Protected Sites Screening Tool

User Guidence Document

The Crown Estate

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Contents

Acronym List

Acronym	Description
AA	Appropriate Assessment
BDMPS	Biologically Defined Minimum Population Scales
cSAC	Candidate Special Areas of Conservation
EMF	Electromagnetic Fields
FLOW	Floating Offshore Wind
HRA	Habitats Regulations Assessment
HPMA	Highly Protected Marine Areas
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effects
MCZ	Marine Conservations Zones
OFW	Offshore Wind Farm
PINS	Planning Inspectorate
SAC	Special Areas of Conservation
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Areas
TCE	The Crown Estate

Glossary

Term	Description
Appropriate Assessment (AA)	Stage 2 of the Habitats Regulations Assessment process, required where likely significant effects (LSE) cannot be ruled out at the screening stage.
Array	The area of an offshore wind development containing turbines and associated infrastructure.

Aggregates Extraction	The commercial removal of sand, gravel, and crushed rock from the seabed for use in construction, coastal defence, and land reclamation.
BDMPS	Biologically Defined Minimum Population Scales; codes used in bird assessments relating to population connectivity.
Co-located Hydrogen (Co_Located_H2)	Hydrogen production, storage, or associated infrastructure that is developed alongside offshore wind farms within the same array area. This typically involves using electricity generated by offshore wind turbines to produce hydrogen via electrolysis, enabling integrated offshore energy solutions.
Conservation Objectives	The goals set for a protected site, usually to maintain or restore habitats and species for which the site is designated.
Connectivity Screening	The process of checking whether a spatial overlap or pathway exists between a proposed activity and a protected site.
Designated Site Type	The legal category of a protected site used in screening (e.g., SAC, SPA, MCZ).
Electromagnetic Fields (EMF)	Electric and magnetic disturbances produced by subsea cables or equipment.
European Sites	Collective term for SACs, cSACs, SPAs, proposed SACs, potential SPAs, and Ramsar sites.
Export Cable	Subsea cables used to transmit electricity from offshore wind arrays to shore.
Feature Group	Categories of protected features such as Birds, Fish, Habitats, or Mammals.
Habitats Regulations	The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017.
Habitats Regulations Assessment (HRA)	A legally required process to determine whether a plan/project will affect European sites.
Migratory Waterbirds	Birds that migrate seasonally between breeding and wintering grounds, often across international boundaries.
Fixed OFW	Offshore wind farms where turbines are installed on fixed foundations (such as monopiles, jackets, or gravity bases) that are secured directly to the seabed.
Floating Offshore Wind Farm (FLOW)	Offshore wind farms where turbines are mounted on floating platforms that are anchored to the seabed using mooring lines or chains.

Protected Sites	Collective term for European sites, HPMAs, and MCZs.
Ramsar Site	A wetland site of international importance designated under the Ramsar Convention.

1. Introduction

The Habitats Regulations Assessment (HRA) Screening Tool has been developed for The Crown Estate (TCE) in relation to its role as a competent authority under the Conservation of Habitats and Species Regulations 2017 (as amended) and The Conservation of Offshore Marine Habitats and Species Regulations 2017 (for plans and projects beyond UK territorial waters – up to 12 nautical miles), (hereafter collectively referred to as the 'Habitats Regulations'), for activities such as offshore wind leasing rounds.

1.1 Designated Sites

The Habitats Regulations provide for the designation of sites that are important for protecting certain species and habitats. Known as European sites, these include:

- Special Areas of Conservation (SAC);
- Candidate Special Areas of Conservation (cSAC); and
- Special Protection Areas (SPA).

Unless otherwise stated below, the tool supports screening for additional categories of designated site which Government policy requires be treated as if they are designated European sites:

- proposed SACs;
- potential SPAs;
- Ramsar sites - wetlands of international importance (both listed and proposed); and
- areas identified or required to compensate for damage to a European site (**note that such areas are not currently included in the Screening Tool**).

The Protected Sites Screening tool takes into account all sites within the National Site Network (NSN) – as listed above. Note that this also includes transboundary (European) sites as a matter of best practice.

The tool also allows for screening for Marine Conservations Zones (MCZ). For the purposes of this guidance, European sites and other protected sites are collectively referred to as 'Protected Sites'.

