** are the drinking water protected areas, designated waters such as fish protected areas and shellfish protected areas, nitrates vulnerable zones, urban waste water sensitive areas and **bathing water** protected areas.
- Only the drinking water protected areas and the designated waters are reported in the WFD data flows.
- The other Protected Areas have specific data flows, and are not reported again under WFD.

WISE WFD protected areas spatial data sets



https://www.eea.europa.eu/data-and-maps/data/wise-wfd-protected-areas-1

WISE WFD protected areas spatial data sets

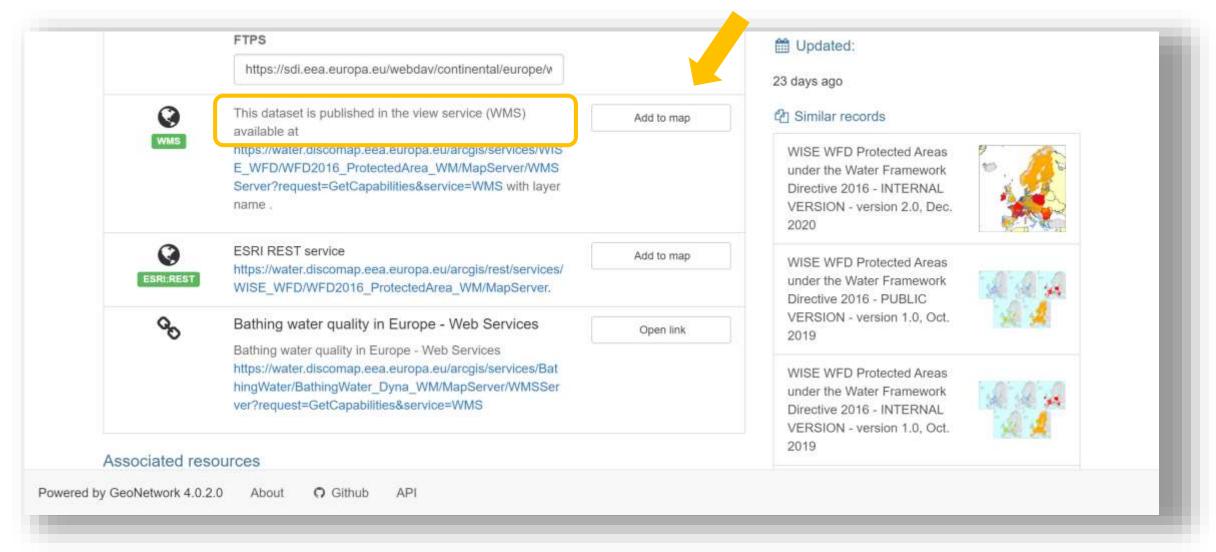


WISE WFD protected areas metadata



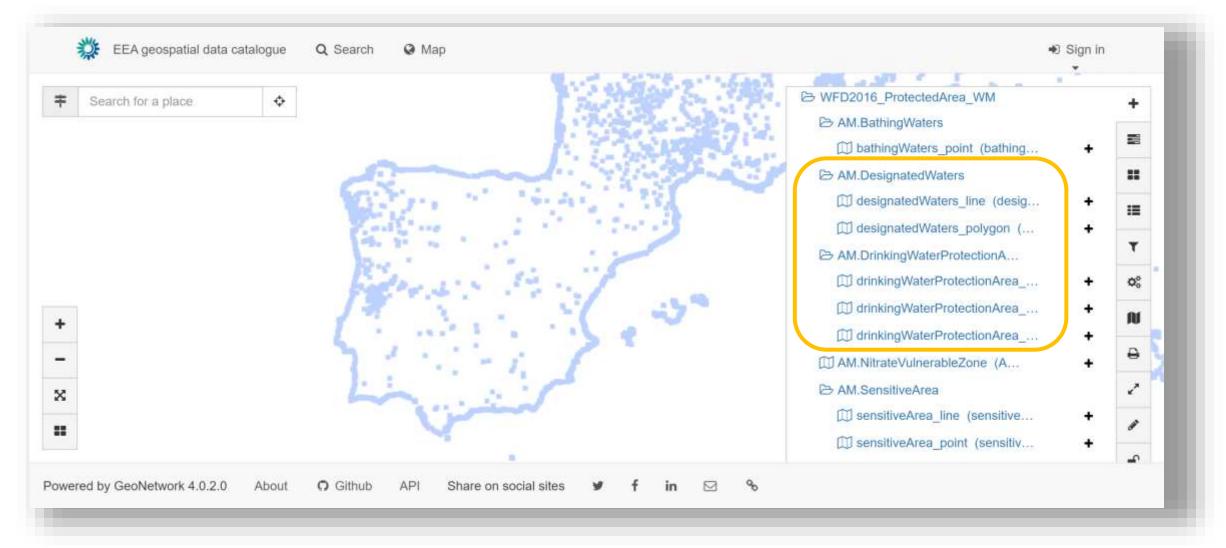
https://sdi.eea.europa.eu/catalogue/srv/eng/catalog.search#/metadata/ec23d640-f405-40d1-8bb0-927ad62f654d

WISE WFD protected areas web services



https://sdi.eea.europa.eu/catalogue/srv/eng/catalog.search#/metadata/ec23d640-f405-40d1-8bb0-927ad62f654d

Example showing bathing waters (that are reported under the BWD data flow)



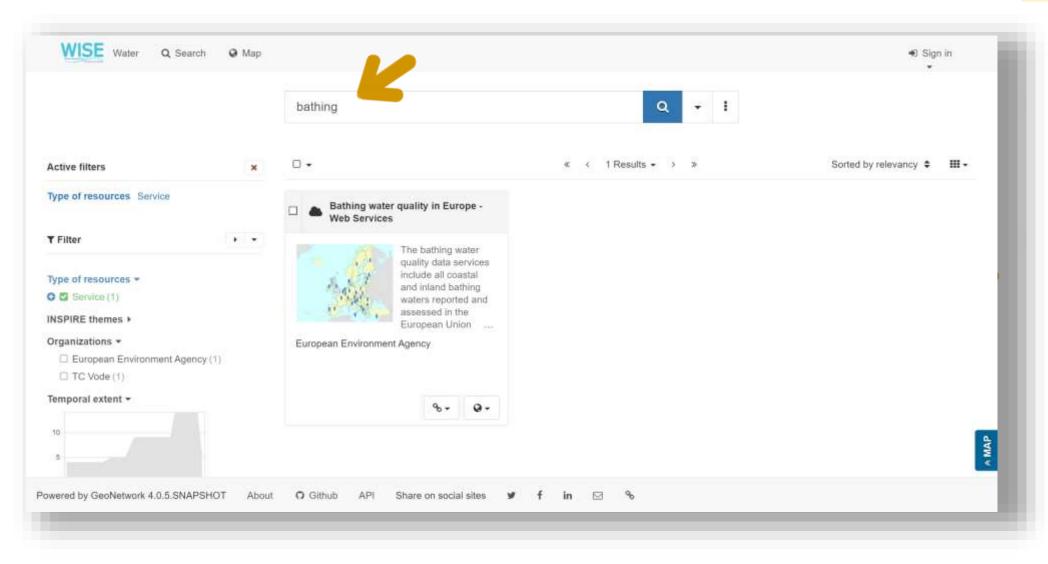
https://sdi.eea.europa.eu/catalogue/srv/eng/catalog.search#/map

