

# **Reporting tools guidelines for the delivery of Article 12 and 17 data**

Final version – 26<sup>th</sup> April 2019

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# 1 Introduction

This document provides guidance on the use of the reporting tools package that is provided to Member States in order to assist with data preparation for Nature Directives reporting 2013 – 2018. While using the tools themselves is not mandatory, they ensure that the data conforms to the required standards for CDR upload and eventually to create the European dataset. The XML schema format must be adhered to in order to create this dataset. To facilitate this XML schemas and instructions have been provided on the reference portal for those not using the reporting tools.

The tools described below are the Reporting tools for Article 12 and Article 17 data and the EEA range tool. In addition to this user guide, there are 'read me' files available on the reference portal with instructions for installing and getting started with the tools.

These tools and XML schemas can be downloaded from the reference portal:  
[http://cdr.eionet.europa.eu/help/habitats\\_art17/](http://cdr.eionet.europa.eu/help/habitats_art17/) and  
[http://cdr.eionet.europa.eu/help/birds\\_art12/](http://cdr.eionet.europa.eu/help/birds_art12/)

The range tool is an online application accessible on EEA with an Eionet account and can be used with a 10x10km or 1x1 km grid:

<http://discomap.eea.europa.eu/App/RangeTool/> (10x10 km grid)

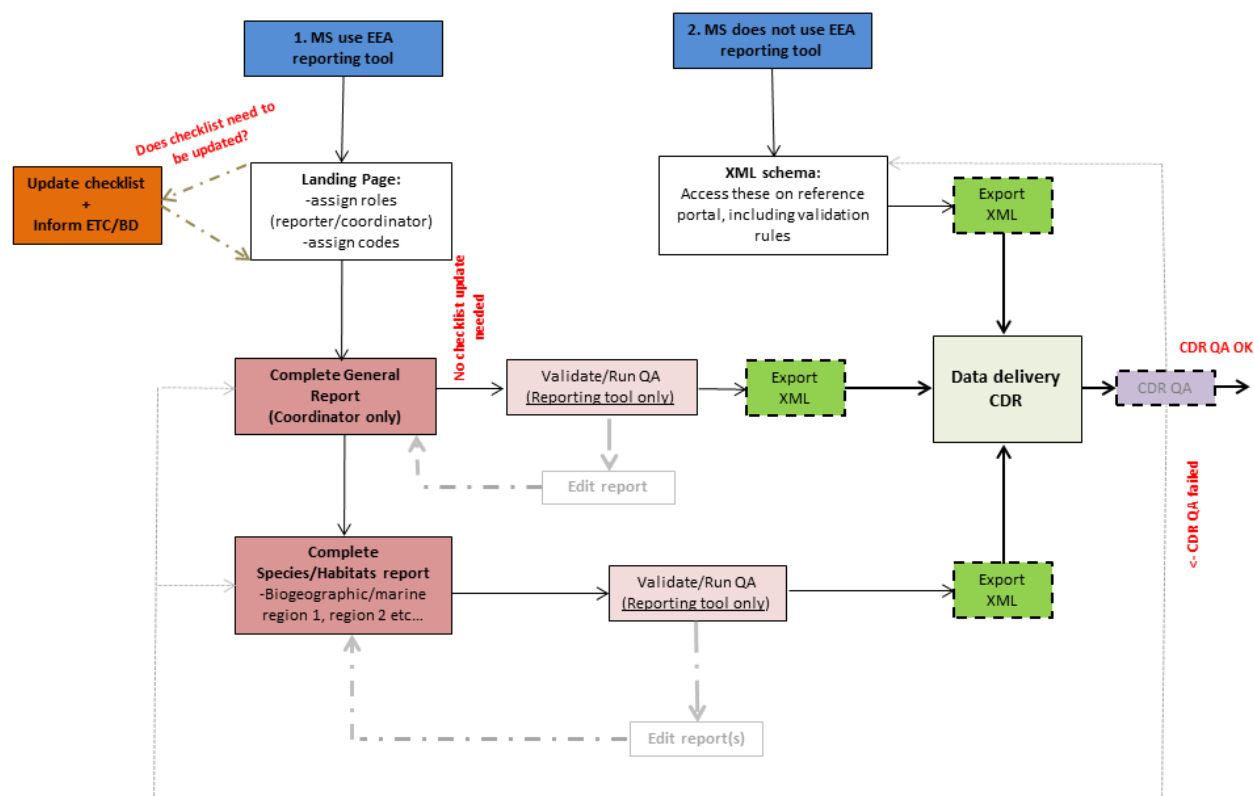
<http://discomap.eea.europa.eu/App/RangeToolEurope> (1x1 km grid)

To create an Eionet account contact: **[nature.helpdesk@eionet.com](mailto:nature.helpdesk@eionet.com)**

## 2 Reporting tool for Article 12 and 17 reporting




A general overview of using the reporting tools to create the XML for CDR upload is shown in figure 2.1 below. A step by step guide is further described from section 2.1 onwards.

**Figure 2-1 Overview of the reporting tools process**



## 2.1 Downloading and opening the tool

Three files are provided as part of the reporting tool: frontend Access, backend Access and a 'read me' file. The Access database is compatible with MS Office suite 2010 and above. The 'read me' file provides instructions on setting up and running the tool along with further information on known issues, previous versions.

 Article17-database	18/06/2018 16:33	Microsoft Access Base de données	7 052 KB
 article17-frontend	18/06/2018 16:32	Microsoft Access Base de données	8 624 KB
 readme	18/06/2018 16:32	Text Document	2 KB

### Opening the tool

The frontend is the user interface, it mirrors the reporting format available on the reference portal.

Before starting work with reporting tool, check the language setting, which should be set to English (file -> options -> languages, select English in 'Choosing editing languages' and set English as priority 1, see 'read me' file for more details).

**Figure 2-2 Landing page of the Article 17 reporting tool.**

- Choose a Country code (2 digit codes from the dropdown menu) and then choose a Reporter code. This is a free-text field and can be comprised of letters and numbers. Its purpose is only to identify those entering data and it's recommended to keep the code short and logical.

The country code is linked throughout the rest of the report e.g. in Section 5 Plans/Projects of the General Report it is not permitted to enter a site code in field 5.1 starting with another Country code.

- The 'Data Reporter' has access to enter/modify data for the 'Species reports' and 'Habitats reports' only (as shown in figure 2.2 above). The 'Coordinator' has access to the species and habitats reports as well as the 'General Report' and the 'Import ACCDB' and 'Export XML' functions seen on the landing page. The coordinator can also modify the checklists. The 'Import ACCDB' and 'Export XML' options are used to collate the inputs of multiple data reporters and eventually to export as an XML for delivery to CDR Reportnet. While there can be more than 1 data Coordinator, there can only be one who has access rights to upload to CDR Reportnet.

## 2.2 General report

Below (figure 2.3) is the home page of the general report.

- Tabs 1 to 7 contain the sections to be filled in for the general report.
- The timestamp in the bottom left hand corner is the time the report was initially opened and when data entry commenced. The timestamp remains the same for the duration of using the tool once the '*General Report*' has been opened.
- The '*Print Preview*' gives a document overview of all sections in the General Report. This will save scrolling back through tabs to get an overview of progress.
- '*Export to PDF*' will export the '*Print Preview*' output as a pdf.
- The '*Export XML*' is accessible throughout all tabs, it is used at the end of the process when all reports are completed (see validation and QA below).
- '*XML Schema validation*' ensures that the data entry adheres to the set XML schema for CDR upload.
- '*Run QA*' displays the results of a check against the validation rules only for fields which are ,mandatory and therefore will be rejected by CDR is not filled. This should be a final step before exporting the data to XML.
- Data are saved upon closing the general report ('*Close*'), data are saved automatically as soon as data entry to the general report has started. Closing the general report will bring you back to the reporting tool home page (figure 2.2 above).

**Figure 2-3 Home page of the general report**

General report - Article 17

**General report (Article 17)** 0. Member State

1. Achievements 2. General Information 3. Site designation 4. Management plans 5. Plans/projects 6. Measures taken 7. Annex IV species

**1. Main achievements under the Habitats Directive**

Describe briefly the main achievements under the Habitats Directive during the reporting period with a special emphasis on the Natura 2000 network. If a Member State wishes to add further documentation to what is requested in this format, please mention these Annexes and their file-names at the end of this free text section and upload the relevant files to the EEA's Central Data Repository together with the rest of the report. If possible, provide a translation into English.

**1.1 Text in national language**

**1.2 Translation into English**

03/01/2019 11:47:30 Print Preview Export to PDF Export XML XML Schema Validation Run QA Validate Report Close

Record: 1 of 1 No Filter Search

Below (figure 2.4) is shown the 'Print Preview' which allows viewing of the overall reporting format. The time stamp here is always the current time/date.

Figure 2-4 Output of the 'Print preview' function

repGeneral

### General reporting format for the 2013-2018 report

0. Member State **IE**

#### 1. Main achievements under the Habitats Directive

1.1. Text in national language

1.2. Translation into English

#### 2. General information sources on the implementation of the Habitats Directive – links to information sources of the Member State

2.1 General information on the Habitats Directive

2.2 Information on the network of pSCIs, SCIs and SACs

2.3 Monitoring schemes (Art 11)

2.4 Protection of species (Art 12-16)

2.5 Impact of measures referred to in the Art. 6.1 on the conservation status of Annex I habitats and Annex II species (Art. 17.1)

2.6 Transposition of the Directive (legal texts)

#### 3. Natura 2000 (pSCIs, SCIs & SACs) - site designation (Art. 4)

Natura 2000 (pSCIs, SCIs, SACs)	pSCIs, SCIs, SACs		SACs only	
	a) Number of pSCIs, SCIs, SACs	b) Surface area of pSCIs, SCIs, SACs	c) Number of SACs	d) Surface Area of SACs
3.1 All sites				
3.2 Terrestrial area of sites (excluding marine areas)				
3.3 Marine sites				
3.4 Date of database used				

#### 4. Set of conservation measures and management plans for Natura 2000 sites (SACs) (Art. 6(1))

	a) Number of SACs	b) Proportion (% area) of the SACs network
4.1 Necessary conservation measures have been established according to Art. 6(1) and are applied		
4.2 Conservation measures have been set out in a comprehensive management plan or a similar instrument		

#### 5. Measures taken in relation to approval of plans & projects (Art. 6.4)

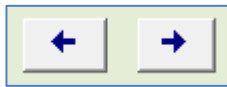
19/06/2018 09:10:00

Page 1 of 2

Page: 1 Filtered



The individual tabs can be scrolled using the buttons at the end of each tab;

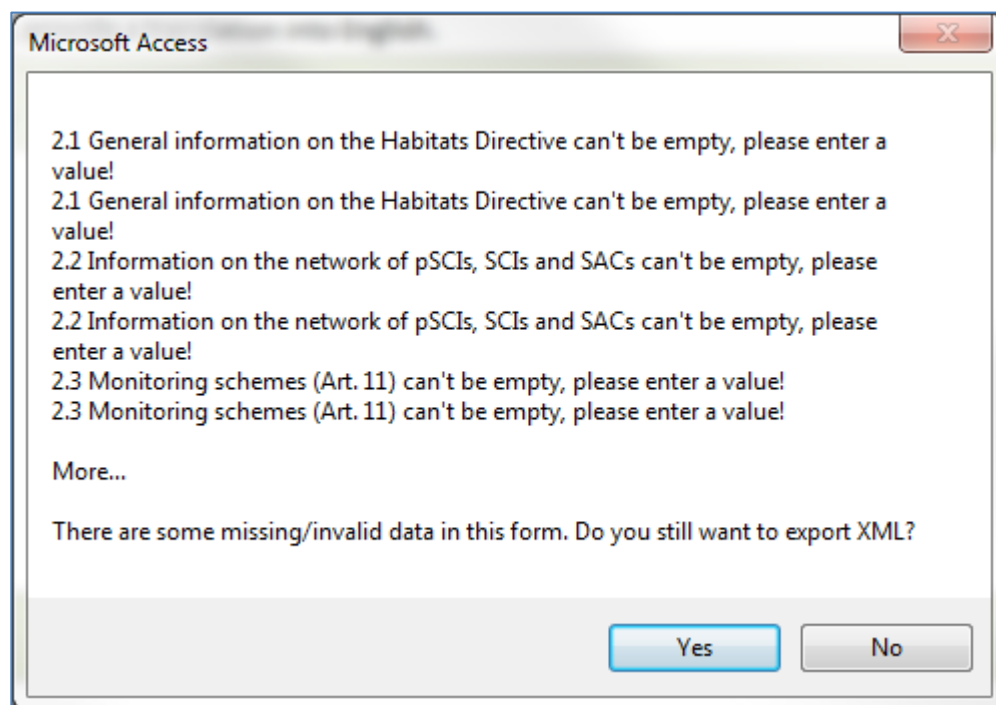


### Validation and QA of the General Report

The tools have a series of in-built rules that can highlight an error/discrepancy in data entry or prevent the data entry process from being completed.