1.2 Development of the Tool

The Protected Sites Screening Tool was developed to support efficient and consistent screening for plan level assessments and has been applied in the context of nationally significant marine planning exercises, including the Round 4 and Round 5 offshore wind leasing rounds. In these cases, the tool was used to support early-stage appraisal of potential development areas, helping to identify possible pathways for likely significant effects on protected sites with a view to reducing HRA-related risk for the final plan.

Screening results from the tool, when used in support of the above-mentioned plan level assessments, have been subject to consultation with Statutory Nature Conservation Bodies (SNCBs). This is not stated to imply specific endorsement of the tool by SNCBs, but as evidence that its use for HRA screening has been accepted. In such previous uses SNCBs have at times provided advice which results in adjustments to screening outcomes; this is an important part of the overall screening process.

The outputs informed consultation with SNCBs, ensuring that screening decisions were underpinned by transparent, spatially based evidence. This application demonstrates the tool's role in facilitating robust and consistent HRAs for major offshore development plans.

1.3 Purpose of the Tool

The tool currently supports screening in relation to three industry sectors: fixed offshore wind; floating offshore wind; and aggregate extraction. The screening methodology for aggregates is based on a plan-level HRA completed by ABPMer (ABPmer, 2022).

For offshore wind, the tool provides separate screening for 'Array' and 'Export Cable' areas. The 'Array' area can be defined to include co-located hydrogen ('H2') as an additional activity. These parameters need to be defined within the shapefile – see Section 0 for further details.

As set out in guidance published by The Planning Inspectorate (2025) the first stage of HRA is screening to check if a proposal is likely to have a significant effect on the conservation objectives of a European site, alone or in combination with other plans or projects. The tool approaches screening by investigating whether potential impact pathways exist between the location of plan/project areas and protected sites (European sites, and MCZs).

It is important to note that the Protected Sites Screening Tool is intended to support, but not replace, the formal screening process required under the Habitats Regulations. The outputs generated by the tool should be reviewed and interpreted by the user in the context of the specific project, relevant guidance, and advice from the SNCBs. The tool is intended to be a high level screening tool to determine LSE at the Plan level, helping inform spatial planning, and in no way is meant to replace project specific screening.

Consideration of areas identified or required to compensate for damage to a European site is also necessary since such areas are not currently included in screening by the tool. All screening conclusions remain the responsibility of the competent authority.

It is also important to note that the tool does not provide any information in relation to Stage 2 of the HRA process, Appropriate Assessment. The output of screening is a list of the protected sites, features and pressures for which likely significant effects (LSE) have not been excluded. For each protected site which is screened in, the relevant protected feature(s) and pressure(s) for which LSE could not be ruled out are listed. It should also be noted that Stage 2 may need to consider protected sites/features/pressures not identified by the Screening Tool; for example, if indicated in guidance provided by a Statutory Nature Conservation Body (SNCB), or in relation to compensation areas.

Please also note that the tool will only undertake basic connectivity screening for migratory and non-breeding birds. In previous application of the tool for plan level assessment an additional screening step has been undertaken for these groups. Further details are included in Section 77.

The methods and parameters which underpin the Screening Tool are set out in a Principles Report (NIRAS, 2025). This document sets out the spatial parameters that are used (through GIS analysis) to identify potential impact pathways and includes detail of key terms such as pressure, effect and impact.

The Protected Sites Screening Tool is based on publicly available data for protected site boundaries and designations. Data sources are listed in Table 8.1.