Access to online services using the metadata catalog

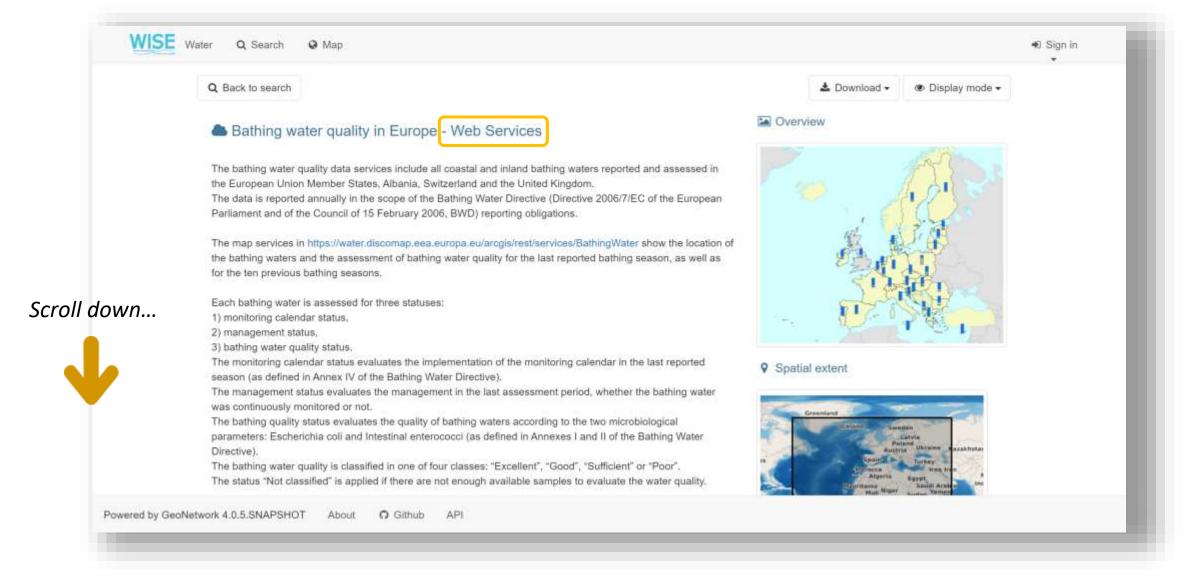


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| 21 | 9 | 9 | 30 | |
| Area management/restricti | Environmental monitoring f | Hydrography | Dataset | K |
| Oceanographic geographi 6 | 費点 Utility and governmental s | Natural risk zones | Service 14 | |
| 0 | | | | |
| Sea regions | | | | |
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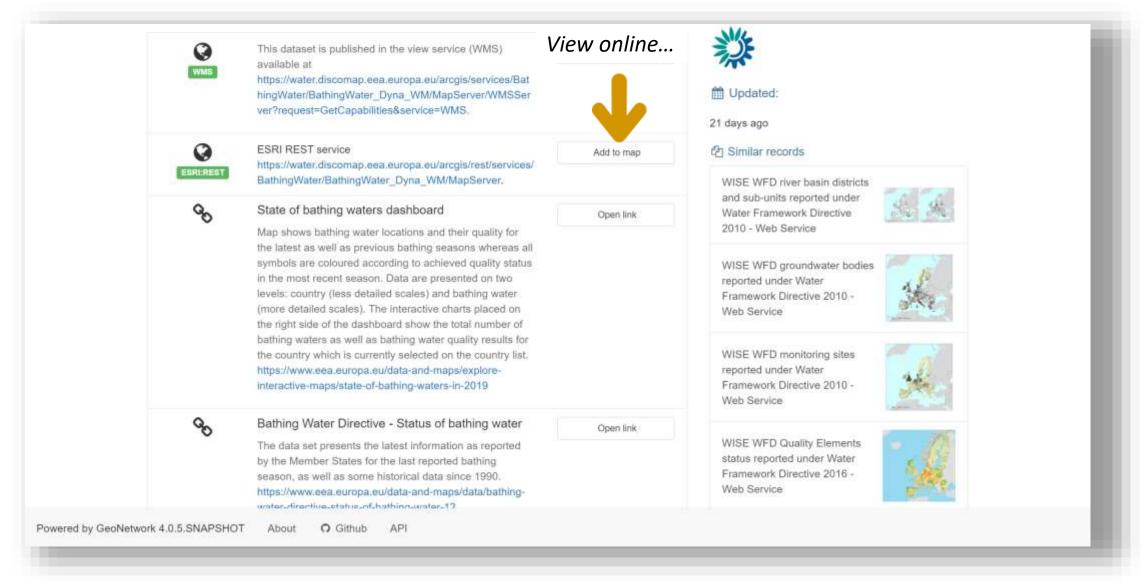
https://sdi.eea.europa.eu/catalogue/water/eng/catalog.search#/home



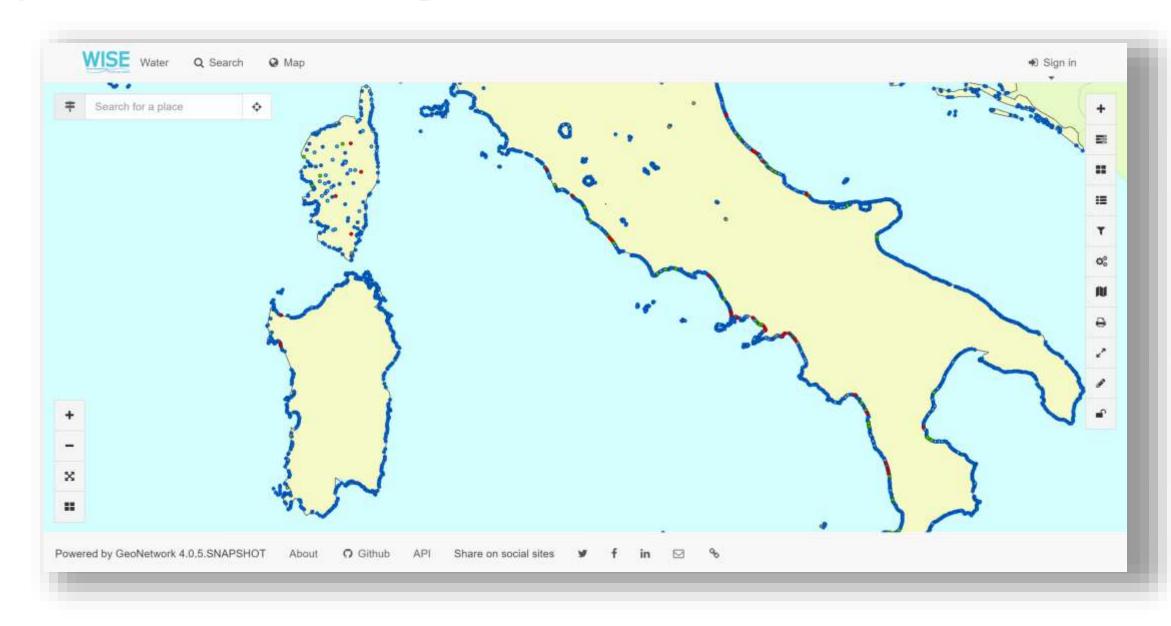
Metadata fiche



Links to map services



Example with the bathing water service



Direct access to the online map services

For GIS users, a faster way is to go directly to the web map server, and use the service directly in the GIS software...

ArcGIS REST Services Directory

Home > services > BathingWater

Help | API Reference

JSON | SOAP

Folder: BathingWater

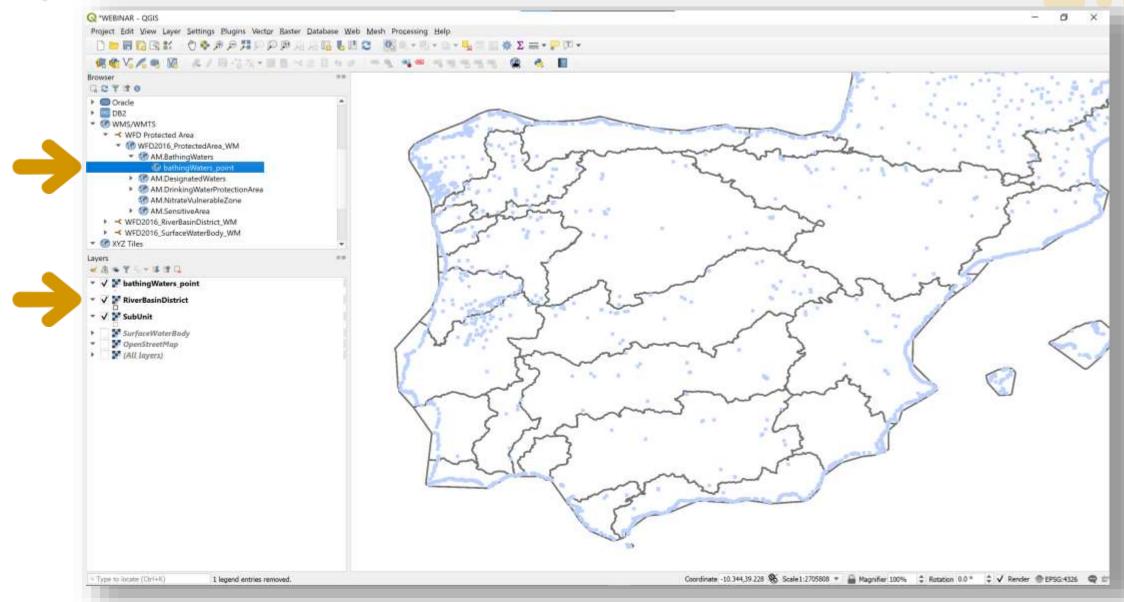
Current Version: 10.81

View Footprints In: ArcGIS Online Map Viewer

Services:

- BathingWater/BathingWater Dyna WM 2015 (MapServer)
- BathingWater/BathingWater Dyna WM 2016 (MapServer)
- BathingWater/BathingWater Dyna WM 2017 (MapServer)
- BathingWater/BathingWater_Dyna_WM_2018 (MapServer)
- · BathingWater/BathingWater_Dyna_WM_2019 (MapServer)
- BathingWater/BathingWater_Dyna_WM_2020 (MapServer)
- BathingWater/BathingWater_Dyna_WM (MapServer)
- BathingWater/BathingWater TimeSlider Dyna WM (MapServer)