- The 'Export XML' button is activated throughout the process. However, the report may be rejected by CDR if it has not been completed according to the validation rules or if essential fields have not been completed. Therefore, it is useful to use the 'Run QA' function before exporting to XML (see below). Below (figure 2.5) is an example of the summary given when preparing to export to XML but where several fields have been left empty;

**Figure 2-5 Summary message when using 'Export XML' with incomplete reports.**



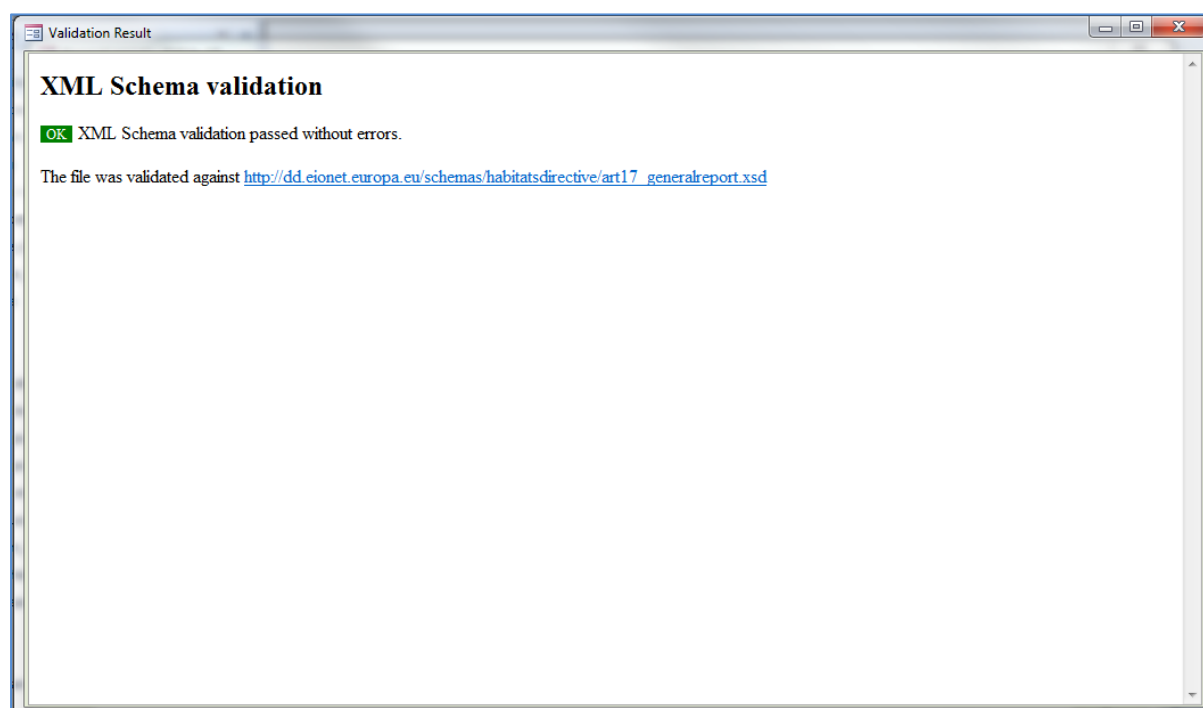
- If data aren't filled in as expected these are highlighted in red throughout the process. An example is shown below (figure 2.6) for Section 3 Site designation where an incorrect number of pSCIs, SCIs, SACs has been entered for field 3.1a.

**Figure 2-6** showing an error in numerical data entry, the value in field 3.1 a) should be equal to or greater than that in 3.1 c).

Natura 2000 (pSCIs, SCIs, SACs)	pSCIs, SCIs, SACs		SACs only	
	a) Number of pSCIs, SCIs, SACs	b) Surface area of pSCIs, SCIs, SACs	c) Number of SACs	d) Surface Area of SACs
3.1 All sites	52	850	53	848
3.2 Terrestrial area of sites (excluding marine areas)		524		523
3.3 Marine sites	32	326	32	325
3.4 Date of database used	28-03-2015			

The 'XML Schema validation' allows the user to check that data entry adheres to the XML schema rules. Below is an example of where the validation passes without errors for the General report (figure 2.7).

**Figure 2-7** Output of XML Schema validation



## 2.3 Completing a species or habitat type report

### Starting a report

The following section describes the process for adding a species or habitat report. The species template is mainly used to describe this procedure however the principles are the same for both. Some habitat report examples are used in the images.

Below is the home page of the species report (Annex B). Some options are General Report are seen ('Import ACCDB', 'Export XML' and 'Close'). The extra fields are:

- 'Statistics': this gives a summary of reports completed or remaining under the species report section (as seen in figure 2.16) and can be called upon at any time in the reporting process. The number of species to be reported on or which remain to be reported on by the Member State is shown in red.
- 'Notes report': produces a summary of comments/notes that the data reporter/coordinator has made on individual fields throughout the report (explained further below figures 2.14 and 2.15).

**Figure 2-8 Home page of the species report before and after a report has been submitted.**

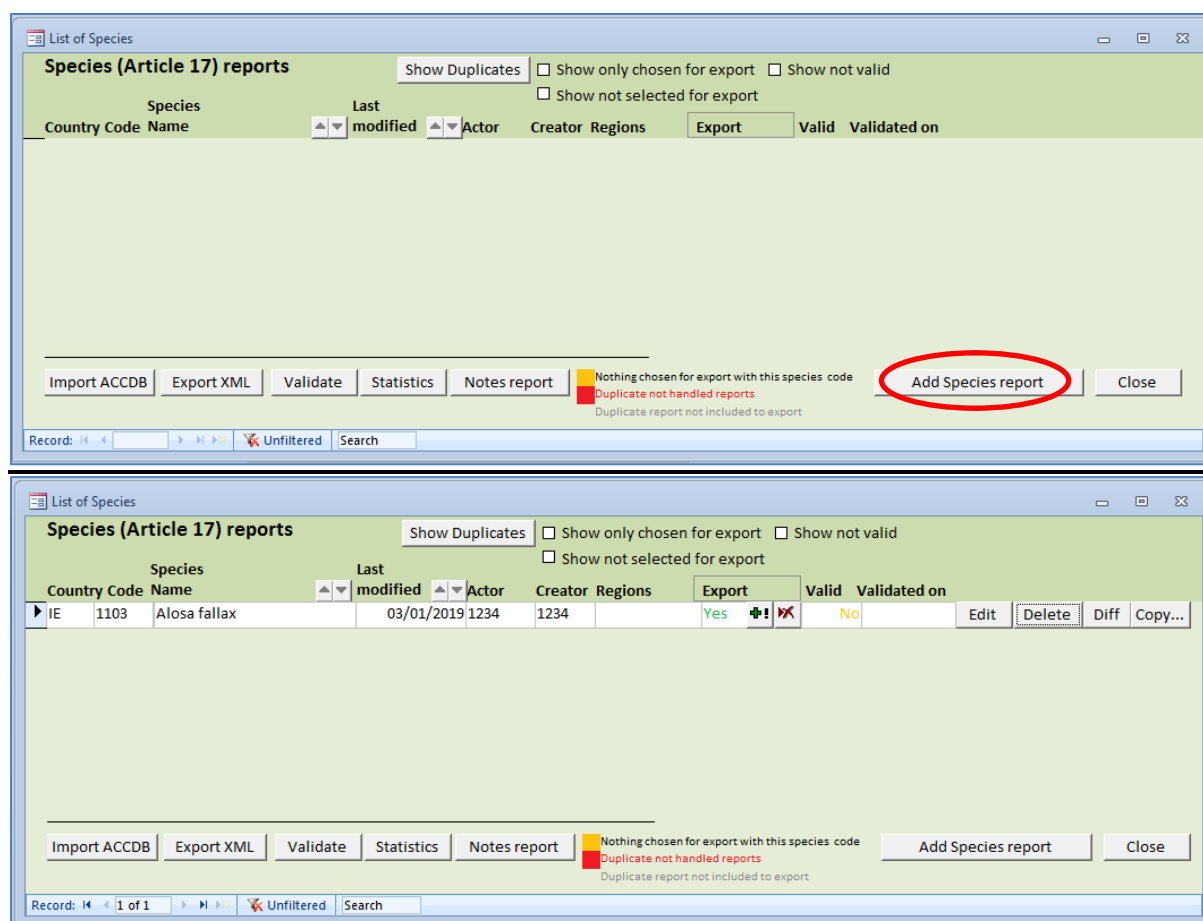


Figure 2.8 above shows an example of the species report home page before and after a report has been started. In this case, the report is not yet valid as the report is not yet complete. It's not necessary to complete one report before starting the next.

## Adding a report

Each species report is initiated by clicking on the 'Add Species Report' button in figure 2.8 above. Below is the homepage for one species report (figure 2.9):

Figure 2-9 Species report home page.

When a species report has been initiated, a field showing the reporting requirements is shown in the top right-hand corner. As an example of this, in figure 2.9 above, the Article 17 checklist notes the occurrence of *Alosa alosa* in IE as OCC and therefore reporting is 'Recommended' (left image). When the occurrence has been changed in the checklist to PRE the reporting field changes to 'Mandatory' (right image).

- The fields labelled in bold throughout the report are the mandatory fields to fill in. Information on the species status at **National Level** will be completed first.
- When entering the species code, only the options for the Member State are given e.g. IE reports 69 species therefore only 69 species codes are available. This information is taken directly from the linked checklist table that forms part of the database, **therefore in the exceptional case where changes to the checklist might be required, this should be done prior to reporting where possible** (see section 2.5 below).
- The data reporter indicates if the species is sensitive or not. If sensitive, this data will not be disclosed in the public database.

On the same page, after completing the national level sections 1 to 3), the reporter can start reporting at **Biogeographic/marine region** level. It is necessary to select the biogeographic/marine region in the Member State that the species is being reported in (figures 2.10 and 2.11) to continue reporting in sections 5 – 13 for species and 4 – 12 for habitat types for the biogeographical level report. Only regions that the species/habitat has listed in their respective checklists will be available for selection.