2 Quick Guide for Using the Tool

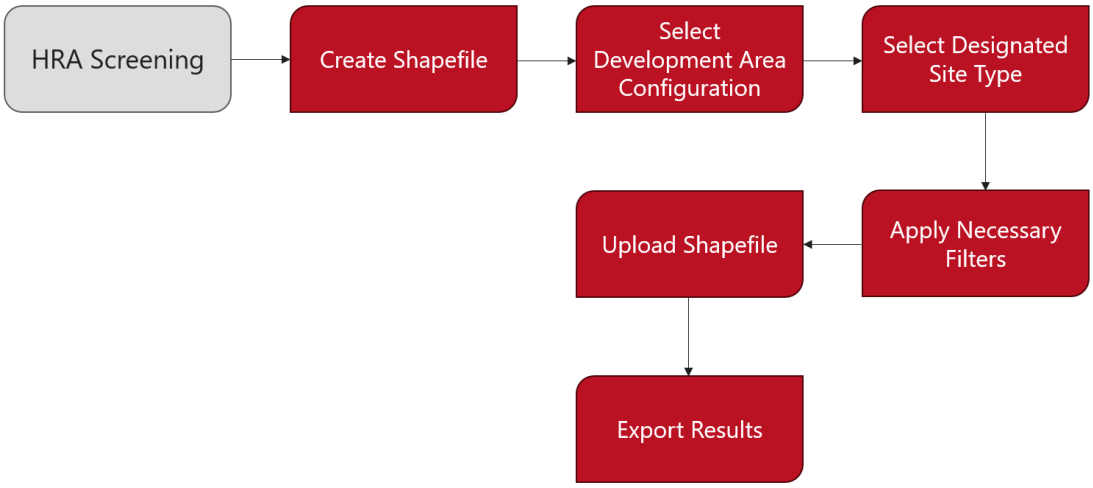


Figure 2.1 Workflow diagram, showing the process required to be taken to use the Protected Sites Screening Tool

The screening tool requires a Shapefile, representing the development area for which screening is required, to be uploaded.

The Protected Sites Screening Tool is a GIS based application; however, an ArcGIS or QGIS account (or similar) will only be required to prepare the shapefile for the use in the tool. The tool itself is standalone and can be run without any additional programmes or logins.

2.1 Create Shapefile

In order to use the Screening Tool it is necessary to load a .ZIP Shapefile representing the spatial extent of the development area. The specifications for the Shapefile are detailed in section 4. The shapefile can contain more than one polygon but the polygons must include an attribute field named 'Activity_T' with one of the following values: Cables, Array, Aggregates, or Co_Located_H2. Each represents the chosen activity for screening.

2.2 Select Development Area Configuration

In the data tab, the user can select the development area. This is done by choosing from fixed offshore wind farm, aggregates, or floating offshore wind.

The underlying screening parameters for each feature and pressure are detailed in the Principles Report (NIRAS 2025). But, if required, the user can tick the 'test new parameters' box to adjust the buffers the tool uses for each of the screening pressures.

The type of screening required is then selected: 'HRA' or 'MCZ' . Note that only one type of screening can be selected at a time.

2.3 Apply Filters

Before uploading the planning area zipped shapefile, the results can be refined by applying filters for country, feature group, and development area type. The filter tab allows further refinement by feature group, development area type, or pressure codes.

Once all applicable filters are selected, the shapefile can be uploaded.

2.4 Upload the Shapefile

This will run the tool, it may take a few minutes to process the results. Results are displayed in a table, and on the map - where screened-in sites are outlined in red. Designated sites screened in can be clicked on in order to display key information. The results list below will show the sites screened-in, features, and pressures showing a “1” where a feature or site is screened in for a pressure or a “0” where it is not screened-in.

The tool allows for the end user to upload their own development areas shapefile, which can then be used by the tool. This file is only temporarily accessed and is not saved within the tool or onto the underlying GIS web server.