Supported Interfaces: REST SOAP Sitemap Geo Sitemap



Structure of the WISE spatial data model

and overview of changes since 2016

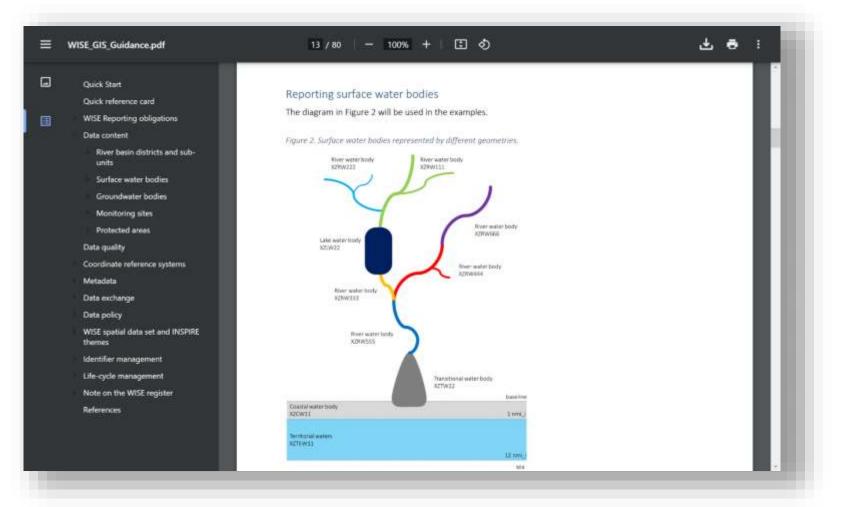


Data model

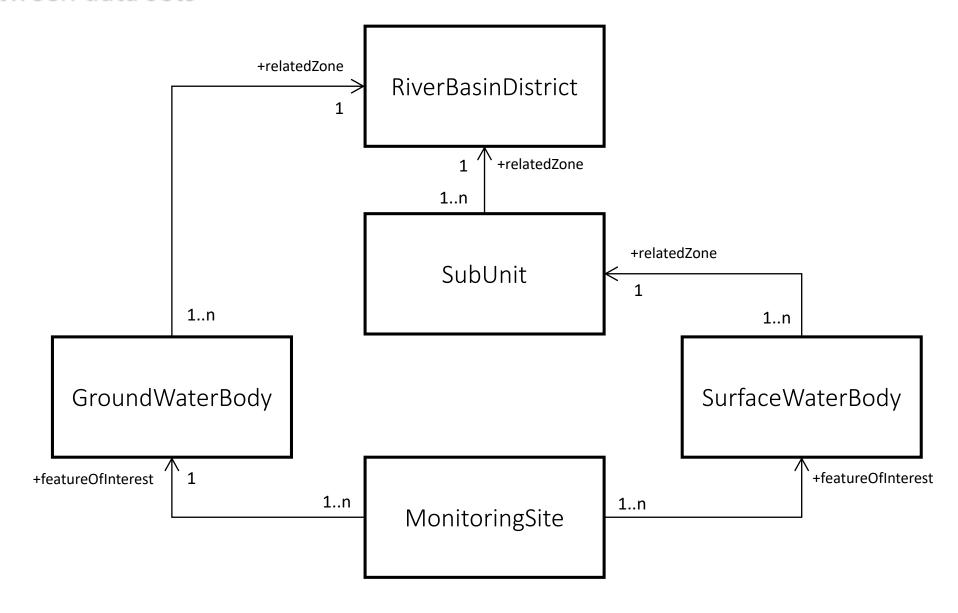
- The spatial data reported to WISE follows the <u>same model</u>
 - In the <u>WFD spatial data flow</u> (countries reporting under WFD)
 - In the WISE-5 spatial data (for other EIONET countries)
 - In the <u>bathing water data</u> flow.
- The content and frequency of the data flows is variable, but all the data is consolidated and must be <u>reported only once</u>.
 - Information from data flows that don't yet use the WISE spatial data model (e.g. Nitrates, UWWTD) also does <u>not</u> need to be reported again.

Data model

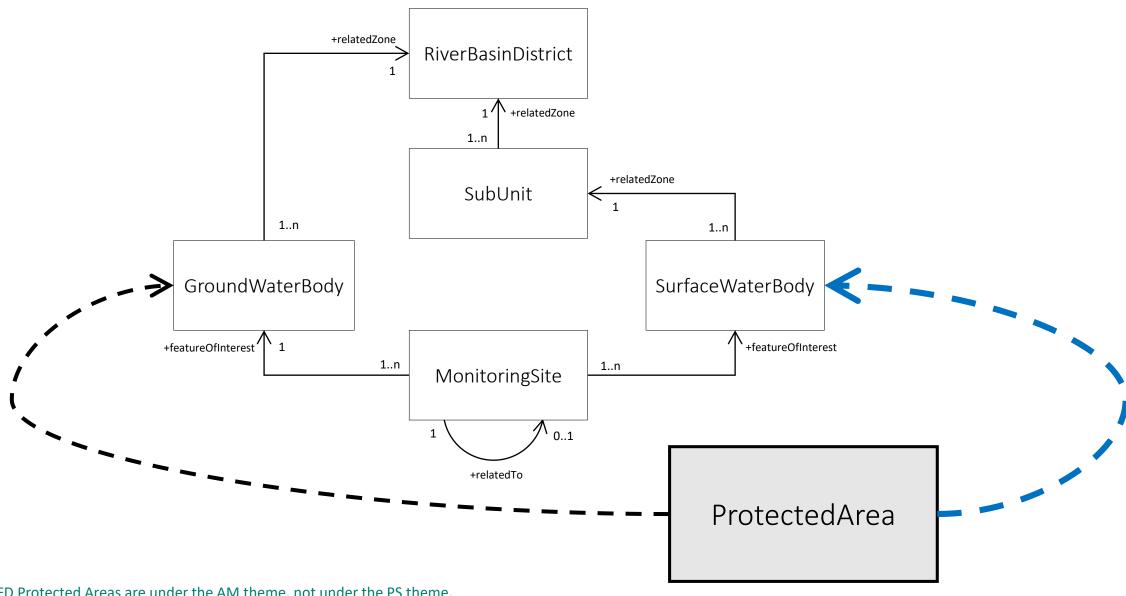
• The model is fully described in the WISE GIS Guidance.



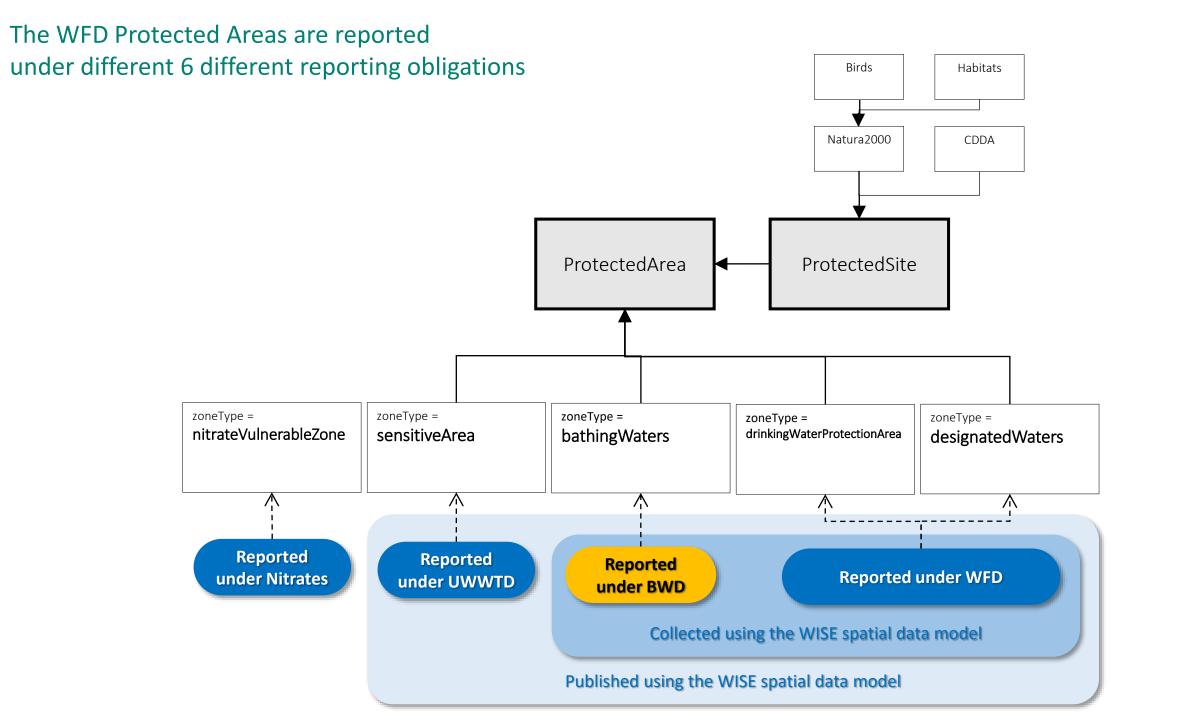
relation between data sets



The Water Framework Directive Protected Areas* are also related to the WFD water bodies



^{*} WFD Protected Areas are under the AM theme, not under the PS theme.



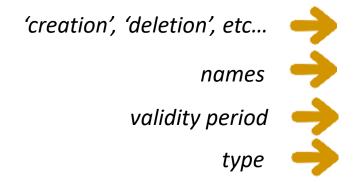
Areas of Management

The model is identical for all AM datasets

location data
the national INSPIRE identifier



relation to the thematic data (time series)





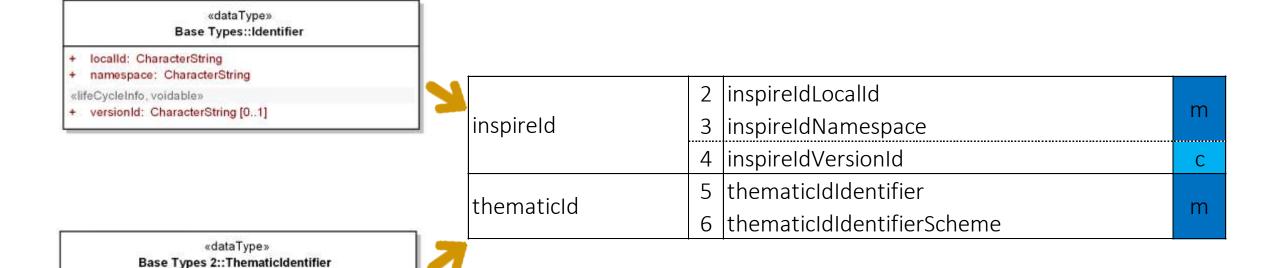
| Legend: | |
|---------|---|
| m | Mandatory element, must be reported |
| С | Conditional element, must be reported under specific circumstance |
| 0 | Ontional element, can be reported |

| | | | Protectec | |
|----------------------|----|------------------------------|-----------|----------------------|
| INSPIRE element | # | WISE GML data element | Pro | Shapefile field name |
| geometry | 1 | geometry | m | shape |
| | 2 | inspireIdLocalId | Э | localId |
| inspireId | 3 | inspireIdNamespace | | namespace |
| | 4 | inspire Id Version Id | С | versionId |
| thematicId | 5 | thematicIdIdentifier | m | thematicId |
| | 6 | thematicIdIdentifierScheme | | themaldSch |
| beginLifespanVersion | 9 | beginLifespanVersion | С | beginLife |
| endLifespanVersion | 10 | end Lifespan Version | С | endLife |
| n rada assars | 11 | predecessorsIdentifier | С | predecesId |
| predecessors | 12 | predecessorsIdentifierScheme | | predeIdSch |
| | 13 | successors Identifier | С | successold |
| sucessors | 14 | successorsIdentifierScheme | | succeldSch |
| evolutions | 19 | wiseEvolutionType | m | wEvolution |
| name | 20 | nameTextInternational | m | nameTxtInt |
| | 21 | nameText | m | nameText |
| | 22 | nameLanguage | | nameTxtLan |
| designationPeriod | 25 | designationPeriodBegin | m | desigBegin |
| | 26 | designationPeriodEnd | С | desigEnd |
| zoneType | 29 | zoneType | m | zoneType |
| specialisedZoneType | 30 | specialisedZoneType | С | spZoneType |
| legalBasis | 31 | legalBasisName | | legisName |
| | 32 | legalBasisLink | m | legisLink |
| | 33 | legalBasisLevel | | legisLevel |
| relatedZone | 34 | relatedZoneIdentifier | 0 | rZoneId |
| | 35 | relatedZoneIdentifierScheme | | rZoneIdSch |
| • | 49 | sizeValue | | sizeValue |
| | 50 | sizeUom | 0 | sizeUoM |
| | 55 | link | 0 | link |
| | | I | | |

How are INSPIRE complex data types stored in a flat GML file?

identifier: CharacterString

identifierScheme: CharacterString



The name is concatenated, making easier to recognise each element.