**Figure 2-10 showing the section that allows the addition of a biogeographical or marine region.**

- If the user wants to edit the information entered for a particular region, it is necessary to highlight the region in the table above, then pressing 'EditRegion'.

**Figure 2-11 all sections/tabs to be filled in for the species report.**

When all sections have been completed for the region the user will be brought back to this species report page to either choose a new biogeographic/marine region in which to report that species (if that is the case) or to close the report and start reporting on another species. Either way, each individual report can be validated to identify errors or missing fields throughout the process (*Run QA*).

Once a report for a particular species for a particular region has been completed, this is recorded on the species reports home page as below (figure 2.12):

**Figure 2-12 Species report home page after adding a report.**

Country Code	Species Name	Last modified	Actor	Creator	Regions	Export	Valid	Validated on	Edit	Delete	Diff	Copy...
IE	1103 Alosa fallax	03/01/2019 1234	1234	1234		No	No	03/01/2019	Edit	Delete	Diff	Copy...
IE	1092 Austropotamobius pallipes	03/01/2019 1234	1234	1234		Yes	No	03/01/2019	Edit	Delete	Diff	Copy...
IE	1348 Eubalaena glacialis	03/01/2019 1234	1234	1234	MATL	Yes	Yes	03/01/2019	Edit	Delete	Diff	Copy...

Some buttons across the table headings have become available now that some reports have been completed or are in progress:

- **'Export'**: this can be checked for yes or no depending on whether the report is to form a part of the final data export or not. If reports are not intended to be a part of the final delivery they can either be deleted or ticked 'x' under the 'Export' option to prevent them from forming part of the final XML. In figure 2.12 above, the report for 1103 has been highlighted for exclusion from the export. Reports not forming part of the XML are highlighted orange.
- **'Valid'**: this gives an overview of reports that are ready to export i.e. whether reports are complete or not. **'Edit'**: This allows the user to open a report to edit information.

- ‘Close’: As with the General Report, the ‘Close’ button will bring the user back to the reporting home page and all data will be saved upon closing the species report.

To note: The ‘XML Schema Validation’ and ‘Run QA’ for the species and habitats report are located in the individual report sections (figure 2.9) as opposed to the species/habitats homepage (figure 2.8).

Section 10 of the Habitats Report (or Section 11 of the Species Report) is the Conclusions section. As seen below, this section summarises the information from Sections 4 to 5 (Sections 5 – 7 for species) that should be used to fill in the fields 10.1 to 10.4 (figure 2.13).

**Figure 2-13 The Conclusions report for a habitat type.**

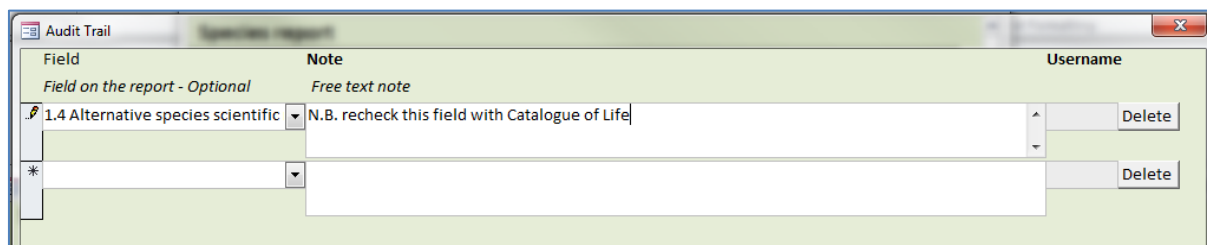
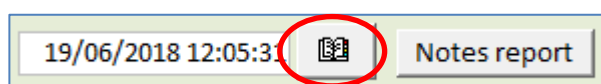
3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
<b>10. Conclusions</b>									
Assessment of conservation status at end of reporting period									
4.1	4.3	4.4a	4.4b	4.10a	4.10b	4.10c			
120	I	25	27	155					
5.2c	5.6	5.7a	5.7b	5.7c	5.13a	5.13b	5.13c		
115	D	50	50	95	115				
<b>10.1. Range</b>				Favourable					
<b>10.2. Area</b>				Favourable					
<b>10.3. Specific structure and functions (incl. typical species)</b>				Unfavourable - Inadequate					
<b>10.4. Future prospects</b>				Unfavourable - Inadequate					
<b>10.5. Overall assessment of Conservation Status</b>				Favourable					
<b>10.6 Overall trend in Conservation Status</b>				Stable (=)					

## Final checks

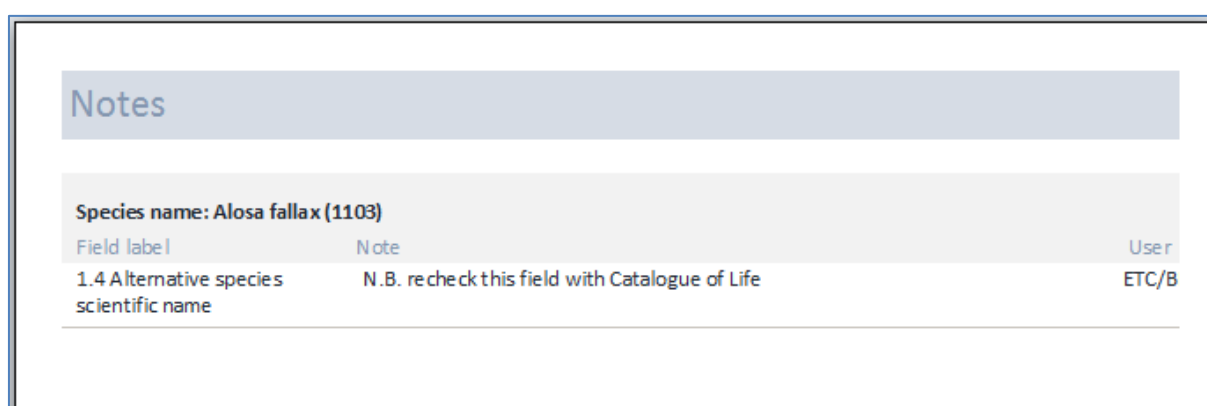
When all reports have been completed the following should be completed;

- ‘Run QA’: as explained above. The ‘Run QA’ validates the overall report (General report or Species/Habitats report) and will display the results of a check against the validation rules. Any errors will be displayed according to the rule type i.e. an error, warning or blocker.
- ‘Notes report’: Throughout reporting, the data reporter/coordinator has the option to add notes or comments on individual fields (figure 2.14). At the end of the process the notes can be summarised as shown below and can be used as a reminder to re-check a field or group of fields before exporting to XML (figure 2.15).

**Figure 2-14** Showing the audit function for particular fields is needed.

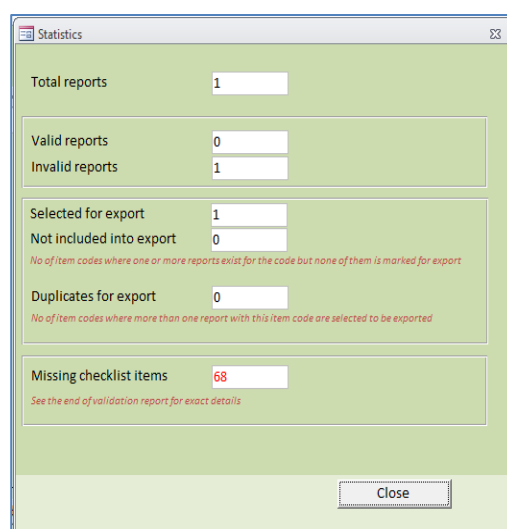
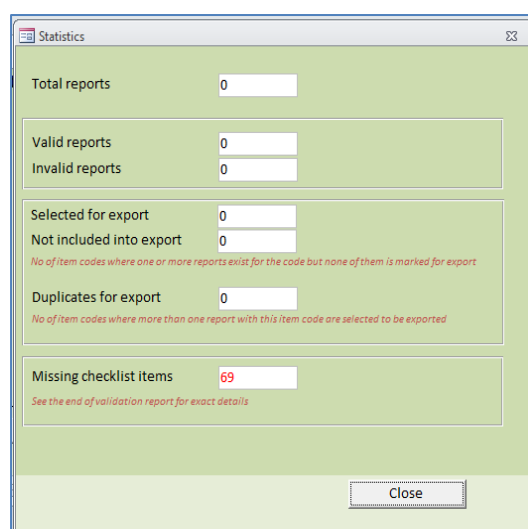


**Figure 2-15** Showing the output of the 'Notes Report' function.



- 'Statistics': can be produced at any time to show the progress with reporting (figure 2.16) in terms of numbers of reports completed, number of valid reports etc.

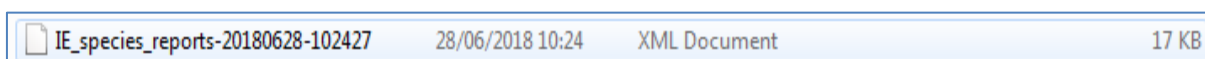
**Figure 2-16** Summary statistics for the species report showing both before and after a report has been started.





In the example above 69 species reports should be submitted by the Member State and the statistics are updated each time a report has been completed. This will also show if a report has been started but is still incomplete or there are some fields still missing (*'Invalid reports'*). If the checklist is updated for any reason (i.e. records added, records deleted) this will be reflected in the statistics report (see section 2.5 for more information on editing checklists).

- *'Export XML'*: this is the final step after *'Run QA'* and data revision (if necessary after running QA). When using this function the user is asked to give a file location. The file name is standard as shown below and will contain a timestamp of when the data were exported:



The species, habitat and general reports will all be exported separately and are treated as 3 separate files for submission to CDR.

## 2.4 Completing a birds report

The reporting procedure for Article 12 is practically the same as for Article 17. The main difference is that biogeographic/marine regions are not an element of Article 12 reporting.

**Figure 2-17 General report for Article 12**

As with figure 2.17 above, the Article 12 general report front page has the same layout as for Article 17.

**Figure 2-18 Starting a report in the Article 12 reporting tool.**

The screenshot shows the 'Bird Species Report' window. On the left, there are sections for '1.1 Member State', '1.2 Species code', '1.3 EURING code', and '1.4 Species scientific name'. The 'Bird Checklist Item' dropdown is open, displaying a list of species (e.g., Bonasa bonasia, Botaurus stellaris) and their subspecies units. The 'Season' dropdown is also open, showing options like Breeding, Winter, and Passage. The 'Recommended population unit' field is highlighted with a red circle.

The 'Bird Checklist Item' dropdown list gives the detailed information needed to report such as 'subspecies unit' and 'season' (figure 2.18), as separate reports need to be compiled according to the season the species is present in the Member State (passage, breeding or winter). These are automatically entered to fields 1.5 and 1.8 when the species is chosen from the Bird Checklist Item.

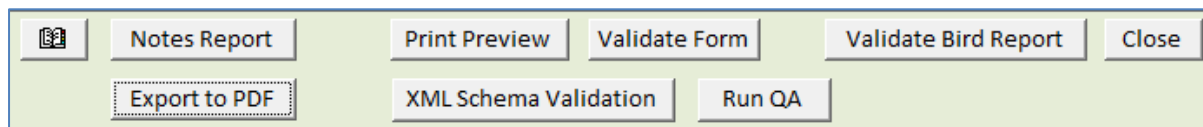
**Figure 2-19 Fields are filled in automatically from the checklist.**

The first screenshot shows the 'Recommended population unit' field filled with the value 'p'. The second screenshot shows the 'Type of plan in Checklist' field filled with the value 'NA'.

