NPWS An tSeirbhís Páirceanna Náisiúnta agus Fiadhúlra National Parks and Wildlife Service

Appropriate Assessment

Updates and Learnings from Current Practice

Paul Scott – Ecological Guidance and Advisory Unit

8 March 2024

Objectives

- Where we “are” with Appropriate Assessment (AA) and a reminder of key principles.
- What are the current hot topics in AA.
- Golden rules for AA.
- What lies ahead for AA.

Please notify any errors or omissions and comments by email to EGAU@npws.gov.ie

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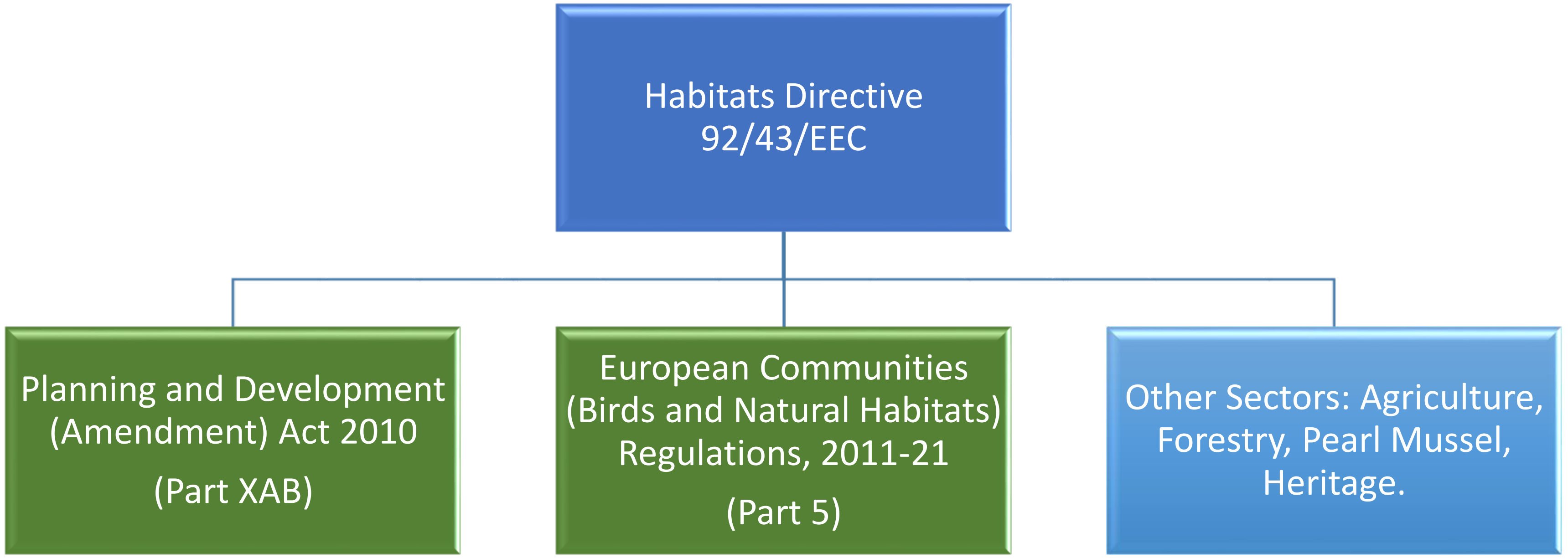
Where are we with AA?
And
Key Principles

Reminder: What is AA?

- A <u>focused</u> type of ecological assessment that investigates the impacts of a proposal on Natura 2000 site(s).
- <u>Its purpose is to protect Natura 2000 sites.</u>
- It applies to plans and projects (broadly defined).
- It is not EIA or SEA but parts of the process appear similar.

AA-Legislation



Transposed
into
Irish Legislation

Requirements for AA

6(3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Article 6(3) EU Habitats Directive 92/43/EEC

Any plan or project likely to have a significant effect on a **European site** shall be subject to AA

Photo: Sean O'Gaoithin

Special Areas of Conservation(SACs)

Special Protection Areas (SPAs)

Protection of certain natural habitats and species


Photo Maurice Eakin

Qualifying Interests (QIs)- Habitats

- Peatlands and Heathlands
- Coastal and Freshwater Habitats
- Woodlands, Grasslands and Rocky Habitats


Photo Pat Moran

Qualifying Interests (QIs) - Species

- Plants, e.g. Killarney Fern
- Animals, e.g. Otter


Photo Niall Harmey

Special Conservation Interests (SCIs) -

- Birds e.g. Pale Bellied Brent Geese
- Wetlands e.g. resource for migratory birds