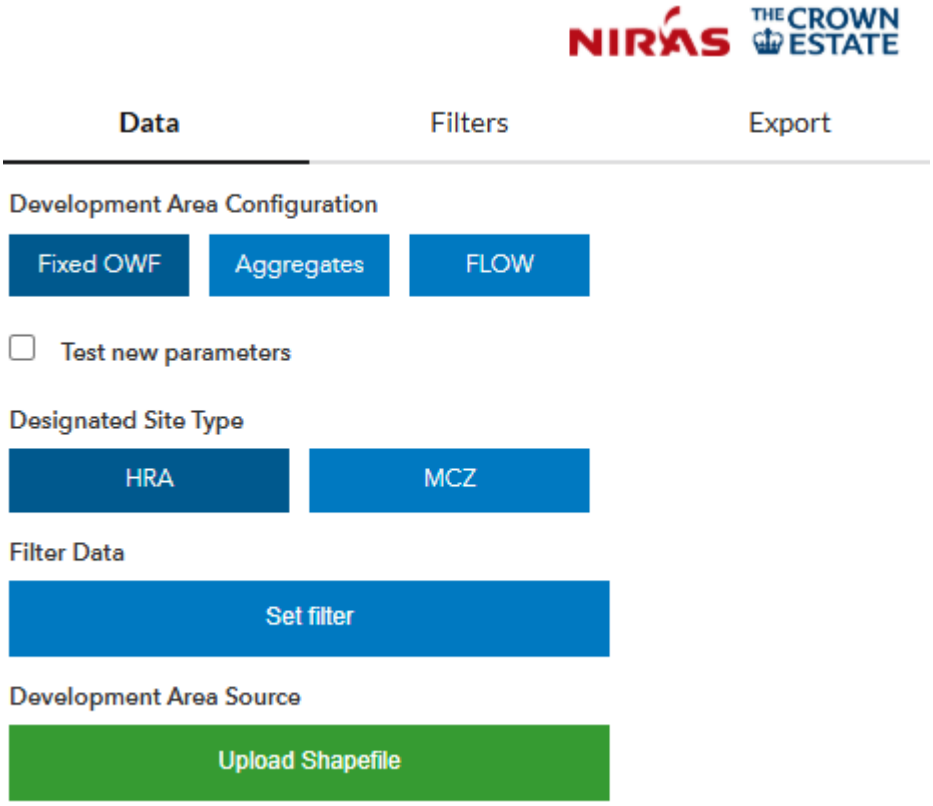
2.5 Export Results

Results can be exported in PDF, XLSX, or CSV format. The user must also choose to export all results, only screened-in or screened-out results.

3 Detailed breakdown of each tool section

The following sections, provide more details on each of the fields present in the Tool, on each tab.

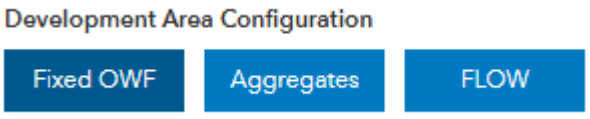
Data Tab



Development Area Configuration

This is where the activity for screening can be chosen. One of three activities can be screened for: Fixed Offshore Wind Farm, Aggregates, or Floating Offshore Wind.

When a development area configuration and a designated site type is selected the selected feature will be a darker blue. As shown below, the 'Fixed OWF' development area is selected.

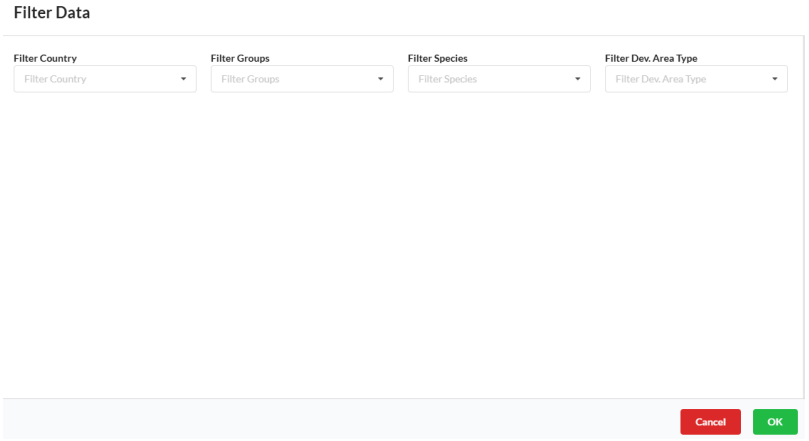


The test new parameters feature tick box allows the different pressure buffers to be edited and changed, this can be used in stances if a project has specific tracking data that needs to be used, or if a Statutory Nature Conservation Body (SNCB) has requested a unique set of pressure buffers.

Designated Site Type

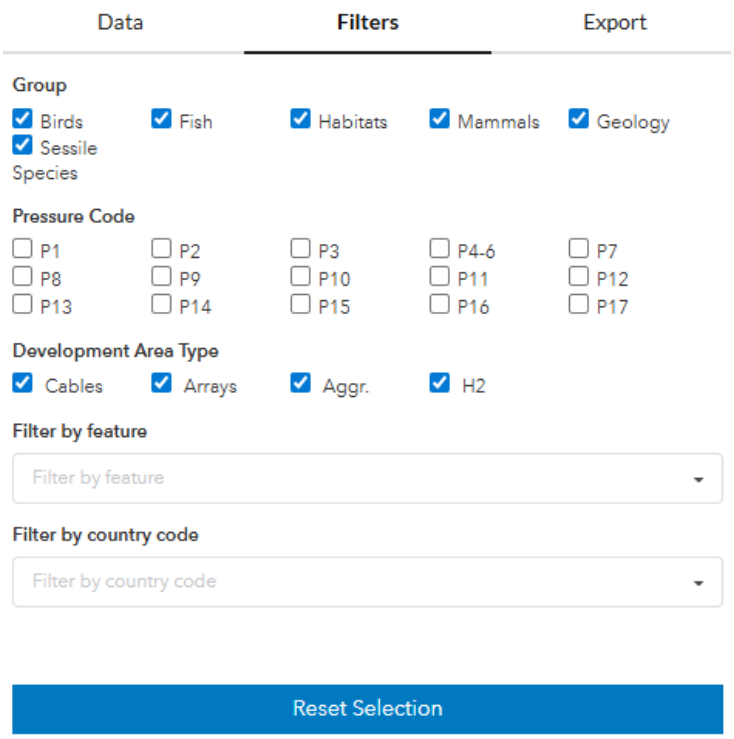
Under Designated Site Types, the protected site category relevant to your screening, HRA or MCZ, can be selected. Note, it is not possible to undertake screening for more than one designated site type simultaneously.