Other fields throughout the report automatically filled from the checklist based on the species chosen are 'Recommended population unit' in section 2 and 'Type of plan in

checklist' in section 6 Progress in work related to international Species Action Plans (SAPs), Management Plans (MPs) and Brief Management Statements (BMSs) (figure 2.19).

**Figure 2-20 options for finalising a birds report.**

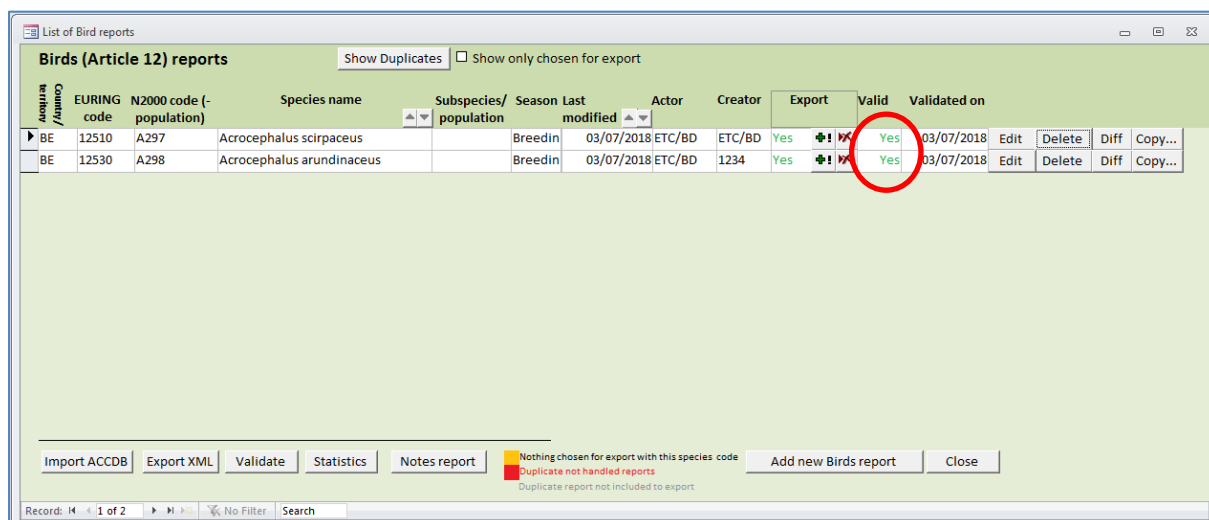


When finalising a birds report (figure 2.20), the following options are available:

- 'Run QA': This will provide a summary of both an individual bird report or the overall bird report, showing incomplete reports or reports missing.

Valid reports are indicated in the home page as seen below (figure 2.21):

**Figure 2-21 Final validation of the Bird species report.**



## 2.5 Editing the checklist

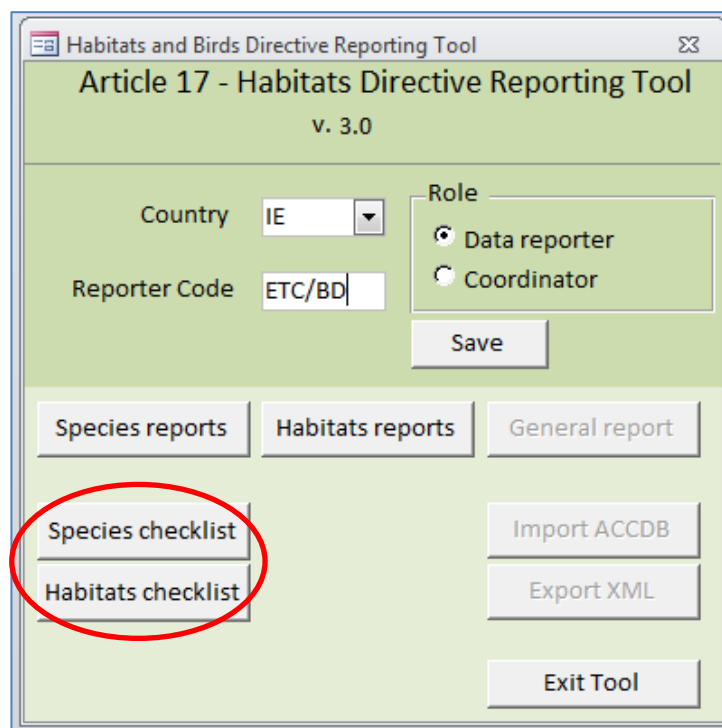
If necessary, the Member State checklist for species or habitats can still be modified at the point of using the reporting tool, however it's important to do this before commencing the reports as data are taken from the checklist table in the backend database.

The checklist can only be modified by the coordinator. The options for editing either species or habitats checklist are on the reporting tool homepage (figure 2.22).

**Important note:** If the checklist has been modified via the reporting tool Member States are encouraged to forward the revised checklist tables (copies of tables from the reporting tools or a note listing changes in the Member States checklist) to the ETC/BD prior to the

submission of national reports. This will ensure that the reference checklist in the reference portal (and on CDR) is updated and that the CDR QA can be fully implemented.

**Figure 2-22 Reporting tool home page with options to edit the species and habitats checklists.**



Changes made to the checklist are colour coded; red will show deletions, green will show additions and orange will show changes. There are 2 options for Member States to alter a checklist:

- 1) It can be amended directly in the tool by entering the species code or part of the species name and using the filters ('Set Filters') to locate the record as shown in figure 2.23. Fields that cannot be altered are greyed out (i.e. species name and code) and those that can (i.e. 'Presence' category) can be changed and have a comments field can be filled with free text (255 characters). If the comment field is left empty an automatic message is displayed showing the time and date of the update. The 'Delete' button is used if a species is no longer present. Only the checklist for the Member State reporting will be made available for alteration.

**Figure 2-23 Species checklist home page.**

After locating the record by using the 'Set Filters' option and modifying the record, the pen icon to the far left of the record shows that the record is in editing mode.

Clicking the pen icon will accept the modification however it is not necessary to use this for saving the modification, this happens automatically if the user exits without completing this step.

Records can be added using the 'Add New' button as below.

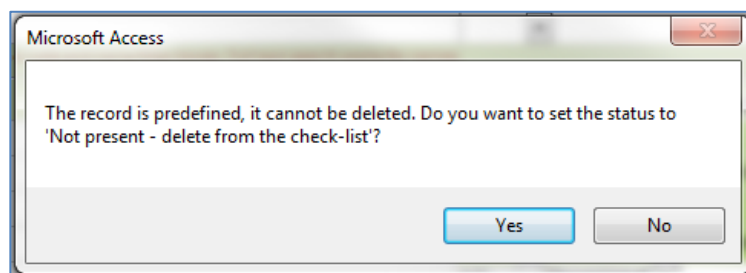
**Figure 2-24 Adding a new record to the MS checklist.**

Code	Name	Region	Presence	Comments	Annex II	Delete
1276	Ablepharus kitaibelii	ATL	Marginal	Updated by IE on 25/06/2018 12:51:33	N	Delete

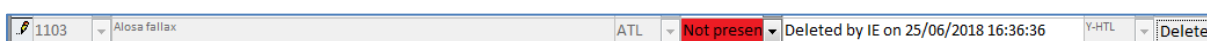
Records added by the coordinator will appear with a green background (figure 2.24).

When deleting a record from the checklist, the following message is seen (figure 2.25):

**Figure 2-25 warning message for deleting a record from the checklist.**



The record will remain in the checklist but it will be highlighted in red as 'Not present' as seen below;

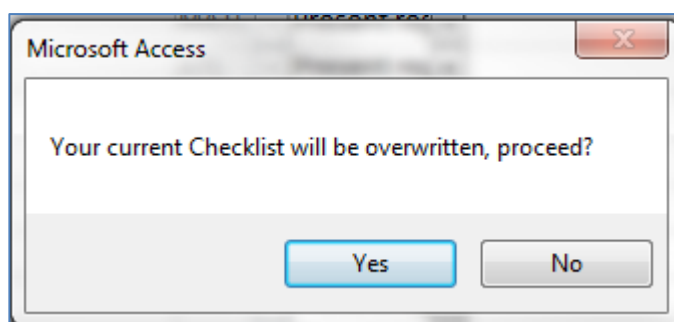


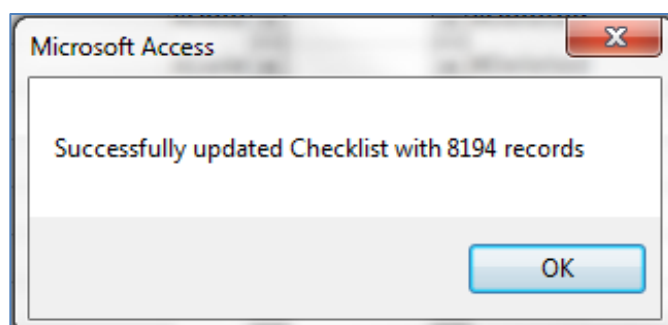
2) The existing checklist can be exported and amended outside the reporting tool, in this way the coordinator can send the updated checklist to data reporters to replace in their reporting tools. The 'Export Table/Import Table' options allow the checklist data to be exported and then imported to replace the existing table. The data are exported in .accdb format and there is no file naming restriction.

'Import table' function should be used also if data coordinator needs to update the existing tool checklist with revised reference checklist made available by ETC/BD.

When importing the table into the reporting tool, the following messages are seen:

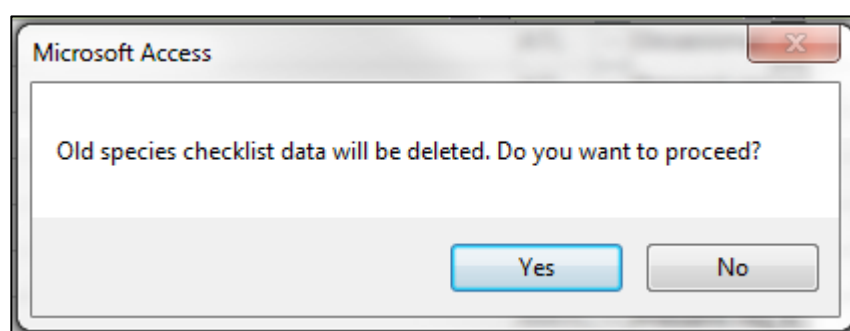
**Figure 2-26 Importing the checklist to the reporting tool**





While only records on the Member State checklist can be modified, when importing a modified table, all checklist records will be verified, as seen with 8194 records above.

'Reset Checklist (ETC)' will discard any changes made by the coordinator. The following message will be seen at first:

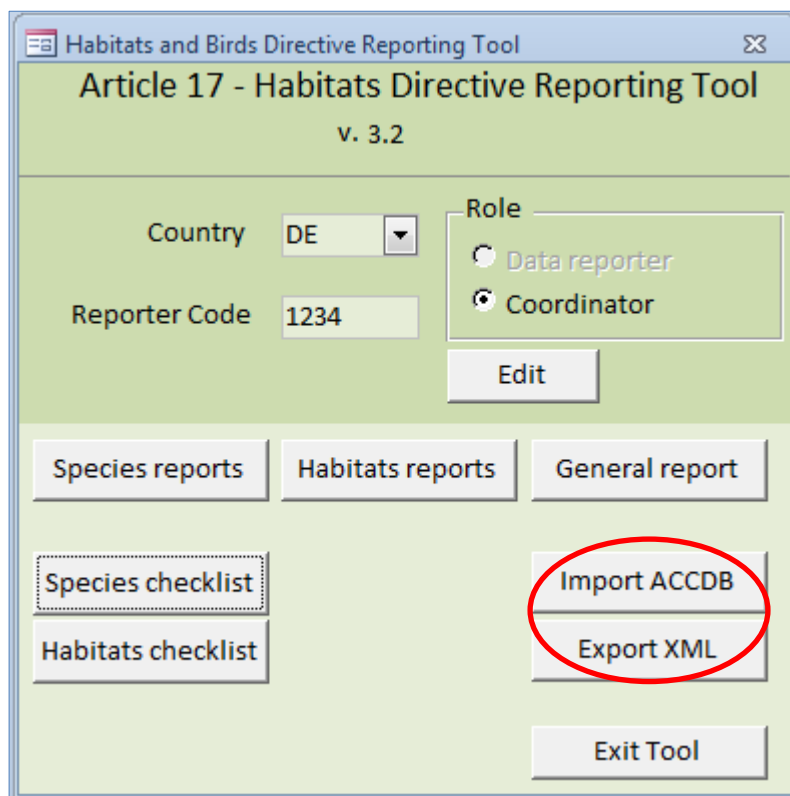


All amendments to the species checklist will be reflected in the 'Statistics' report as seen in figure 2.16 above where a new species has been added to the checklist.