Why are there 2 different names for each element?

The spatial data can be prepared using shapefiles (a common GIS format). The data delivery must be made in GML format (conversion tools are avaliable in Reportnet).

This is the "formal" name of the element in the XML schema. It must be used in the GML files.

This is the "short name" of the element in shapefile format.
Shapefiles have a limitation of 10 characters.





| WISE GML data element | Shapefile field name | |
|----------------------------|----------------------|--|
| geometry | shape | |
| inspireIdLocalId | localId | |
| inspireIdNamespace | namespace | |
| inspireIdVersionId | versionId | |
| thematicIdIdentifier | thematicId | |
| thematicIdIdentifierScheme | themaldSch | |
| beginLifespanVersion | beginLife | |
| endLifespanVersion | endLife | |

Must the shapefile format be used?

No.

Data Providers can create and deliver GML files (XML schemas are provided for each data set).

But reporters can also use shapefiles, if they prefer to work in that format.

Empty "template" shapefiles are provided for each data set, and also prefilled shapefiles with the latest information reported.

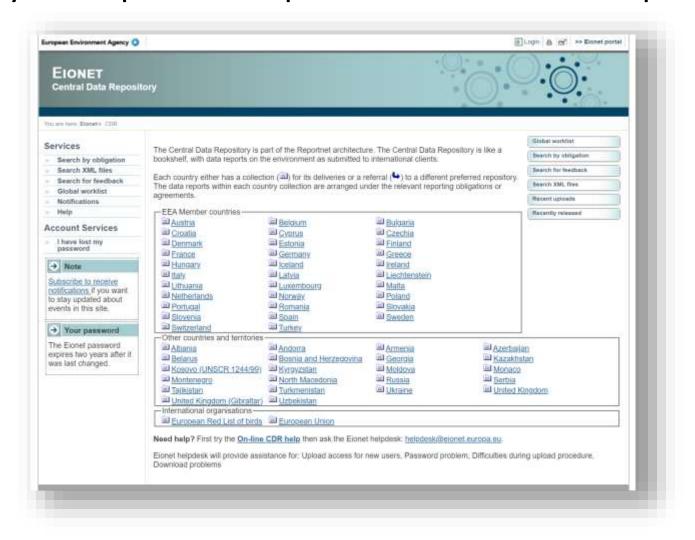
Shapefiles must be converted to GML when uploading to Reportnet.



Reporting the spatial data

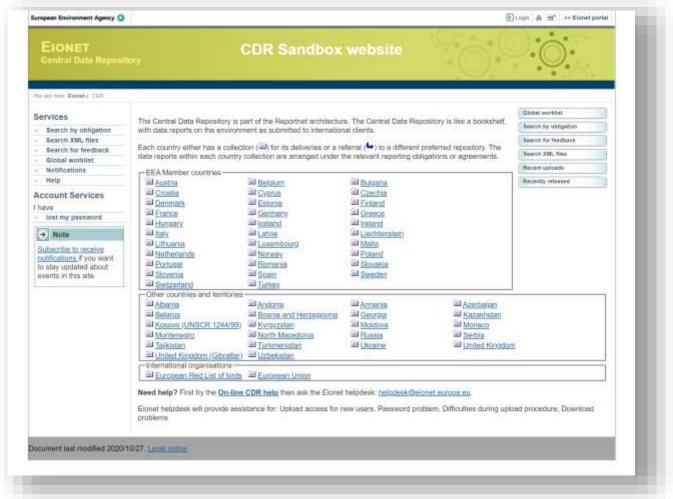
Reporting the spatial data in CDR

Data delivery takes place in Reportnet Central Data Repository (CDR)



Testing and training in CDRSandbox

CDRSandbox is an open testing area. Anyone can use it.

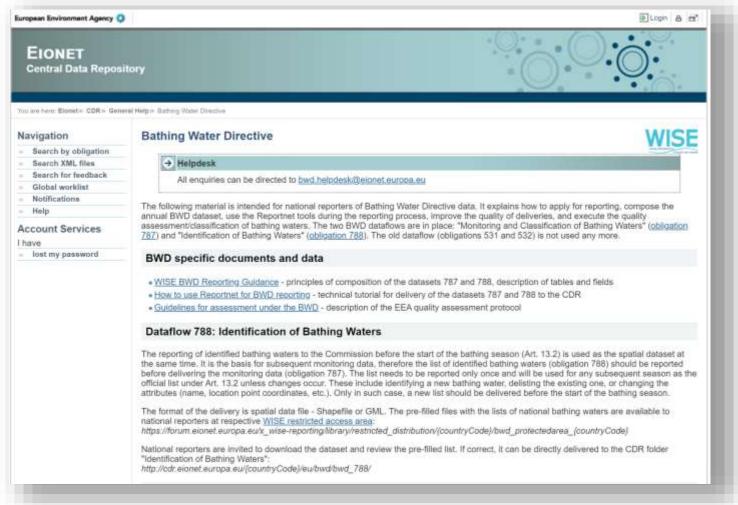


CDR

- The Central Data Repository is the official repository.
- Use https://cdr.eionet.europa.eu/ to make the official data delivery.
 - You will need valid EIONET credentials.
 - You will need to be an authorised national data reporter for the reporting obligation.
- Use https://cdrsandbox.eionet.europa.eu/ if you want to perform tests.
 - You may login with the credentials datareporter/datareporter.
 - Remember that CDRSandbox is an open access platform: to not upload confidential data.
- The delivery process is identical in both platforms.

Always start in the help page...

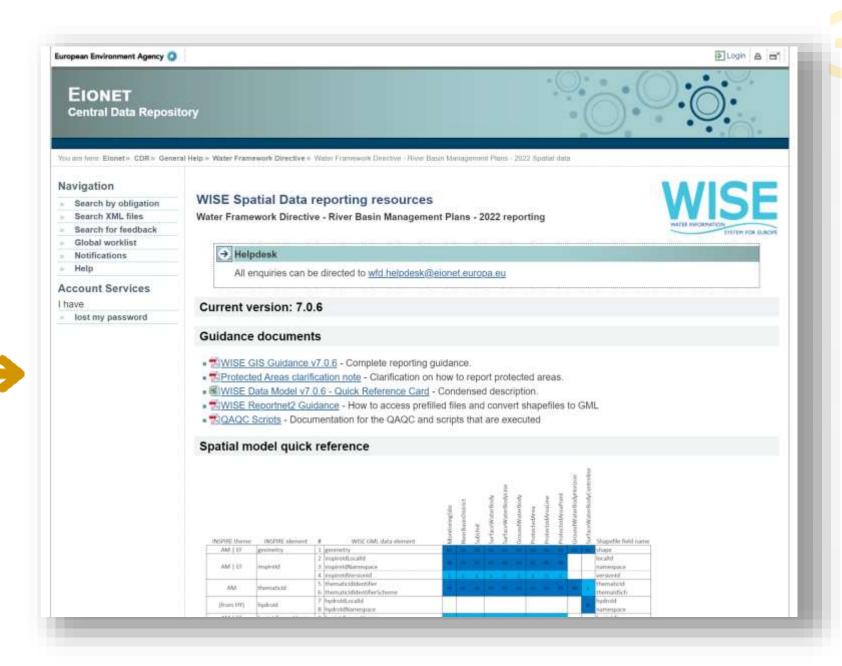
All the documentation is avaliable in the <u>help pages</u>.



Information
specific to the
BWD reporting

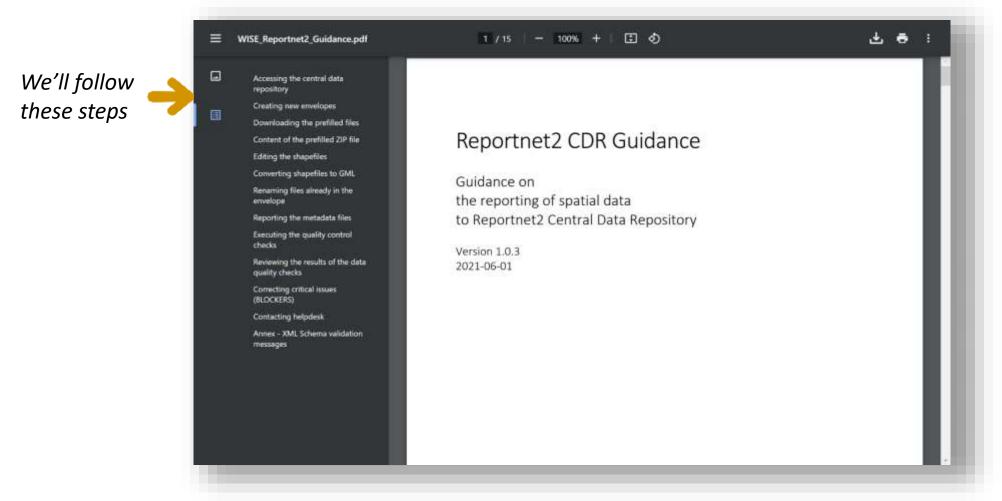
Read the docs...