Procedural Steps

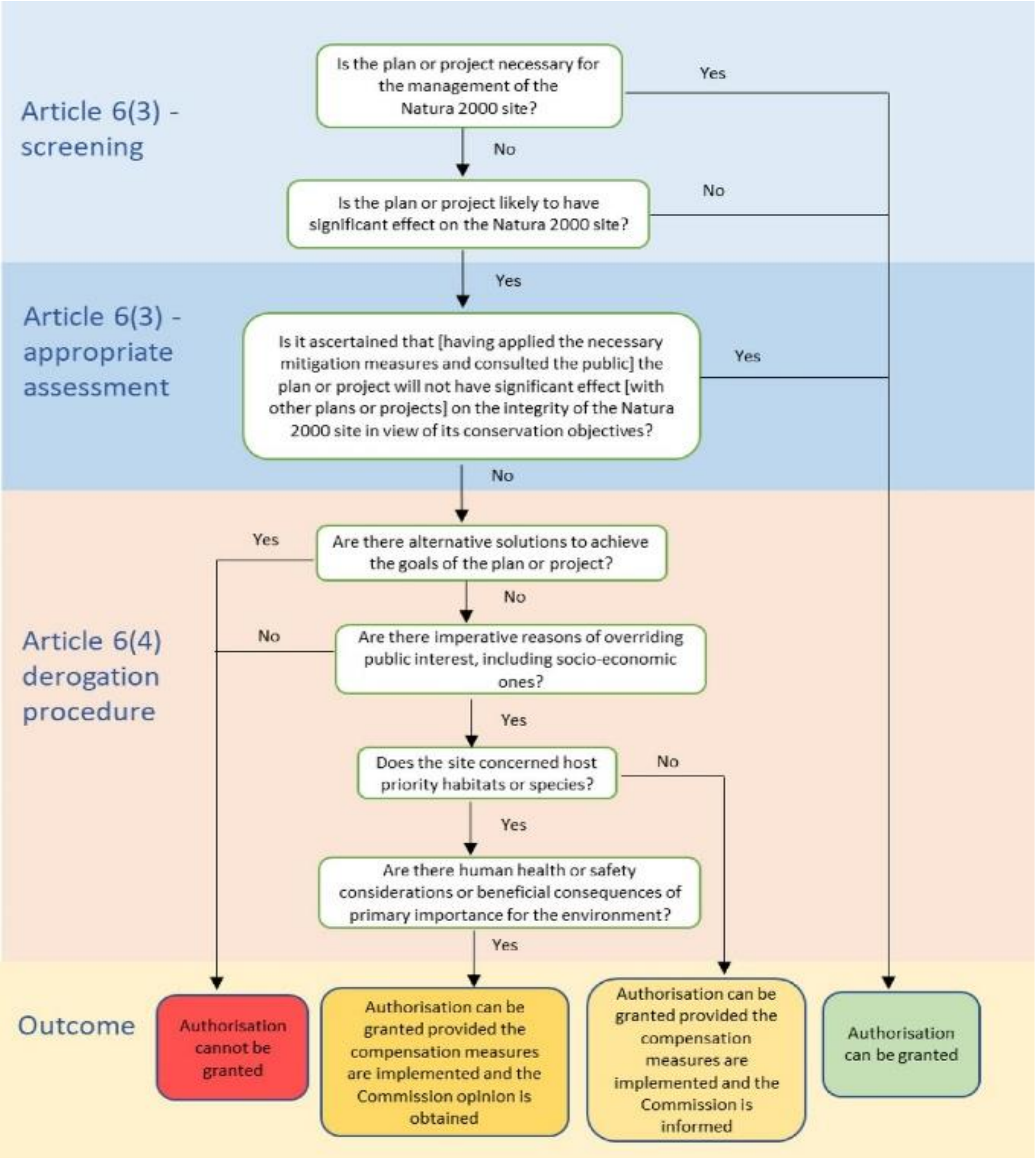
1. Screening – determines if the proposal is necessary for the management of the site and, if not, identifies likely significant effects on affected Natura 2000 site to determine whether a full Appropriate Assessment is needed.

2. Appropriate Assessment - assessment of impact on the integrity of the site and suggests potential mitigation.

3. Assessment of alternative solutions - alternative ways to proceed with proposal that would avoid adverse impacts on integrity of Natura 2000 site.

4. Assessment where no alternative solutions exist and where adverse effects remain - assessment of compensatory measures where, in light of assessment of imperative reasons of overriding public interest, the project is allowed to proceed.

Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2021)



What is subject to AA screening in Local Authorities?

Land Use Plans and Projects

For example:

- County/City Development Plans,
- Sectoral Plans e.g. Tourism, Renewable Energy Strategies.
- Planning Applications.
- Consents, licences, permits.

AA and Local Authority own development

General rules of thumb for plans/projects regulated under the Planning and Development Regulations 2001-2023 or Birds and Habitats Regulations 2011-2021:

- Plans/projects either regulated under Planning Regulations or (rarely) 2011 Birds and Habitats Regulations.

- Local Authority (LA) must carry out AA screening for any plans or projects which are statutory functions of the LA.