## 2.6 Finalising the report

As noted in Section 2.1 above, the Coordinator has access to the 'Import ACCDB' and 'Export XML' functions on the tool landing page.

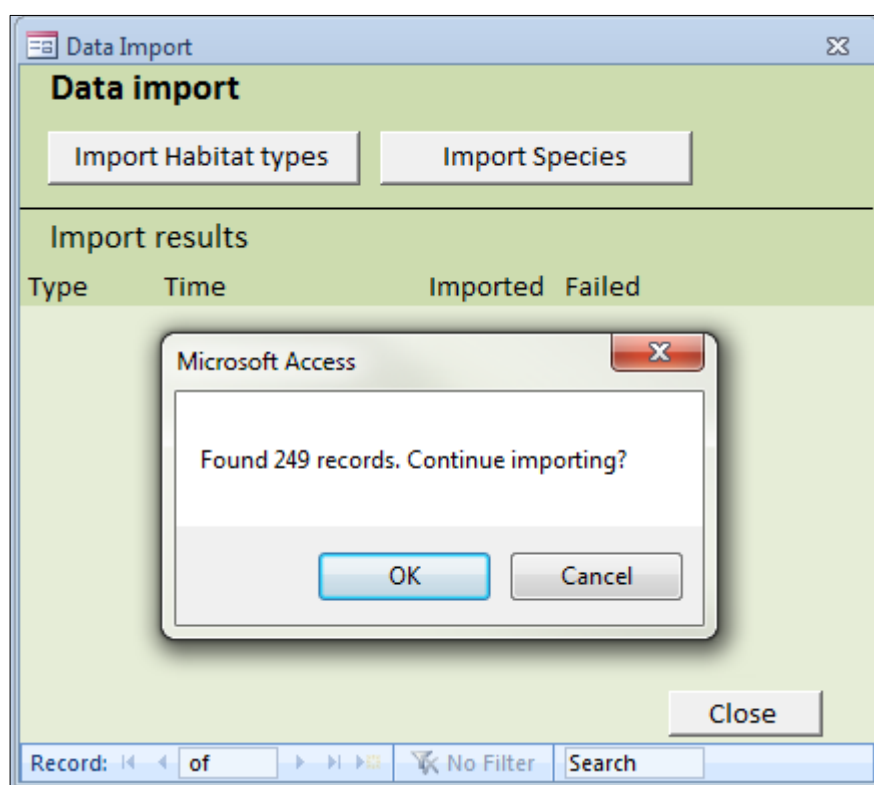
**Figure 2-27 Finalising the data import**



The '*Import ACCDB*' is used to import species/habitats reports created by other data reporters, either with the tool or in the same ACCDB format (figure 2.27). The import is initiated by clicking Import Habitat types or Import species. Depending on the number of reports to be imported, this may take some time. Progress can be monitored in the bottom left-hand corner of the window (figure 2.28).



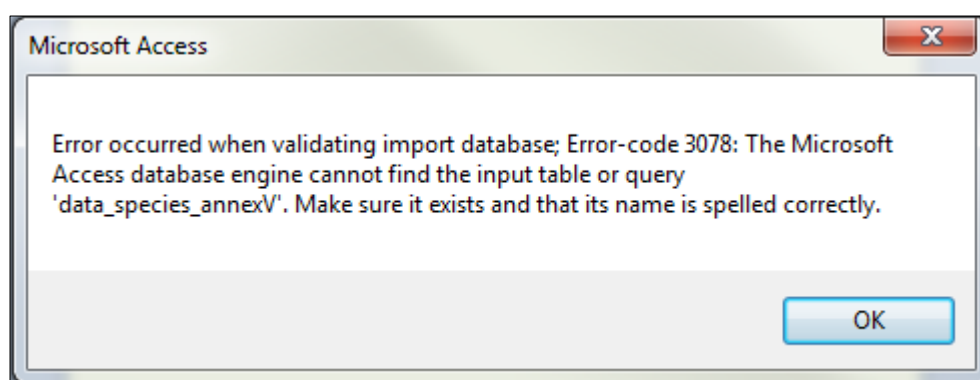
**Figure 2-28** initiating the import of a species database.



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A few examples of error messages that could appear are shown in figure 2.29. The messages detail the table and the feature code the error is associated with. Clicking 'OK' will remove the error message and allow the data import to continue.

**Figure 2-29** Possible errors when importing databases



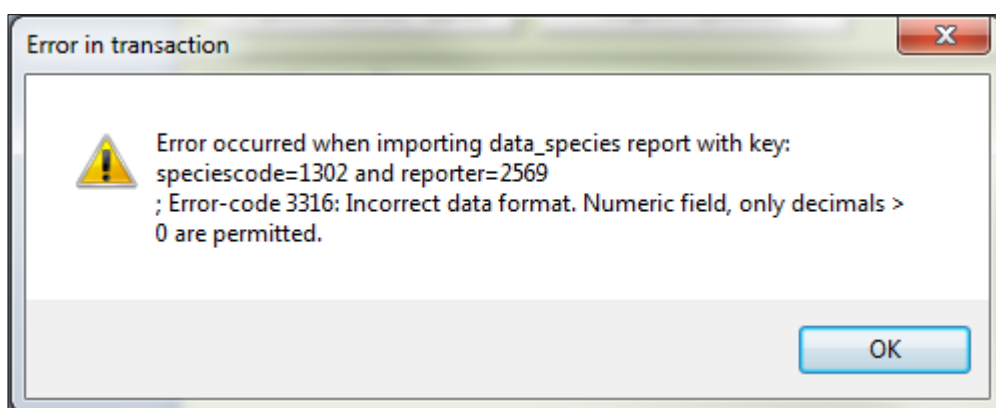
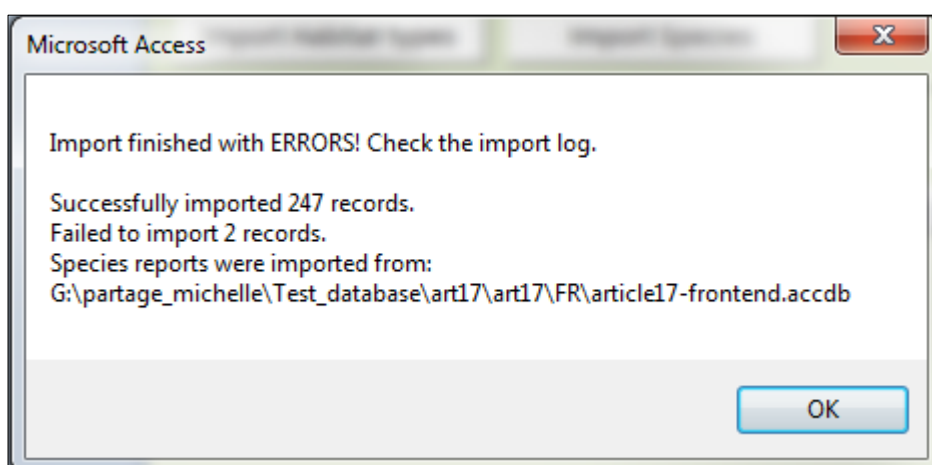


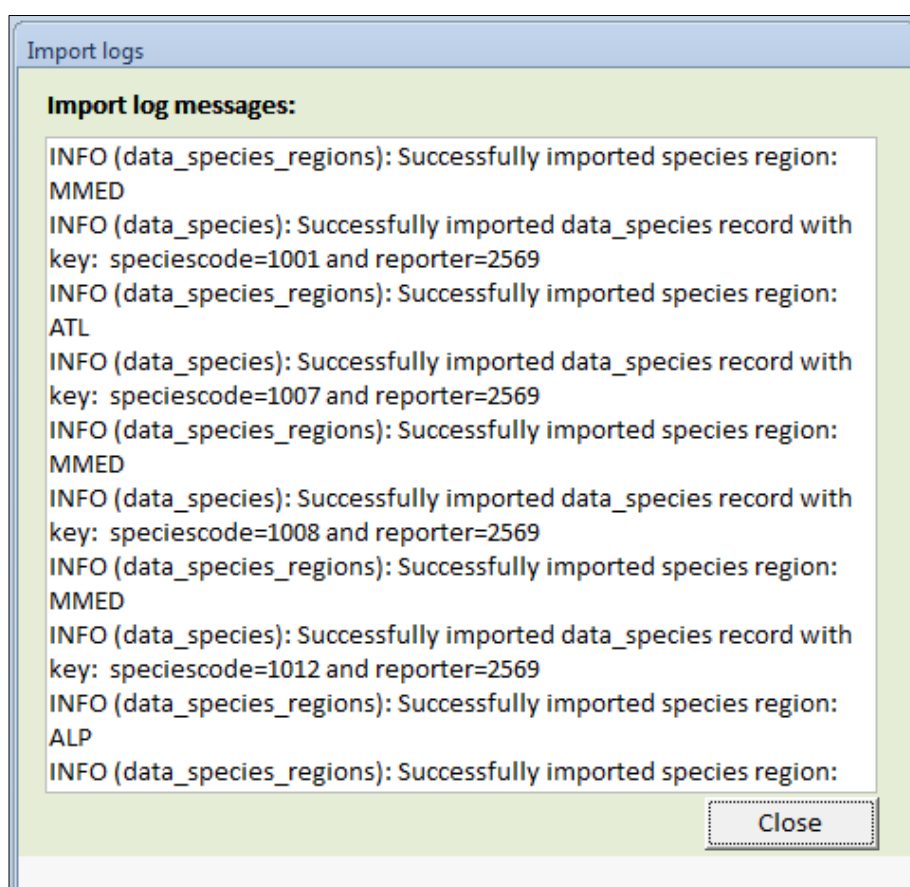
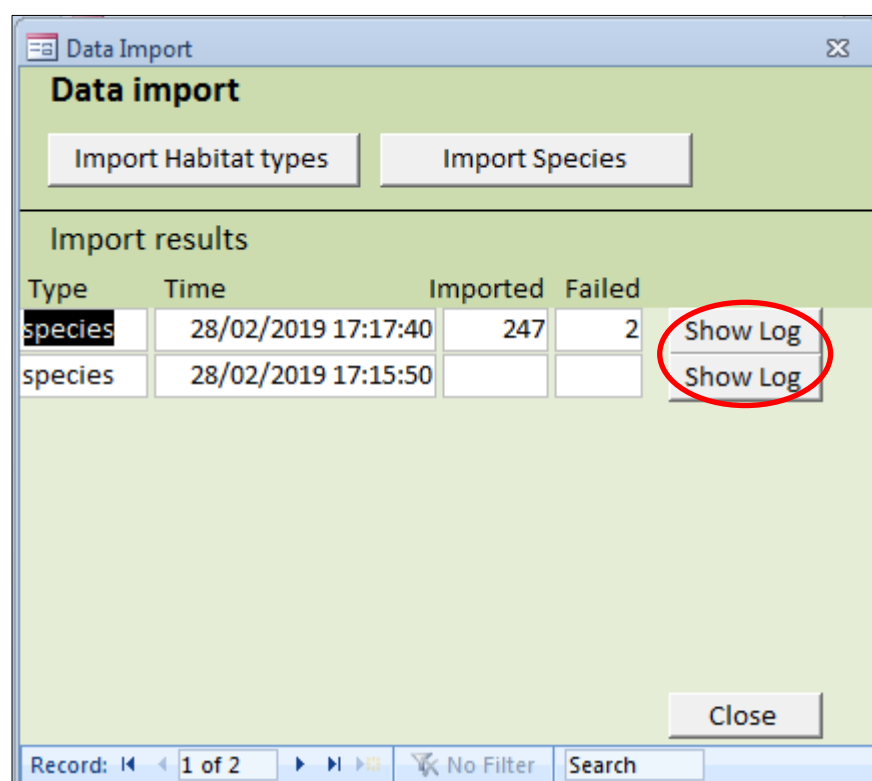
Figure 2.30 shows a summary of the data import, along with the number of records imported and those that failed to import. “Show log” will display more details of the import process. The imported records will be seen in the species reports section.