Information generic for all spatial data flows, if you need the global picture

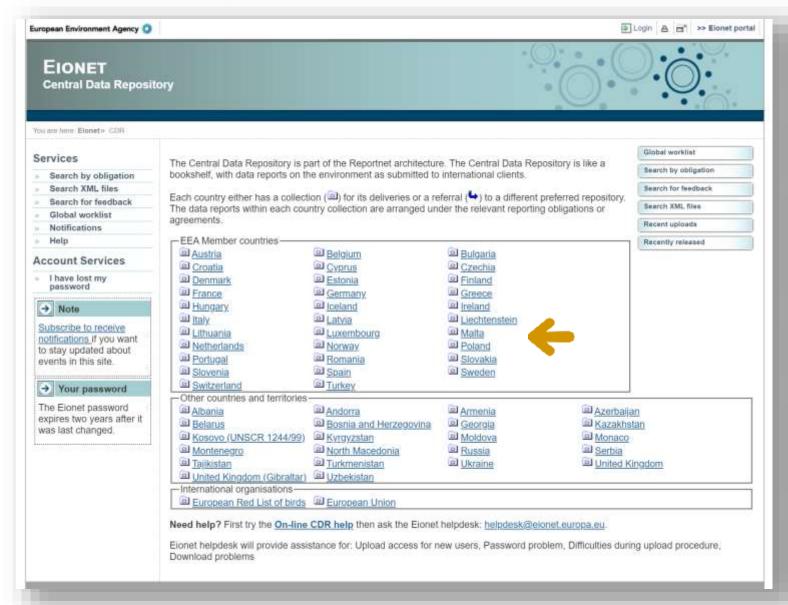


Reportnet guidance

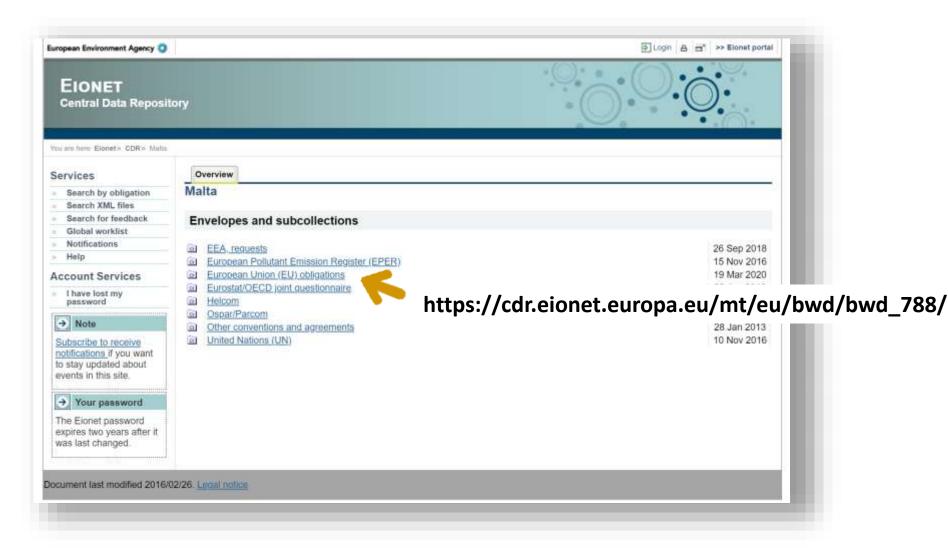
• The reporting process is described in the Reportnet2 CDR Guidance.



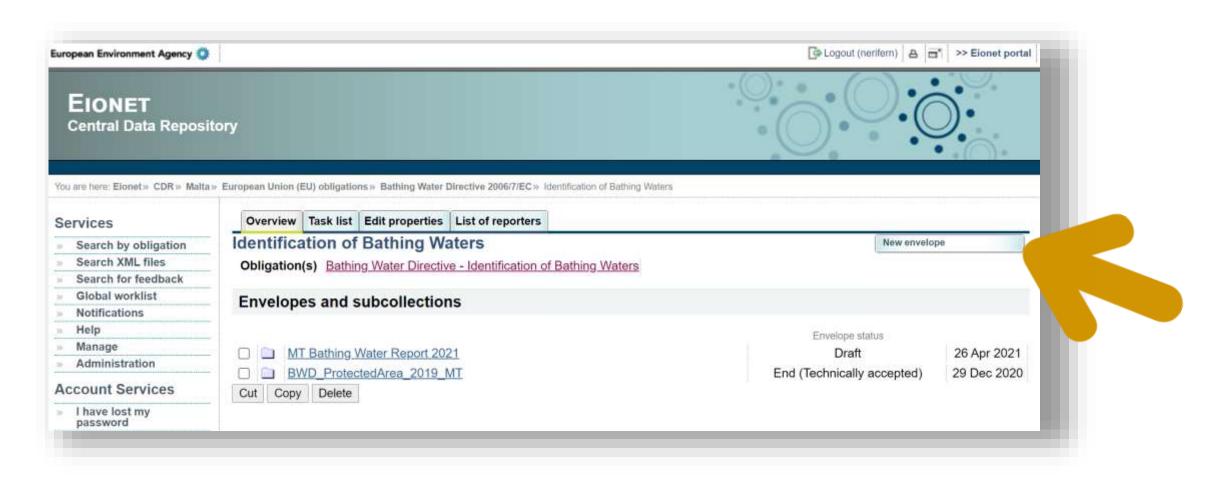
Select your country collection



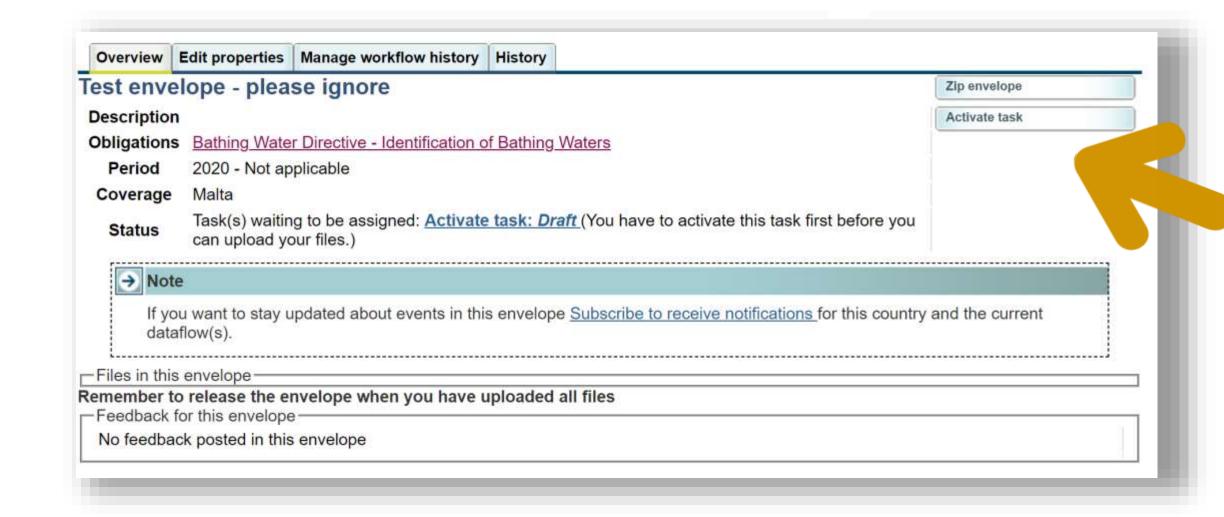
Navigate to the correct folder



Create a new envelope

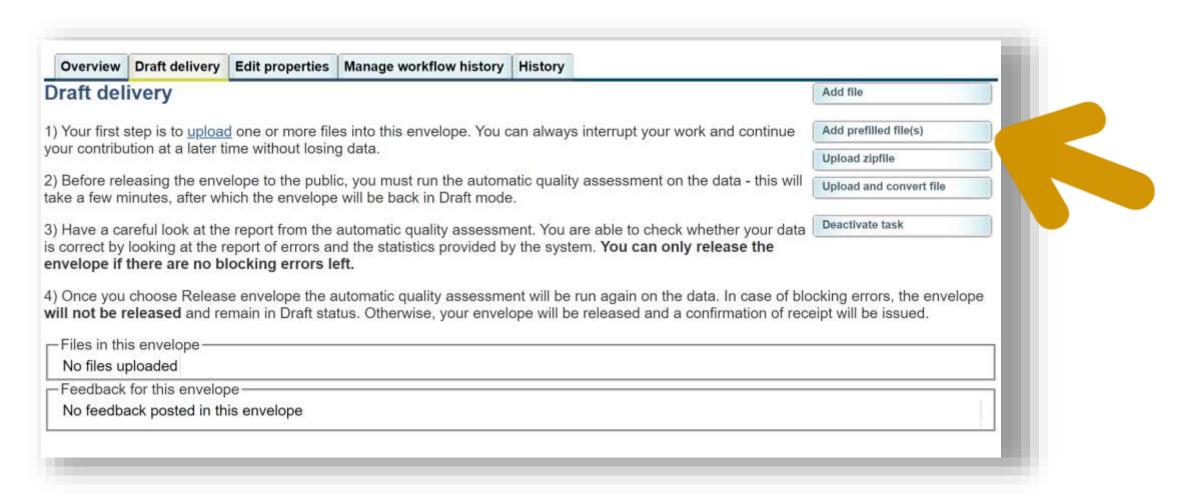


Activate the envelope



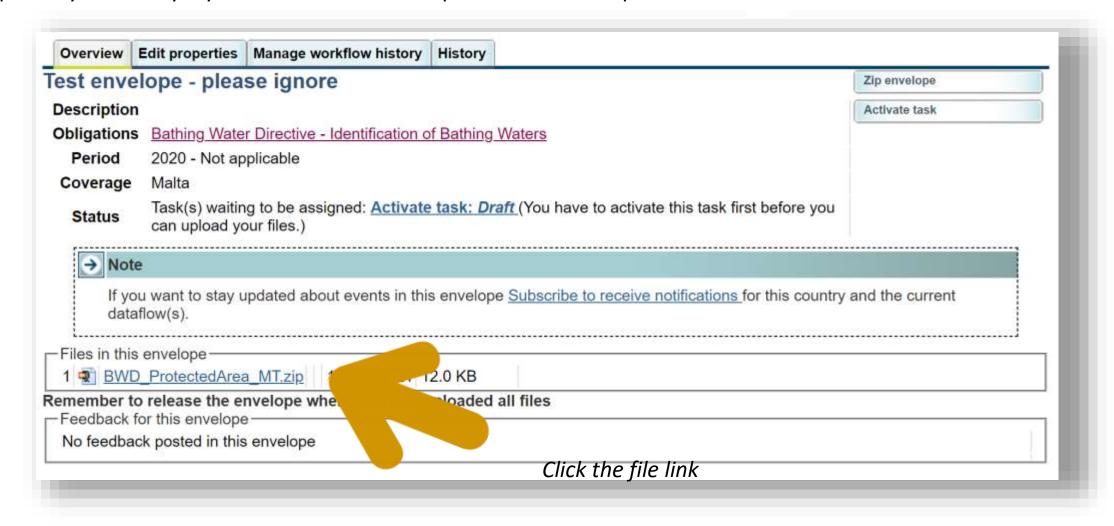
Add the prefilled files

This step is only necessary if you want to download a prefilled shapefile, and update the data.