Set Filter



The set filter button in the Data tab can be used to refine results by Country, Feature Group (Birds, Fish, Habitats, Mammals), Species, and Development Area Type if required, this should be done before uploading the shapefile and running the tool.

Filters Tab



The Filters tab allows you to refine results by a few different factors:

- Feature group - i.e. Birds, Fish, Habitats, Marine Mammals,
- Screening pressure codes - see Table 3.1 for a list of pressures used by the tool for screening and the principles report (NIRAS, 2025) for further details,
- and/or Development Area Type - Cables, Arrays, Aggregates, and H2.

Table 3.1 Details of each of the pressures with their corresponding codes, utilised for the screening process. Further details on each pressure and the methodology can be found in the Principles Report – NIRAS (2025).

Code	Name	Description
P1	Habitat Loss/Gain	Permanent or temporary change to habitat availability or quality.
P2	Direct Physical Damage	Immediate damage to habitats or species caused by activities or equipment.
P3	Indirect Physical Damage	Secondary effects such as sediment changes or erosion.
P4–P6	Collision	Risk of animals colliding with infrastructure (e.g., turbines, vessels).
P7	Physical Presence	Disturbance caused by human presence or structures.
P8	Underwater Noise	Sound impacts from construction, operation, or vessel activity.
P9	Above Water Noise	Airborne noise affecting wildlife above the water's surface.
P10	Toxic Contaminants	Introduction of harmful substances into the environment.
P11	Electromagnetic Fields (EMF)	Electrical or magnetic disturbances from cables and equipment.
P12	Light	Artificial lighting effects on wildlife behaviour and habitats.
P13	Temperature	Alteration of water or air temperature in the environment.
P14	Suspended Sediments	Particles stirred into the water column affecting visibility and habitat quality.
P15	Invasive Species	Introduction or spread of non-native species.
P16	Entanglement	Risk of animals becoming caught in ropes, nets, or debris.
P17	Salinity	Changes in the salt content of the water.

Upload Shapefile and Run the Screening Tool

Upload Shapefile by selecting the zipped file containing your site boundary. After completing all selections and uploads, run the screening tool to process your results.

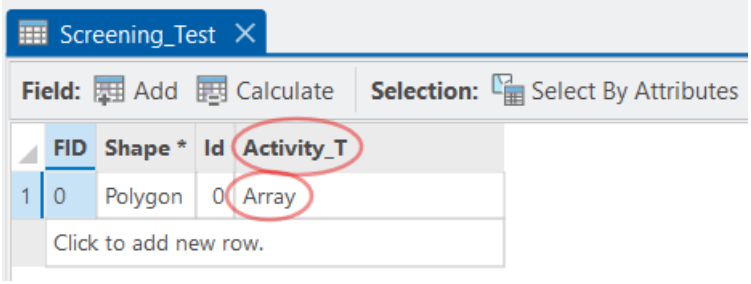
4 Creating and Uploading the Shapefile

To create the site boundary shapefile, ArcGIS Pro desktop or a similar software, (including open-source applications like QGIS) needs to be utilised. The shapefile must consists of a polygon feature with valid geometry, meaning the polygon should be shaped correctly, with no overlaps or gaps.

To be able to add in the correct attribute information to the planning area shapefile. Within your GIS application, right-click the shapefile and navigate to 'Attribute Table', this will pop up a table with the shapefile attribute information.

Click 'Field: Add' to create a field called 'Activity_T', this is where we can enter a value of either 'Cable', 'Array', 'Aggregates', or 'Co_Located_H2'. See screenshot below for details.

Make sure the field is typed exactly as shown, with the same spelling, capitalisation, and symbols.