**Figure 2-30 Import finalisation**



Returning to the data import window (Figure 2.31) will also show the details of all activity regarding data import i.e. the time, date, successful and failed imports. The ‘Show log’ will expand on this and label the successfully imported records by species or habitat code, the region they are associated with and the reporter code.

Figure 2-31 Data import page



## 2.7 Validation Rules

The XML schema are governed by a series of validation rules to ensure that essential data are provided and that data can be collated in a uniform manner for the European database.

The rules are divided into different error levels:

*'Blockers'*: a major error and data reported is blocked in Tool and/or Reportnet data is required to be redelivered.

*'Errors'*: a major error but data reported is not blocked.

*'Warning'*: a potential (or insignificant) error and data reported is not blocked.

There are several 'validation' options visible throughout the reporting tools. Ultimately, 'Run QA' provides an overall validation of data. This is available in the individual species or habitats reports and the general report, and it summarises all outstanding fields to be completed along with the error level (i.e. error or warning). This QA uses the same validation procedure as the one used later on CDR and it provides the final 'automated' overview of data quality of a report (general, habitat, species). In exceptional cases<sup>1</sup> it may highlight possible errors that will trigger rejection of Member State's delivery on CDR ('blockers'). The issues highlighted by Run QA, which won't be fixed prior to submission, will be included in the post-submission automated validation feedback posted into the Member State envelope after submission. The same QA procedure can be performed on CDR once the completed XML files are uploaded.

Some of the validation options are left-over from previous version of the tool. While they are usable, the recommended overall validation is the 'Run QA' option.

---

<sup>1</sup> If used in a standard way (entry of information through editing forms) the reports created in the tool will not contain blockers.

**Table 2-1 The validation options in the Article 17 and Article 12 reporting tools.**

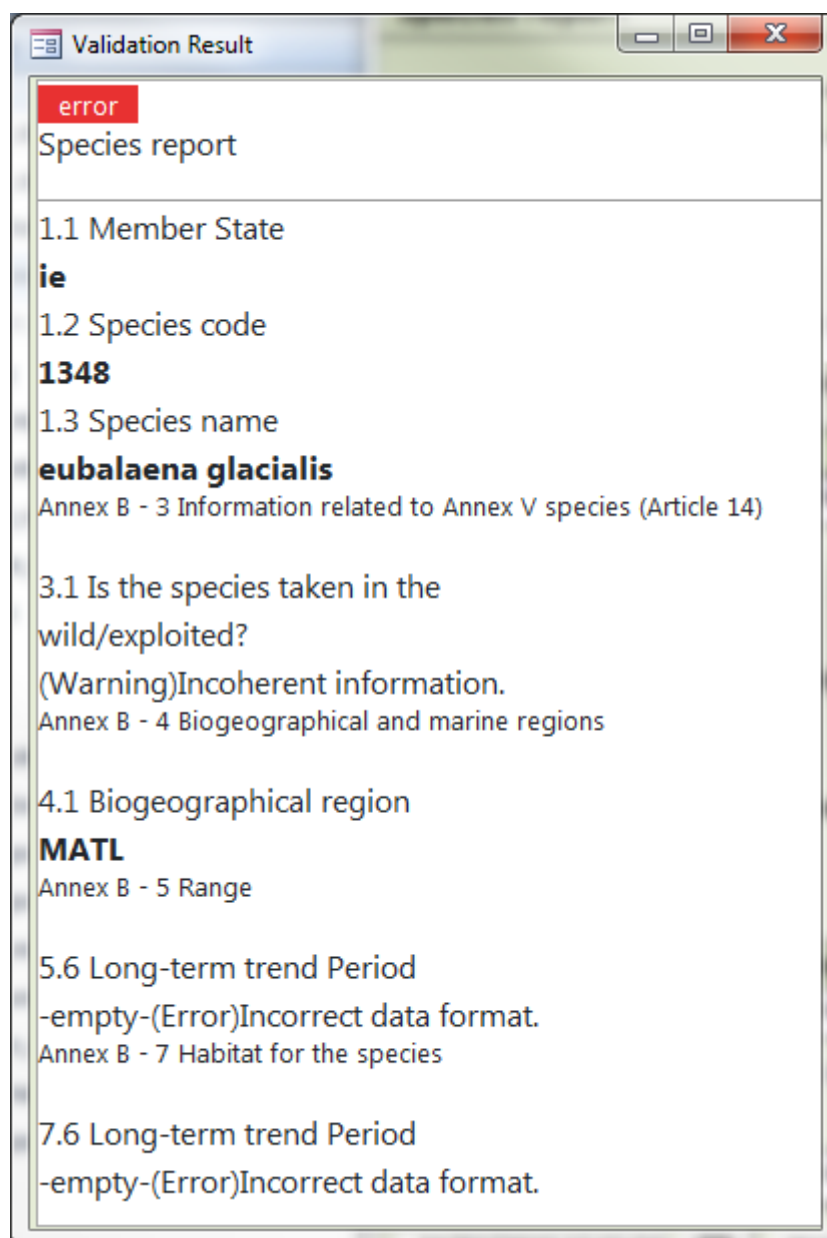
Button	Location	Function	Format	Requirement Y/N
Run QA ( <i>Primary validation check</i> )	Individual species/habitat report – National + biogeographical region	The online QA feedback. This displays the results of a check against the validation rules that result in error messages ‘warning’, ‘error’ and ‘blocker’ as a final check before XML creation. Some errors (‘blockers’) could cause the XML to be rejected by CDR.	Report printout	Y
XML schema validation	General report + individual sections of report	The online QA feedback. This allows the user to ensure that the data entry adheres to the XML schema requirements. A simple pass/fail window is displayed with a link to the XML schema the data were validated against. If the reporting tools are used in a standard way (values only entered via forms inbuilt in the tool) this step can be omitted.	Pop-up	N
Validate section	Individual sections of species/habitat report	Inbuilt reporting tool QA <sup>2</sup> . This allows the user to validate the information recorded in sections as they go along. It will display a simple ‘This section is valid’ pop-up if the data are correct, if not a list of outstanding fields (mostly missing mandatory information and some principal errors related to not following the reporting guidelines) and instructions on how to fill them, are displayed. Invalid fields are highlighted red in the editing form for easier correction.	Pop-up	N
Validate report	General report +Individual sections of report	Inbuilt reporting tool QA <sup>2</sup> . This validates the individual species/habitat report. The output (simple MS access textual ‘report’) will list all sections and fields of the report that have not been filled correctly/are still to be filled. This is the same as ‘validate’ above but just for the individual report (i.e. the individual species or habitat). In parallel, invalid fields are highlighted red in editing forms for easier correction (should be launched from	Report printout	N

		'Edit region' forms to highlight red errors in biogeographical region section of the report).		
Validate	Species/habitat report homepage	Inbuilt reporting tool QA <sup>2</sup> . This validates all species/habitat reports in one go. It summarises the incomplete reports along with fields missing. For reports not yet started (not included in the list of reports in the form) it will list all species (by name only) and all habitats (by code). It will not provide information on valid/complete reports (i.e. noted as 'Yes' for 'valid' on the report homepage).	Report printout	N
Validate region	Individual sections of report (Article 17 only)	Inbuilt reporting tool QA <sup>2</sup> . This validates the species/habitat for that region. It shows a list of the remaining fields to be completed for that species/habitat for that region. Due to technical restrictions this QA is unsuitable when there are more issues in the reported data (e.g. work is in progress and many fields are still unfilled).	Pop-up	N

---

<sup>2</sup> The validation features (QA) inbuilt in the tool are not exhaustive with regards to CDR QA (accessible via 'RunQA'). For specific situations (e.g. reports for occasional, marginal habitat and species or some more complex validation rules crosschecking several fields), users might experience wrong error messages although the data are in line with the specific reporting requirements for those habitat and species as outlined in the Explanatory notes and guidelines. **Use Run QA in case of any doubt.**

Figure 2-32 output of the 'Run QA' function.



In the example above (figure 2.32), 'Run QA' highlights fields where data are either in the incorrect format (Error, 5.6 & 7.6) or where there is incoherent information (Warning, 3.1). While the data may still be exported and uploaded to CDR, they may not pass the extended CDR QA checks and the reporting tool check is not as exhaustive as the CDR check. These issues can be resolved in the tool by editing the report and re-running 'Run QA'.

A detailed list of validation rules can be found on the reference portal ([http://cdr.eionet.europa.eu/help/habitats\\_art17/](http://cdr.eionet.europa.eu/help/habitats_art17/)).

## 3 Range tool

The following section describes the procedure for using the Range Tool to create a range grid based on a species or habitat distribution. The resulting output is not an essential part of the Member States final data upload to CDR, however the range value is a requirement for the reporting format: field 5.1 for species and field 4.1 for habitats. The recommended parameters to be used for calculating a range value for a species or habitat are outlined in the Explanatory Notes and Guidelines for the period 2013-2018 (DG Env, 2017).

The Range tool uses the following information for the calculation of range:

- Country borders (EuroBoundaryMap v12) by 10 km grid cells
- Biogeographical region v16 by 10 km grid cells
- MSFD regions v2017 by 10 km grid cells
- Habitats and species checklists as available in the Art 17 Reference portal.

### 3.1 Data preparation

The procedure has been designed to be as simple as possible. The only requirement is the upload of a zipped file containing the gridded distribution shape file. This means all associated files i.e. shape file, .shx, .sbx, .sbn, .dbf including a .prj file are needed in order for the range tool to read the coordinate system. If the data are provided in a different projection (i.e. not Lambert Azimuthal Equal Area ETRS89-LAEA, EPSG:3035), it will be projected by the tool. Further technical specifications for spatial data are given in the 'Data delivery manual for tabular and GIS data' available on the reference portal ([http://cdr.eionet.europa.eu/help/habitats\\_art17/](http://cdr.eionet.europa.eu/help/habitats_art17/)).

The input shape file will be based on the EEA 10 X 10 grid (described above, or 1 x 1 grid in certain situations where a Member State needs to report at this scale). Depending on how the Member State processed their data the input shape file could be comprised of one record per habitat/species code if the polygons are dissolved or several records per habitat/species code if the polygons are not dissolved.