If you already have prepared your delivery, you don't need to do this.

This step is only necessary if you want to start with a prefilled set of shapefiles.



If you already have prepared your delivery, you don't need to do this.

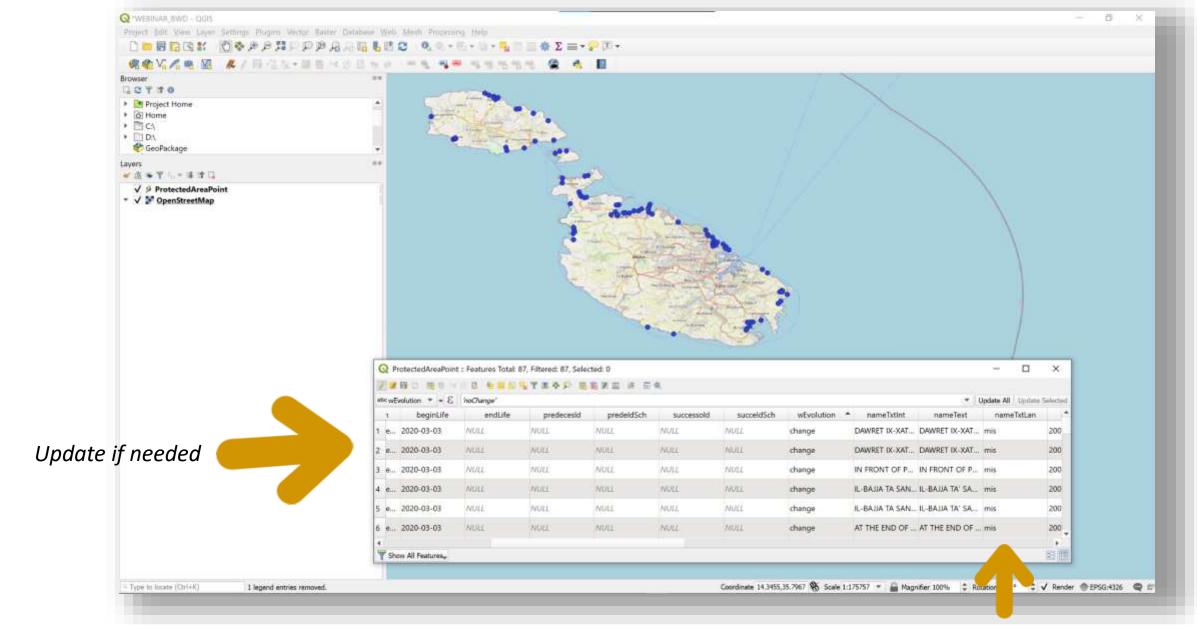
The content of the file depends on the country. Each shapefile must be in a separate folder.

| Archive: | /tmp/tmpKpE | TXA | | |
|----------|-------------|-------|---|--|
| Length | Date | Time | Name | |
| | | | | |
| 5 | 06-14-2021 | 11:06 | ProtectedAreaPoint/ProtectedAreaPoint.cpg | |
| 529798 | 06-14-2021 | 11:06 | ProtectedAreaPoint/ProtectedAreaPoint.dbf | |
| 168 | 06-14-2021 | 11:06 | ProtectedAreaPoint/ProtectedAreaPoint.prj | |
| 972 | 06-14-2021 | 11:06 | ProtectedAreaPoint/ProtectedAreaPoint.sbn | |
| 172 | 06-14-2021 | 11:06 | ProtectedAreaPoint/ProtectedAreaPoint.sbx | |
| 5668 | 06-14-2021 | 11:06 | ProtectedAreaPoint/ProtectedAreaPoint.shp | |
| 796 | 06-14-2021 | 11:06 | ProtectedAreaPoint/ProtectedAreaPoint.shx | |
| | | | | |
| 537579 | | | 7 files | |

This step is only necessary if you want to start with a prefilled shapefile.

If you already have prepared your delivery, you don't need to do this.

You can now edit the shapefiles in your GIS software

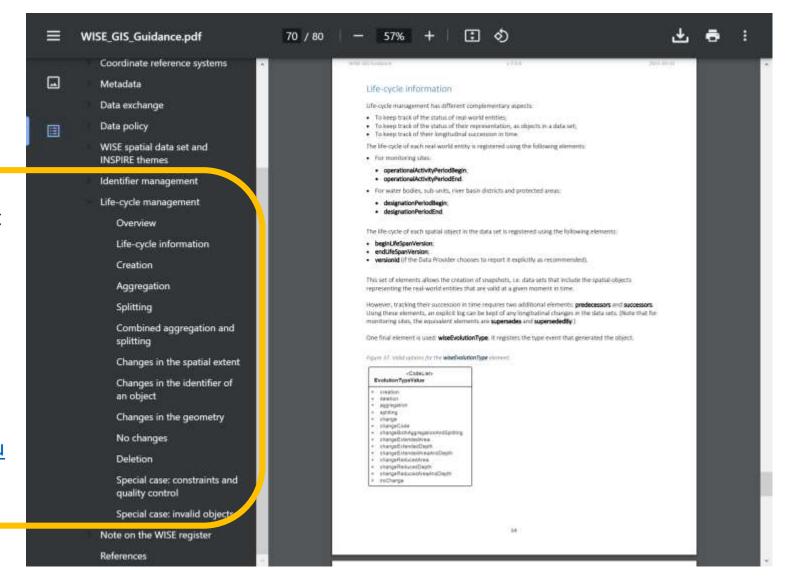


If you need to add, remove or change records...

Please refer to the chapter about life-cycle management in the WISE GIS Guidance.

It contains examples for all the possible cases.

Contact bwd.helpdesk@eionet.europa.eu if you need further clarifications.

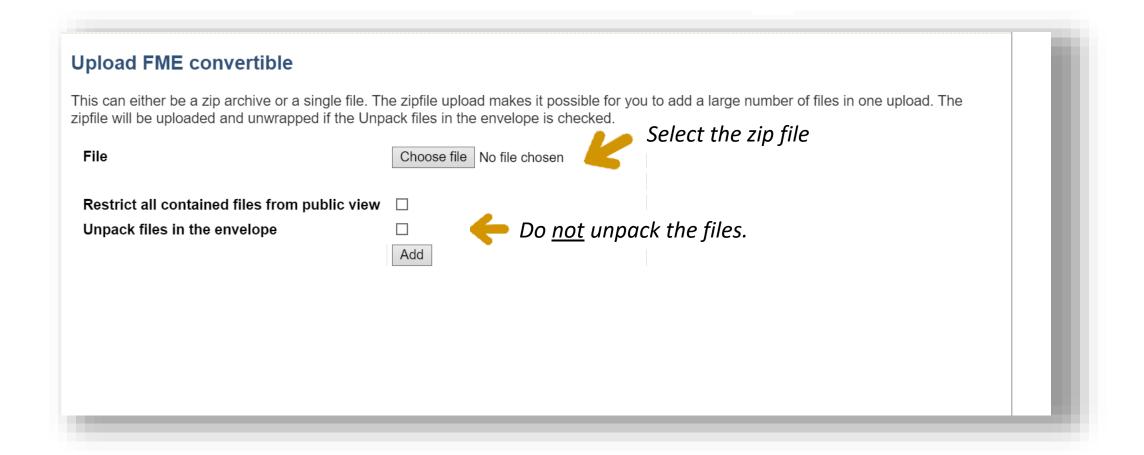


Uploading and converting the updated ZIP file

| Draft delivery | Add file | |
|--|-------------------------|------------|
|) Your first step is to <u>upload</u> one or more files into this envelope. You can always interrupt your work and continue | Add prefilled file(s) | |
| our contribution at a later time without losing data. | Upload zipfile | |
|) Before releasing the envelope to the public, you must run the automatic quality assessment on the data - this will ake a few minutes, after which the envelope will be back in Draft mode. | Upload and convert file | |
| Have a careful look at the report from the automatic quality assessment. You are able to check whether your data | Deactivate task | |
| s correct by looking at the report of errors and the statistics provided by the system. You can only release the envelopment of errors left. | ope if there are no | Upload and |
|) Once you choose Release envelope the automatic quality assessment will be run again on the data. In case of blow ill not be released and remain in Draft status. Otherwise, your envelope will be released and a confirmation of receivable. | | оргова ат |
| Files in this envelope | | |
| No files uploaded | | |
| Feedback for this envelope | | |
| | | |

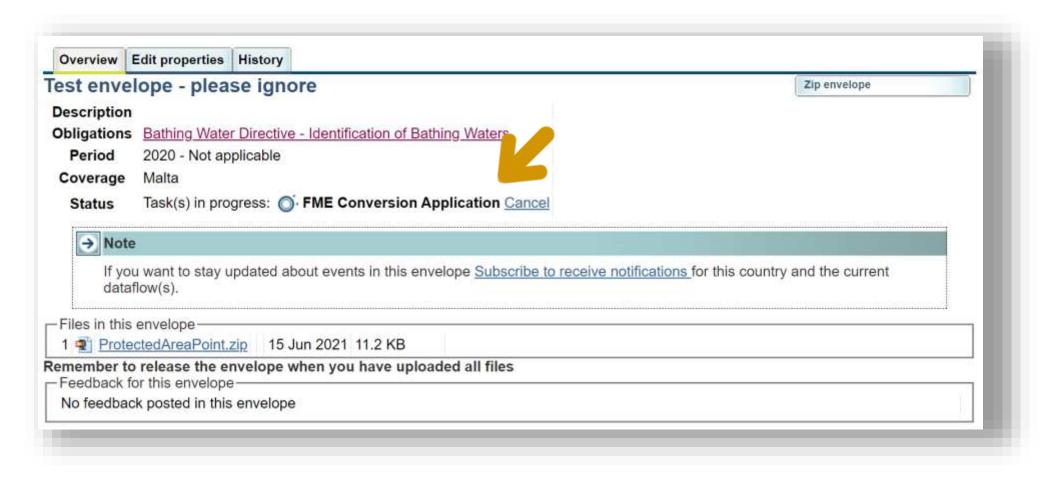
This step is only necessary if you want to convert a zipped set of shapefiles.