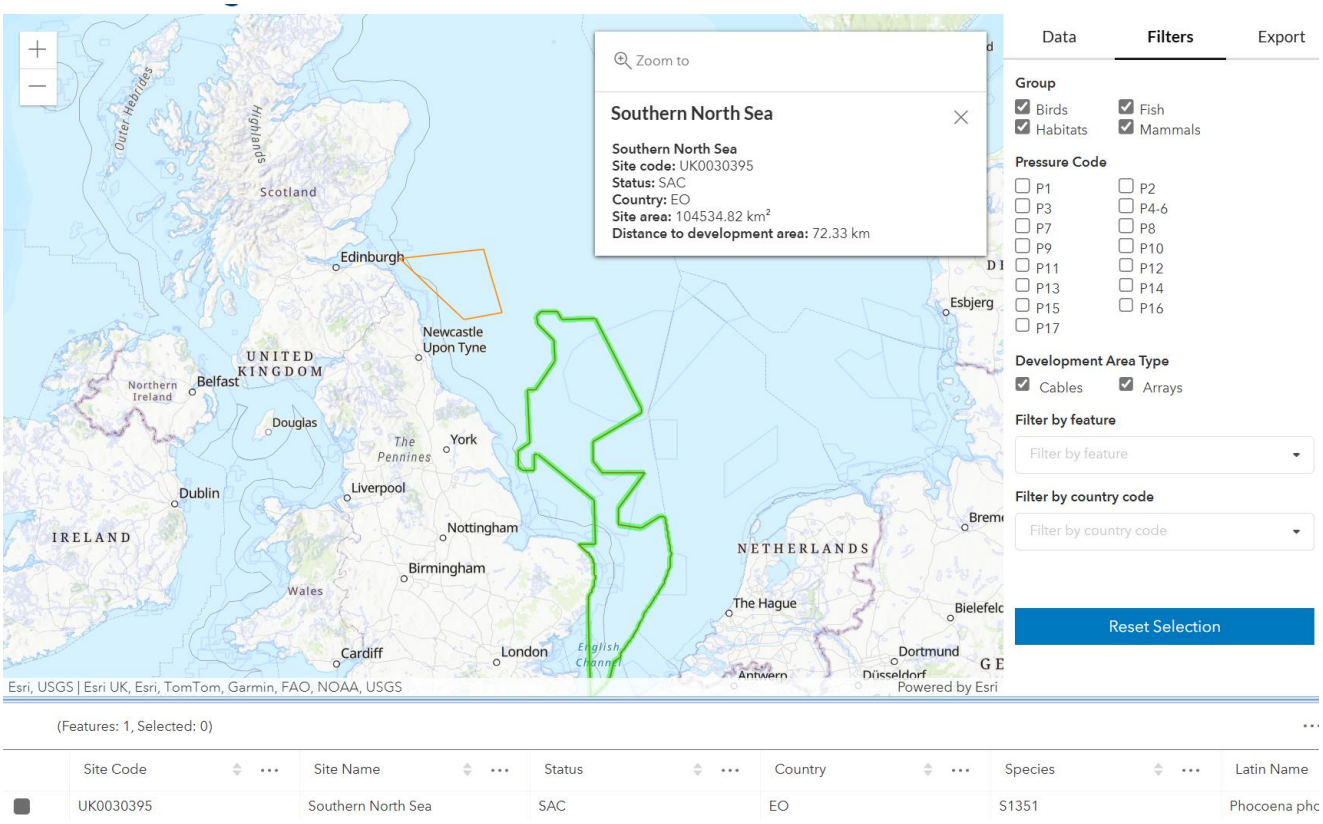


Export the shapefile from the software and zip the file. A zipped file should consists of the .shp, .shx, and .dbf files with the same name as the core requirements, a .prj file is also recommended. Select all the files and right click to zip the files together.

In the Protected Sites Screening Tool, to upload a shapefile, click the 'Upload Shapefile' button, then select the zipped file containing the site boundary required for the screening process.

5 Results

After the tool has been run, all Protected Sites that are screened in will be indicated in a map window with a red outline. On the map, by clicking on the displayed designated site, key information for that site will be displayed. All this information is also available as a results table as detailed below.