### 3.2 Procedure (10x10 grid):

*Login with an EIONET user account:* to obtain a user account please contact [nature.helpdesk@eionet.europa.eu](mailto:nature.helpdesk@eionet.europa.eu).



## Login

EIONET user name

Password

Login

*Upload the zipped shapefile:*

EEA Range tool

### Quickstart

Create a new transformation job by uploading one or more **(zipped) shapefiles**.  
Remember to include its companion files inside the zip (.dbf, .shx, etc).  
Please bear in mind that **only 10x10km grid cells** are supported in the uploaded files.

No file chosen

*Choose the relevant transformation parameters:* Refer to the reporting guidelines for the appropriate parameters to use for either species or habitats distribution.

**Important note<sup>3</sup>:** The current tool version calculates the gap distance from the centroid of the cells as opposed to the edge of the cell. It is therefore necessary to add an 'extra' grid to account for this. In the example below the desired gap distance calculation is 4 (i.e. 40x40 km) therefore 50000 is entered (i.e. + 1 10x10 km grid). The field containing either the habitat or species code should be chosen from the dropdown list.

---

<sup>3</sup> The procedure described from 3.2 to 3.4 is based on using a 10x10 km grid. If using a 1x1 km grid, please adapt the procedure accordingly i.e. used of gap distances etc.

## Prepare job

The following files have been uploaded, please specify transformation parameters below.

- XX\_Art17\_habitats\_distribution.shp

Please notice: parameters will be applied to all of the shapefiles. If this is not what you intended, click "Cancel", and compose a new zip containing only those shapes that share the same parameters.

If in doubt, include just one shapefile (with its auxiliary files) per zip

## Transformation parameters

Select country

-- select --

Do the uploaded files contain species or habitats data?

-- select --

Specify the field that contains the species/habitat code

-- select --

Range distance (meters)

50000

If you are unsure, leave the default value.

Cell size (meters)

10000

Cancel

Continue

**Submit job:** At this point the process can be left to run in the background even if leaving the page. The length of time depends on the FME server. The clock icon below means the job is queued.

## Jobs submitted

The following jobs have been submitted to FME server. The icon on the left indicates the current job status.

Jobs will keep running if you leave this page.

Depending on server load, it may take some time for FME to start processing them. You can click the "Refresh" button at the bottom of the list to get an updated view. You can also [return to the home page](#) at any time and see the progress there.

Depending on job status, a number of actions are available for each job, including **download of the results file**.



XX\_Art17\_habitats\_distribution.shp

2018-06-06 11:57

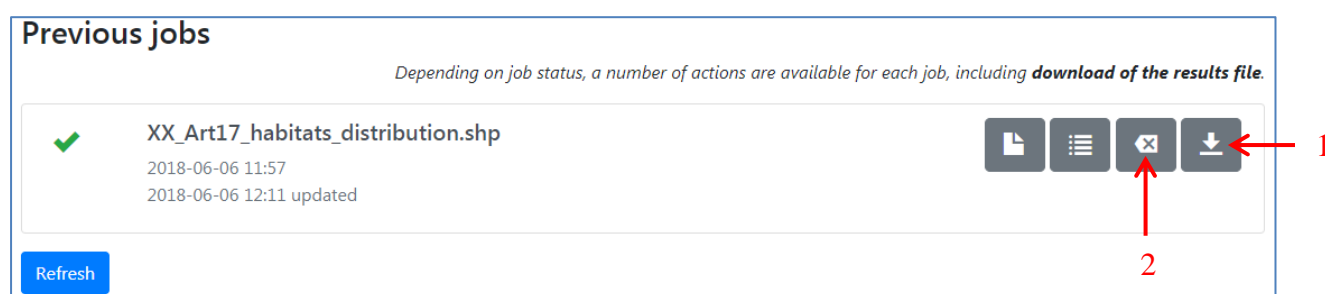
2018-06-06 11:58 updated



Refresh

**Download file:** It may be necessary to click 'Refresh' to see if the process has been completed. The download (1 below) will be as a zipped file containing a range shape file and two text files with the range area per habitat per biogeographic/marine region in km<sup>2</sup> (example below). The text file 'full' contains the range area based on all grids where the feature is present and filtered contains the range area minus those grids recommended for deletion.

Files can also be deleted from the tool (2 below).



### 3.3 Result

The output of the tool is a zipped file with 1 shape file and 2 text files.

The **output shape file** (figure 3.1) will contain many more records as it contains both extra grids where the range has been calculated and it treats each habitat/species code individually per cell where they are reported. It is a record of presence (100) or non-presence (0) of a habitat/species on a grid by grid basis and also the grids recommended for deletion (REGION\_CHK, CNTRY\_CHK) based on the criteria listed in '3.4 Rules applied to calculating the range' below.

**Figure 3-1 The resulting attribute table of the output shape file**

FID	Shape	Code	ALP	ATL	BLS	BOR	CON	MAC	MED	PAN	STE	MATL	MBAL	MBLS	MMAC	MMED	REGION_CHK	CNTRY_CHK
270	Polygon	91E0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	keep	keep
271	Polygon	91E0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	keep	keep
272	Polygon	91E0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	keep	keep
273	Polygon	91E0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	keep	keep
274	Polygon	91E0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	keep	keep
275	Polygon	91E0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	remove	keep
276	Polygon	91E0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	keep	keep
277	Polygon	91E0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	keep	keep

The **text files** that accompany the shape file output contain the range area of species/habitat type per biogeographic/marine region. The .csv labelled 'full' will contain the range area as calculated. The .csv labelled 'filtered' will contain the range area MINUS the area of the grids that have been recommended for deletion in the output shape file. This can be based on grids recommended for deletion for not meeting the biogeographic/marine region criteria (REGION\_CHK), the country check criteria (CNTRY\_CHK) or a combination of the two (extended list in section 3.4). Both files will contain the same number of records, the only difference will be the areas calculated by the tool.

It is from the text files that **the range area value is extracted for entry to the reporting tool**; field 5.1 in the species report and field 4.1 in the habitats report.

Please refer to the 'Delivery manual for tabular and spatial data' on the reference portal for further specifications on spatial data delivery.

[If using the 1x1 km range tool, “no\_info” may be displayed in the REGION\_CHK and the CNTRY\_CHK columns. These are cells where the tool is unable to assign suitability for inclusion in the range calculation, mainly due to complex coastlines or borders. The user should pay close attention to these grids and either keep or remove from their final range calculation].

**Figure 3-2 The resulting text file containing the calculated range for each species or habitat type.**

Code	ALP	ATL	BLS	BOR	CON	MAC	MED	PAN	STE	MATL	MBAL	MBLS	MMAC	MMED
7230	0	47900	0	0	0	0	0	0	0	9400	0	0	0	0
8110	0	19100	0	0	0	0	0	0	0	9400	0	0	0	0
3140	0	32500	0	0	0	0	0	0	0	7100	0	0	0	0
6410	0	35100	0	0	0	0	0	0	0	8600	0	0	0	0

Where a habitat/species code is not recognized in the country or region within the country, this will be denoted by ‘-’ in the ‘full’ .csv file, and will not be present in the ‘filtered’ .csv file.

REGION_CHK	CNTRY_CHK
-	keep
-	keep
-	keep

### 3.4 Rules applied to calculating the range

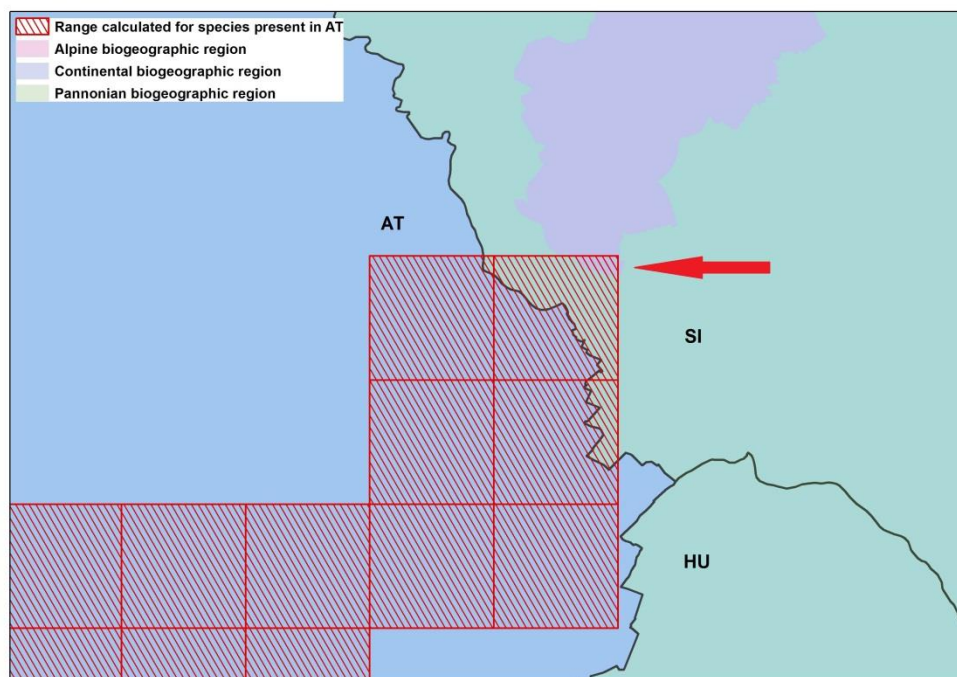
The tool identifies the following unsuitable areas that should be excluded from the calculated range:

- marine areas automatically included in the range of terrestrial species;
- terrestrial areas automatically included in the range of marine species;
- areas beyond national boundaries

These grids are denoted in the attribute table columns ‘CNTRY\_CHK’ and ‘REGION\_CHK’. As the tool processes the data, it checks whether the feature has been reported in a biogeographic/marine region by the Member State (REGION\_CHK) and whether the resulting range grids fall outside the Member State or not (CNTRY\_CHK).