Uploading and converting the updated ZIP file



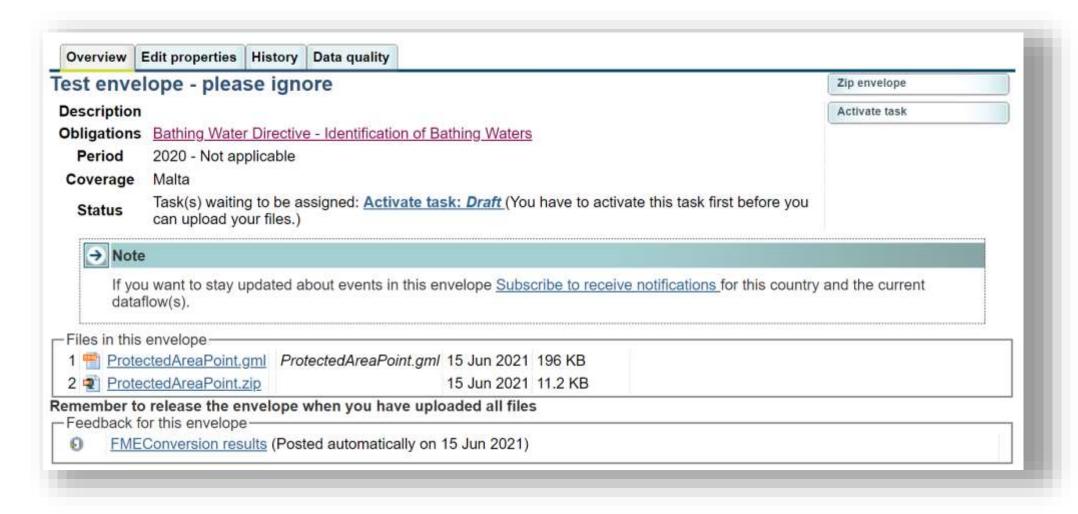
This step is only necessary if you want to convert a zipped set of shapefiles.

Wait for the conversion process to finish...



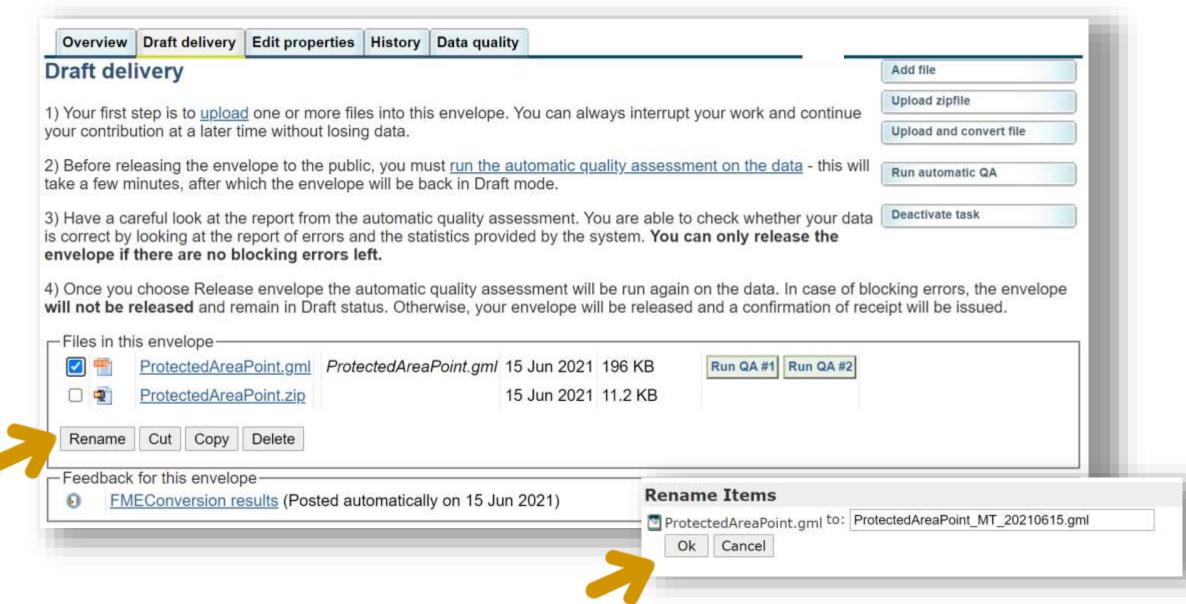
This step is only necessary if you want to convert a zipped set of shapefiles.

The GML file is added to the envelope...

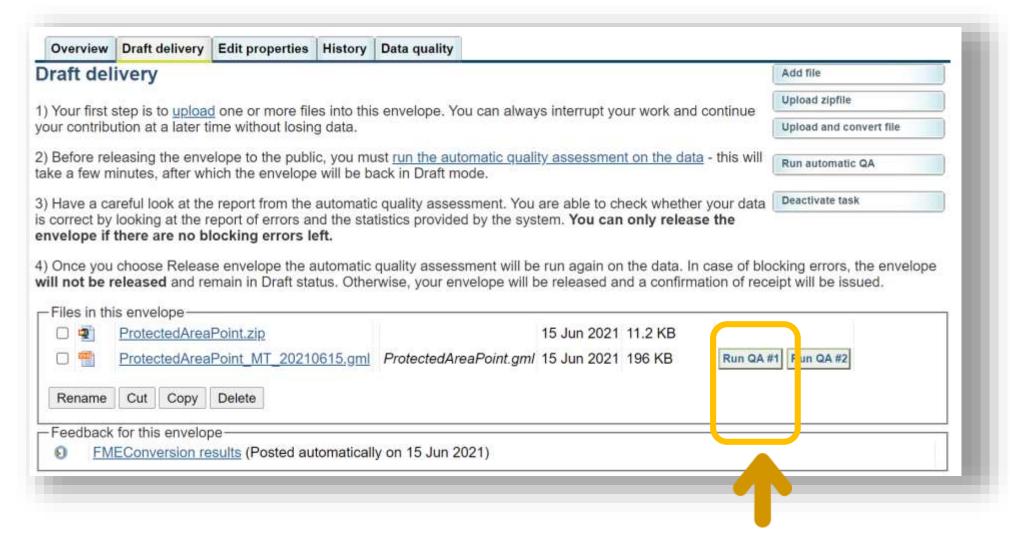


This step is only necessary if you want to convert a zipped set of shapefiles.

You may now rename the file if necessary...



You may now run the Quality Control...



Start with the XML schema checks.

XML schema validation

The structure of the GML file must be correct before it can be imported into the database, and additional validations can be run.



Correcting XML schema errors

If you used the prefilled shapefiles and the CDR conversion process, the overall file structure should be correct.

Any remaining XML schema errors are likely due to missing values or to invalid characters.

XML Schema validation BLOCKER The file does not conform to the data model defined in the XML Schema and blocks your submission. The XML Schema data model specifies the element names, document structure and data types. The file was validated against http://dd.eionet.europa.eu/schemas/WFD2022/GML ProtectedAreaPoint 2022.xsd The following table lists the contradictions in document structure, elements using wrong data types or missing mandatory values. Type Position Error message ERROR Line: 30, Col: cvc-pattern-valid: Value 'GROß GLIENICKER SEE, AN DER BADEWIESE' is not facet-valid with respect to pattern '[0-9A-Za-z-]+' for type 'String254Latin'.

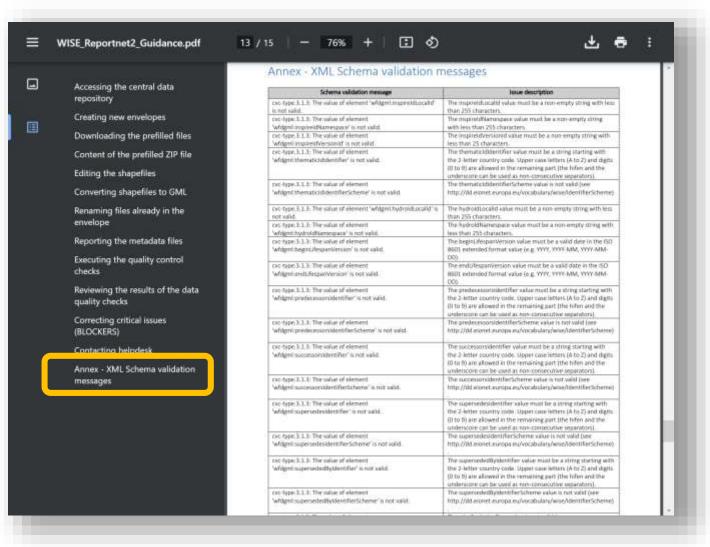
Correcting XML schema errors

The Reportnet guidance contains an annex with the list of the most important errors.