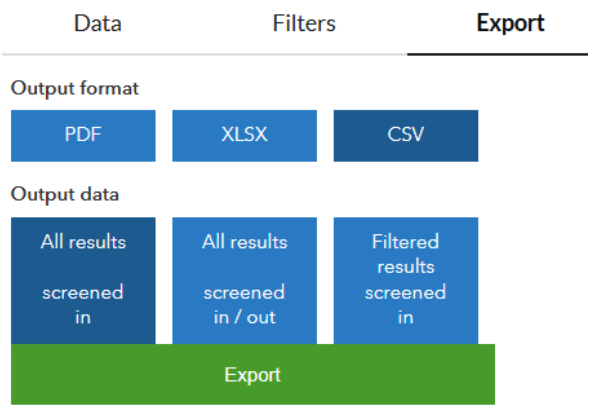
The results table is available at the bottom of the screen. This displays the sites, features, and pressures screened in. The results table will show a '1' or a '0' against each pressure. A '1' indicates the feature/site is screened in for that pressure, a '0' means it is not screened in for that pressure.

The results table also shows: designated site codes, names, status, country of designation, and distance to the closest point on the uploaded shapefile. Species details, including common name, Latin name, group, and season,

are also displayed, along with the associated development area type and pressure scores linked to the site boundary shapefiles.

NB. The country codes are equivalent to those listed in the JNCC data sets used by the tool (see Section 8 for details); “Country codes - (E, S, W, NI and OF for offshore). Cross border sites take the first letter of each country code e.g. EW for England Wales, SO for Scotland/Offshore.” Within the country codes filter, it is also possible to filter on country name, e.g. England.

6 Export Tab



The export tab allows the results to be exported as a PDF, XLSX, or CSV file. Additionally, the export function allows filtering of the results, for example, you can export all results that are screened in, all results screened out, and only the filtered results screened in (based on the filter set up on the previous tab).An output format type and a data filter will need to be chosen in order to export, please see the above image.

7 Migratory Birds and Breeding Birds in the Non-Breeding Season

The Protected Sites Screening tool defines five categories of birds for the purposes of screening:

- Breeding birds in the breeding season;
- Breeding birds in the non-breeding season;
- Wintering seabirds;
- Migratory waterbirds; and
- Migratory seabirds.

For breeding birds in the breeding season and wintering seabirds it is assumed that connectivity, established through application of the spatial criteria set out in the Principles Report (NIRAS, 2025), will lead to the features being screened in.

For breeding birds in the non-breeding season, and migratory waterbirds and seabirds, a second screening stage will be required to quantify the likely magnitude of any impact, before forming a judgement about LSE to determine which sites and features should be taken through to Stage 2 assessment. The features for which this additional

screening is required are identified by the tool using the codes; 'MC*', and 'BDMPS*' in the results table (Appendix B of the Principles report (NIRAS, 2025)).

A worked example of the calculations that need to be undertaken in this second stage of the screening is detailed in NIRAS (2020). The results shown in this document are illustrative and do not reflect any actual projects.

8 Data Sources

Data sources are detailed in Table 8.1. Source information is reviewed annually and updated, if required, in April. Ad hoc updates may be made if there are critical changes to source data. All updates are recorded in this table.

Table 8.1 Table of data sources for the MPA Shapefiles and Reasons for designation database.

Data set	Summary	Sub category	Date created	Raw source file name	Source data owner	Source	Date downloaded
Reasons for designation (Excel)	This is a subset of the Natura 2000 data. The UK records are more up to date as the UK data from JNCC has been combined with the selected non-uk designated features datasets	UK Natura 2000 data	10/04/2025	uk-national-site-network-2022-09-30	JNCC	https://hub.jncc.gov.uk/assets/a3d9da1e-dedc-4539-a574-84287636c898	13/05/2025
			01/01/2025	UK_RAMSAR_DATA_20151021	JNCC	https://jncc.gov.uk/our-work/convention-on-wetlands/#ramsar-site-network-summary	13/05/2025
		Assemblages data	01/10/2018	Assemblages data 2021	NE, NRW, DAERA citations referred to	https://www.gov.wales/sites/default/files/publications/2018-10/marine-protected-areas-network-management-framework-for-wales-2018-2023.pdf	13/05/2025
		Non-UK Natura 2000	21/02/2025	eea_t_natura2000_p_2023_v01_r00	EEA	https://www.eea.europa.eu/en/datahub/datahubitem-view/6fc8ad2d-195d-40f4-bdec-576e7d1268e4	13/05/2025
Reasons for designation_MCZ (Excel)	The designated features of all	MCZ		UKMCZs_20190808	JNCC	Data issued directly by JNCC	22/06/2019