Where a grid crosses a country boundary and multiple biogeographic regions, the regions identified within the cell will all be counted towards the range calculation even if the biogeographic region overlapping the cell occurs in the neighbouring country. The tool is not able to identify this as a potential grid for deletion from the range. This is illustrated below in figure 3.3:

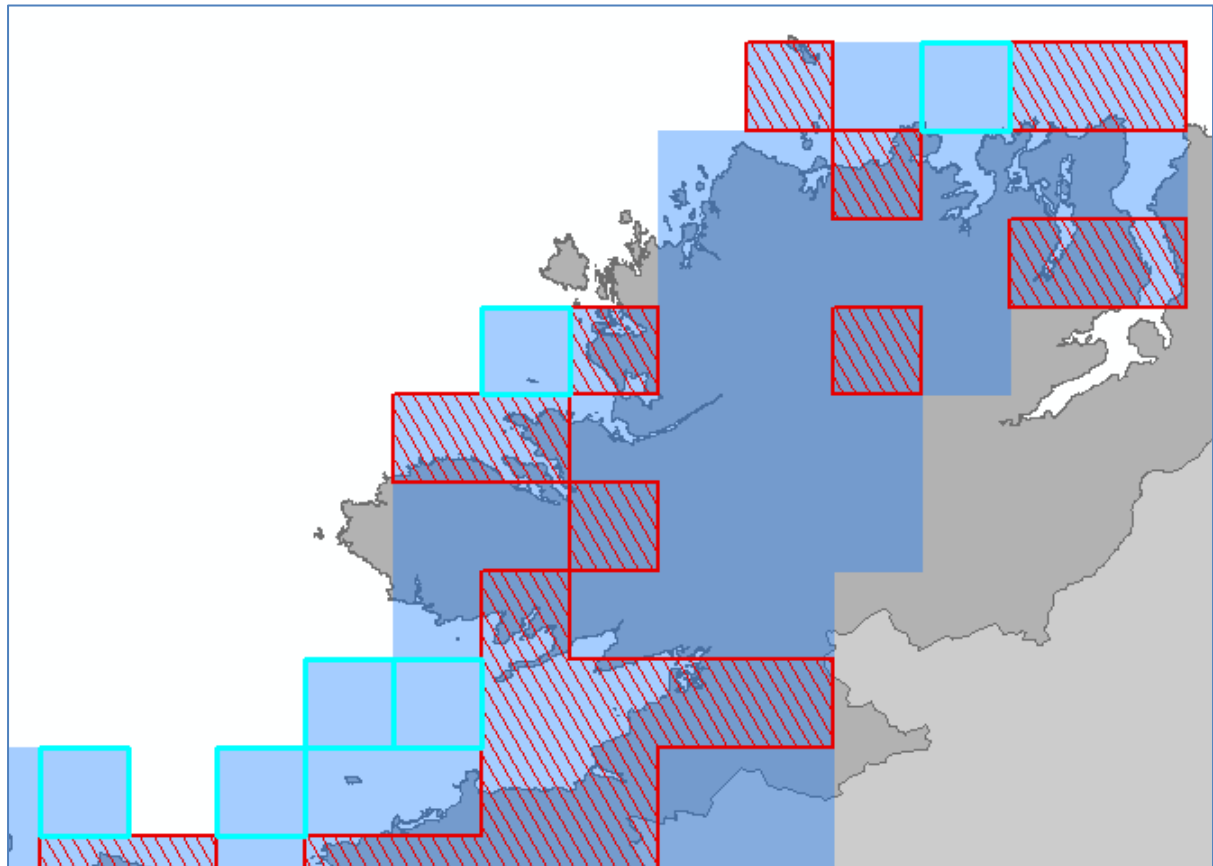
**Figure 3-3 Range calculated for a terrestrial habitat across Member State boundaries.**



e.g. a range is calculated for a species present in AT. A grid cell that falls across the AT and SK country border contains CON biogeographic region in the AT part of the grid and both PAN and ALP in the SK part. The grid will automatically be counted as an ALP grid for the feature in AT even though it is in another Member State. As PAN biogeographic region is not present in AT, this will not pose an issue. These situations need to be checked by the Member State and should be deleted from the final range calculation (i.e. check these cells in the shape file and filter these cells out of the csv labelled 'filtered' before extracting the range).

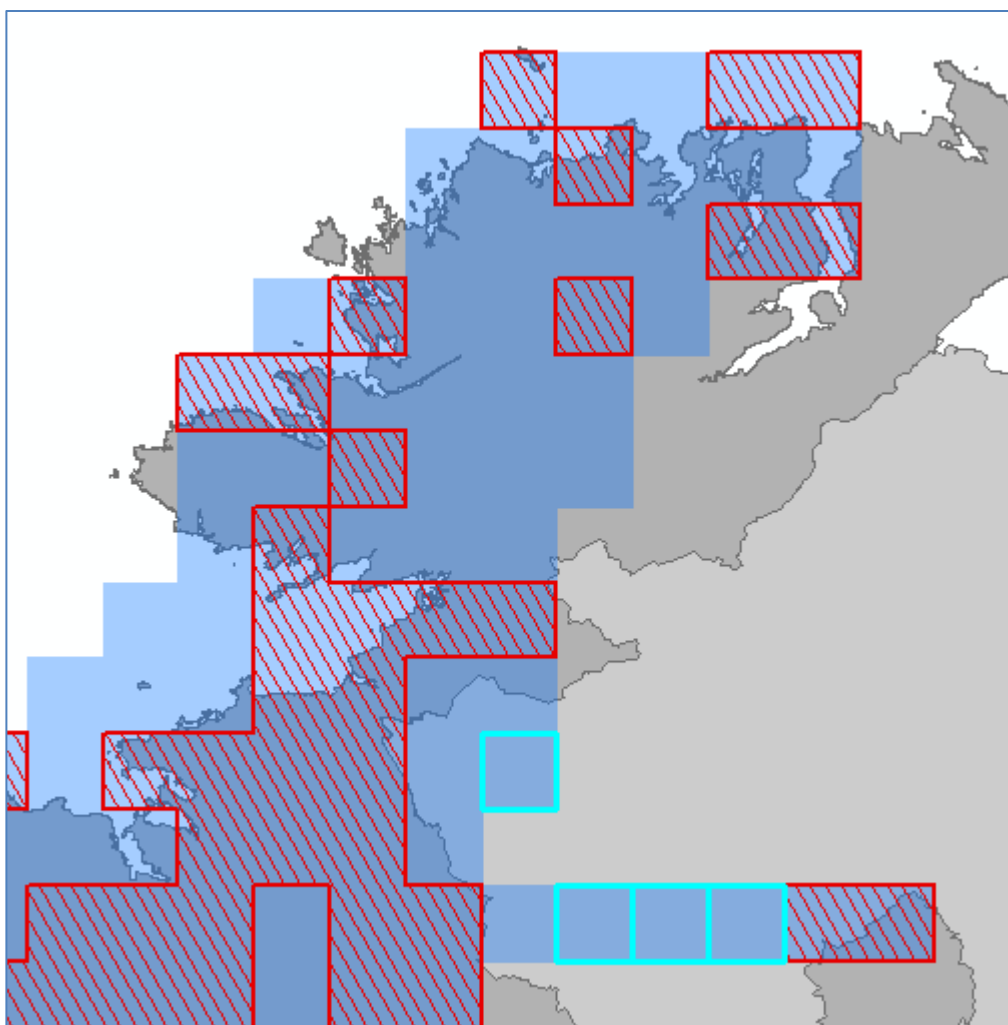
Below is an example of range grids recommended for deletion based on the habitat being terrestrial and not marine.

**Figure 3-4 Range calculated for a terrestrial habitat with the grids recommended for deletion highlighted.**



The habitat distribution reported by the Member State is denoted by red squares, the calculated range is denoted by the transparent blue grid and those grids recommended for deletion are highlighted by bright blue (figure 3.4). These grids were highlighted by the range tool as not being appropriate for inclusion in the range calculation as they are either coastal or exclusively marine whereas the habitat is terrestrial (REGION\_CHK).

**Figure 3-5 Range grids recommended for deletion based on being located outside the Member State**

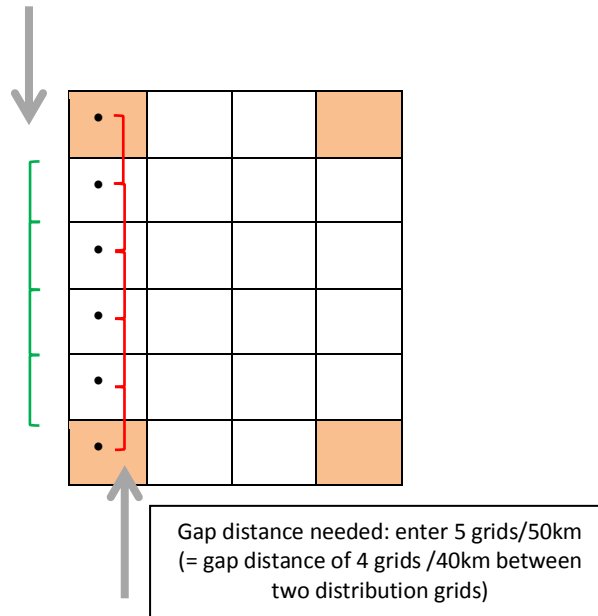


For the same habitat in the same Member State, figure 3.5 shows those grids recommended for deletion from the range calculation based on them being located in another Member State. The reason they were included in the original range calculation is because a gap distance of 50 km was used (as recommended for habitats) and as the gap between the adjacent cells where the habitat was reported (red cells) is under 50 km, these cells in between were included.

**Important note:** The gap distance is calculated from the center point of one grid cell to the center point of the next grid cell unlike the previous tool which calculated the gap distance from the cell edge.

This means that the gap distance entered should be increased by one grid cell (i.e. if 10x10 km grid is used, the gap distance entered needs to be increased by 10000 so a gap of 4 should be entered as 50000 etc, figure 3.5).

**Figure 3-6 Entering gap distance to the EEA range tool**



The tool does not automatically remove any cells, it only marks which cells are recommended for removal by the user based on the criteria above. Any other modifications of the file will require the user to recalculate the Range values (km<sup>2</sup>).

### 3.5 Changes from the previous reporting tool

The range tool used in the previous reporting round can still be used if desired. However there will be no support available in the event of problems.

Although based in the same algorithm and therefore giving the same result, some differences between the previous and the current tool are shown below (table 3.1).

**Table 3-1 differences between the previous and current version of the range tool.**

	Previous (2007 – 2012)	Current (2013 – 2018)
Interface	ArcGIS toolbox	Web tool
Files required to use tool	Separate distribution shape files (point, line, polygon, grids) in conjunction with an up to date checklist, a separate grid file (if not used above), biogeographical region shape file.	Gridded shape file of species/habitats distribution in a zipped file
Output files	Range & distribution shape file for upload to CDR	Range shape file not required for upload to CDR, 2 text files containing full and filtered range calculation.
Data format	Vector and gridded data	Gridded data only
Gap distance calculation	Calculated from cell edge to cell edge	Calculated from the centroid of each cell therefore necessary to increase the gap distance by 1 grid to account for this



QA/QC	Toolbox calculates in the projection data were entered as long all files are in the same projection. This was then manually converted to LAEA.	Tool will calculate in LAEA only. Data can be uploaded in any projection
Other	Natura 2000 shape file was optional	Natura 2000 shape file not an option for current tool

## 4 Links to sources

Article 17 reference portal: [http://cdr.eionet.europa.eu/help/habitats\\_art17/](http://cdr.eionet.europa.eu/help/habitats_art17/)

Article 12 reference portal: [http://cdr.eionet.europa.eu/help/birds\\_art12/](http://cdr.eionet.europa.eu/help/birds_art12/)

EEA Range tool: <http://discomap.eea.europa.eu/App/RangeTool/> (10x10) and <http://discomap.eea.europa.eu/App/RangeToolEurope> (1x1).

DG Environment. 2017. Reporting under Article 17 of the Habitats Directive: Explanatory notes and guidelines for the period 2013-2018. Brussels. Pp 188  
([http://cdr.eionet.europa.eu/help/habitats\\_art17/](http://cdr.eionet.europa.eu/help/habitats_art17/))

## Annex I Information used to generate the range area

The following information is used by the range tool to generate a range area. In the previous range tool version it was necessary for the Member States to also upload these files in addition to a distribution shape file in order to calculate a range:

Biogeographical regions layer:

<https://www.eea.europa.eu/data-and-maps/data/biogeographical-regions-europe-3>

MSFD Marine regions layer:

<https://www.eea.europa.eu/data-and-maps/data/msfd-regions-and-subregions-1>

European Boundary Layer:

[https://eurogeographics.org/wp-content/uploads/2018/05/EBM\\_v12\\_Specification.pdf](https://eurogeographics.org/wp-content/uploads/2018/05/EBM_v12_Specification.pdf)

Article 17 Checklist for Annex I habitat types and Annex II, IV and V and species

[http://cdr.eionet.europa.eu/help/habitats\\_art17/](http://cdr.eionet.europa.eu/help/habitats_art17/)