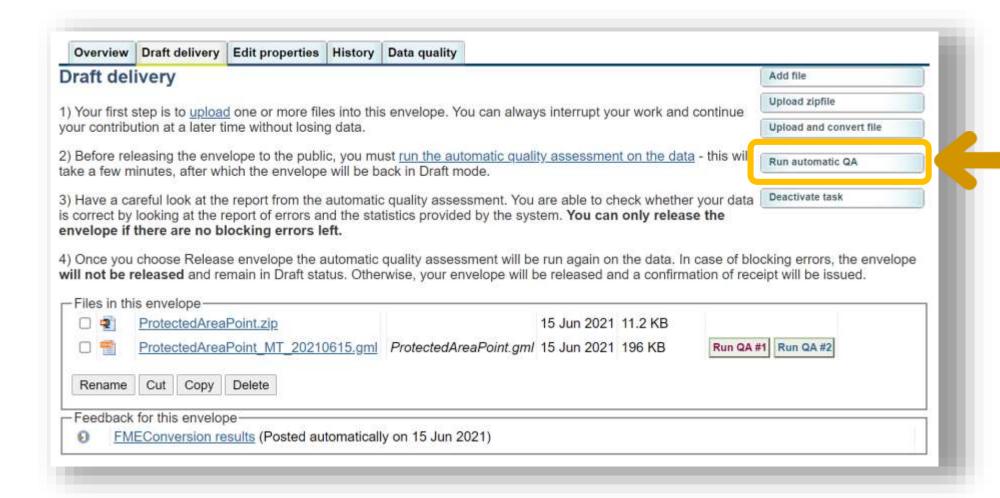
Correct those first.

Error messages





You may now run the full automatic QC...



Click this tab



Overview Edit properties History Data quality

Results of automatic data quality checks

This page displays summary information from all automatic data quality checks for this envelope. If you want to see more detailed results, just follow the "Show more.." links to the individual feedback items.

ProtectedAreaPoint_MT_20210615.gml

- INFO: ProtectedAreaPoint Import and Checks Show more...
- INFO: XML Schema validation passed without errors. Show more...

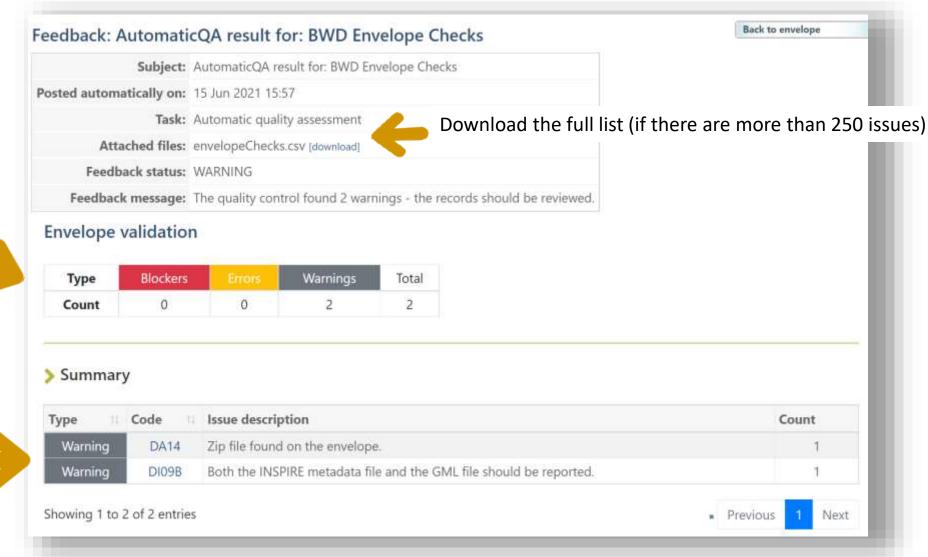
Envelope test

- INFO: BWD Cross checks Show more...
- WARNING: The quality control found 2 warnings the records should be reviewed. Show more...

Review these WARNINGS and correct them if possible

All BLOCKERS need to be corrected

Correcting WARNINGS



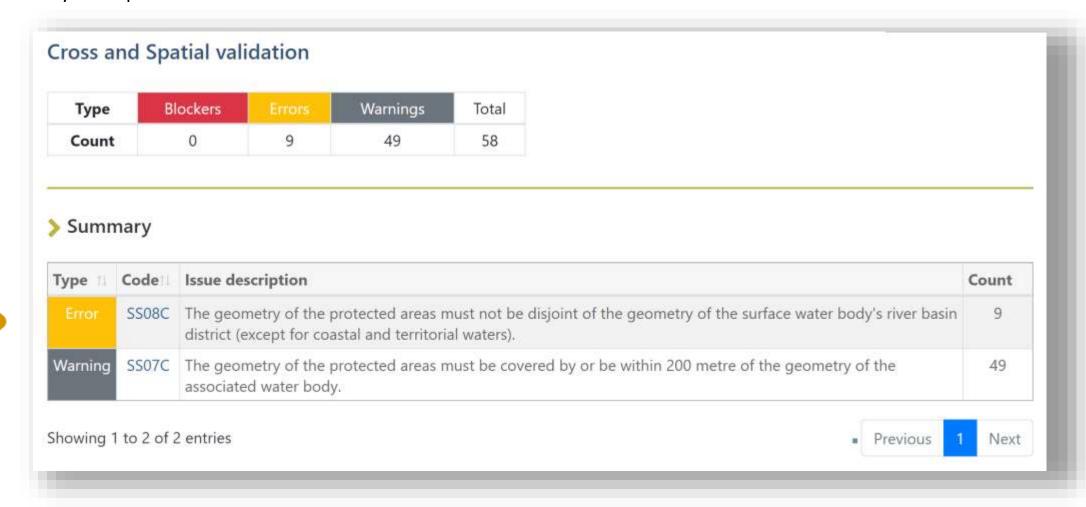
Number of issues



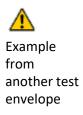
Description of each issue

Correcting ERRORS

Some errors may prevent the data from being correctly imported or used. If the envelope has errors it will be analysed during the Final Feedback phase, and a resubmission may be requested.



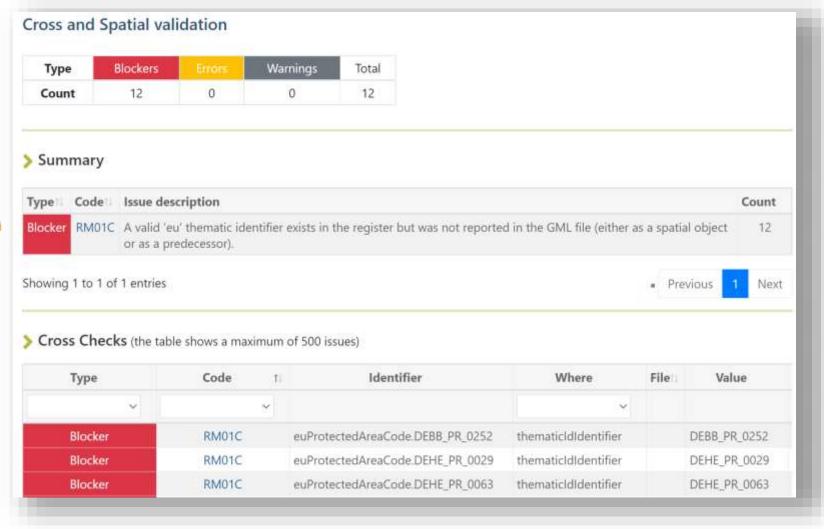


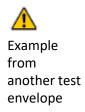


Correcting BLOCKERS

12 bathing waters are missing







If the QC fails...



Results of automatic data quality checks

This page displays summary information from all automatic data quality checks for this envelope. If you want to see more detailed results, just follow the "Show more.." links to the individual feedback items.



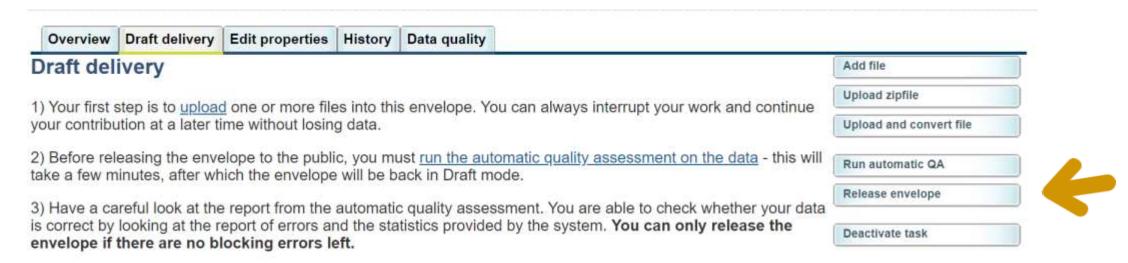
Envelope test

- BLOCKER: The QC process failed. The id in the FME server is #11786364. Please try again. If the issue persists please contact the dataflow helpdesk. Exception message is: Received result status FME_FAILURE for job Id #11786364 Show more...
- WARNING: The quality control found 2 warnings the records should be reviewed. Show more...

The QC processes may fail due to limited comunication or processing capacity of one of the different systems involved. If this happens, please run the QC again. Contact bwd.helpdesk if the error persists. Always send the link to the envelope.

Releasing the envelope

When all the BLOCKERS are corrected, the envelope can be released. The technical team will review it and provide the Final Feedback.



4) Once you choose Release envelope the automatic quality assessment will be run again on the data. In case of blocking errors, the envelope will not be released and remain in Draft status. Otherwise, your envelope will be released and a confirmation of receipt will be issued.

Key messages

- Use the prefilled shapefiles.
 - You only need to report if the data as changed since the last delivery.
 - Modify the records that have changed.
 - In the records that have not changed, set wiseEvolutionType = 'noChange'.
- Review the quality results
 - Correct the BLOCKERS and review any ERRORS and WARNINGS.
 - Contact bwd.helpdesk@eionet.europa.eu if you need clarifications.

Release the envelope

- ETC will review the data and provide the final feedback.
- If the envelope is technically accepted, it will be integrated in the European dataset, and the Monitoring and Classification data must be reported in the November Data Call.