	UK MCZ, as sent from JNCC					No known updates to this data. Request for information submitted to JNCC.	
Designated sites (shapefile)	This shapefile contains UK SAC, SPA and Ramsar features together with those non-UK Natura 2000 sites which contain the features provided in the non-UK features export	SAC	25/08/2023	Special_Protection_Areas_-5092496178861297768	NatureScot	https://opendata.nature.scot/datasets/special-protection-areas/explore?location=53.379160%2C-6.472151%2C4.48	13/05/2025
			28/11/2022	NRW_SPA	NRW	https://datamap.gov.wales/layers/inspire-nrw:NRW_SPA#download-metadata-section	13/05/2025
			12/09/2024	GB-SPA-OSGB36-20240509	JNCC	https://hub.jncc.gov.uk/assets/20dbc9b4-ceac-4bf2-8763-4ae387fa88c4	13/05/2025
		SPA	15/03/2022	c20220316-UKSPAswith-MarineComponents-WGS84	JNCC	https://hub.jncc.gov.uk/assets/07078ed3-496d-432b-974e-1754b47536c7	13/05/2025
		All Designations	17/07/2021		DAERA	https://opendata-daerani.hub.arcgis.com/datasets/northern-ireland-marine-protected-areas-mpas/explore?location=54.552301%2C-6.064569%2C8.41	13/05/2025
		Ramsar	08/03/2021	uk-ramsar-bng-20210308	JNCC	https://hub.jncc.gov.uk/assets/f0e372e3-1580-4bf4-b31a-2b18ab9ca51d	13/05/2025
		Non-UK Natura 2000	13/05/2024	Great_Britain_shapefile	EEA	https://www.eea.europa.eu/data-and-maps/data/eea-reference-grids-2/gis-files/folder_listing	13/05/2025
MCZ (shapefile)	all UK MCZs	MCZ	03/06/2024	Marine_Conservation_Zones_England	Natural England	https://www.data.gov.uk/dataset/80c075c3-1880-44a0-bffc-69e20f307c21/marine-conservation-zones-england2	13/05/2025

			17/07/2021	All_MPAs_NI_Marine_Plan_Extent_5815688795875618474	DAERA NI	https://opendata-daerani.hub.arcgis.com/datasets/northern-ireland-marine-protected-areas-mpas/explore?location=54.552301%2C-6.064569%2C8.41	13/05/2025
			28/11/2022	NRW_MNR	NRW	https://datamap.gov.wales/layers/inspire-nrw:NRW_MNR	13/05/2025

9 References

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JNCC & NE (2022). *Annex H: Ecological narratives: Supplementary documentation on the ecological merit of the candidate Highly Protected Marine Areas in English waters*. June. Available at: https://consult.defra.gov.uk/hpma/consultation-on-highly-protected-marine-areas/supporting_documents/HPMA%20consultation%20Annex%20H%20Ecological%20narratives%20.pdf [Accessed December 2025].

NIRAS (2020a). Offshore Wind Leasing Round 4 Plan Level HRA. Principles Report.

NIRAS (2020b). Offshore Wind Leasing Round 4, Birds – Stage 2 Screening Worked Examples.

NIRAS (2022). The Celtic Sea Floating Wind MCZ Principles & Screening report

NIRAS (2025). Protected Sites Screening Tool Principles Report. Available at: Marine Data Exchange

The Planning Inspectorate (2025). Guidance. Nationally Significant Infrastructure Projects: Advice on Habitats Regulations Assessments. Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-habitats-regulations-assessments [Accessed December 2025]

10 FAQ

Q: Why won't my Shapefile load?

A: There several potential causes to check before submitting a bug report. The shapefile must be zipped and include the following file types: .shp, .shx, .dbf, and .prj. The Shapefile must also have a column within the attribute field called 'Activity_T' with 'Cables', 'Array', 'Aggregates', or 'Co Located H2' specified as a value, spelled correctly and with no hidden spaces.

Q: How do I submit a bug report?

A: Please submit a detailed email with the issue and what has been done to try and fix the issue. If possible, please also attach the Shapefile for investigation if applicable. Send the email to this address: info-uk@niras.com.

Q: How do I know the data is up to date?

A: Please refer to the data Source table present as Table 8.1. Data sources are reviewed annually and updated by April each year. Ad hoc updates may also occur where there are important changes to source data.

Q: Can I run the tool with multiple designated sites types at the same time?

A: Each designated site type; HRA, MCZ, and HPMAs, must be run independently. Screening must be carried out separately for each designated site category.

Q: Can I Upload a Shapefile with Multiple Polygons/Planning Areas?

A: Yes, but the Shapefile that is uploaded must have the multiple polygons 'merged' and they must have the same Activity_T value.