- Where AA is required for a project, An Bord Pleanála is the competent authority for AA.

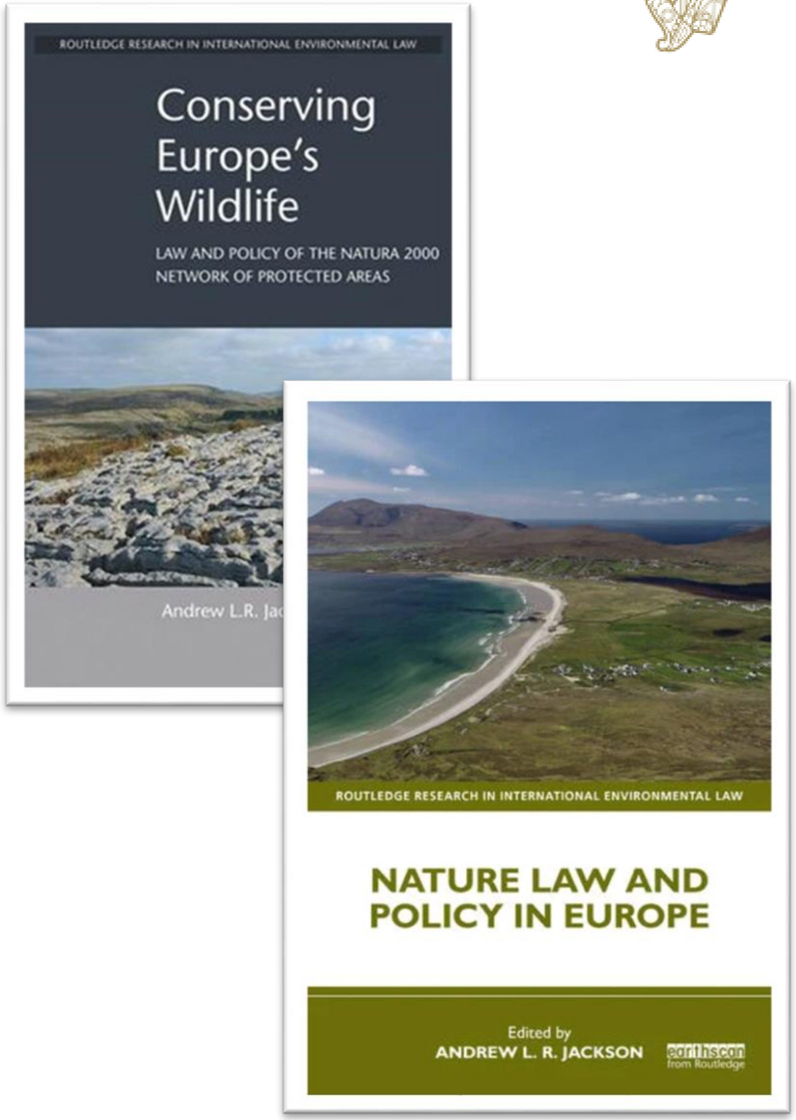
AA and Local Authority own development (continued)

Example: Activities Requiring Consent (ARC)

- E.g. Site investigations on area of spoil.
- Activity listed in S.I. for the SAC– “Schedule 4 Site Specific Operation No. 2” (ARC 3 - “Blasting, drilling, dredging or otherwise removing or disturbing fossils, rock, minerals, mud, sand, gravel or other sediment”).
- Local Authority must take account of the list of ARCs
- Does not need consent from Minister as it is carried out by Local Authority, which must screen it for AA.

AA in 2024

- AA “officially” in 30th year of application.
- EIA →Article 6→ AA in the period 2002-2006.
- “AA”, “NIS”, “NIR” formally established terms and processes by 2010.
- Requirements now apply across wide range of sectors and levels of governance.
- Lack of detail in Directive and legislation led to varying interpretations.



AA in 2024 (continued)

- AA is only implementing "part" of Article 6 (the protectionist part).

- Article 6(1) and (2):
  - Establishing conservation measures etc.
  - Avoiding deterioration and disturbance.

- Need to balance protectionist efforts with proactive conservation.

Current hot topics in AA

1. No shortage of case law

Recent judgments of the Court of Justice of European Union:

Judgment - 07/12/2023 - Latvijas valsts meži Case C-434/22
Judgment - 15/06/2023 - Eco Advocacy Case C-721/21
Judgment - 02/03/2023 - Commission v Poland (and bonne pratique forestières) Case C-432/21
Judgment - 10/11/2022 – AquaPri Case C-278/21
Judgment 22/06/2022 Commission v Slovak Republic Case C-661/20
Judgment 24/06/21 European Commission v Kingdom of Spain Case C-559/19
Judgment 16/07/2020 WWF Italia Onlus and Others v Presidenza del Consiglio dei Ministri and Azienda Nazionale Autonoma Strade SpA (ANAS) Case C-411/19

1. No shortage of case law (continued)

Judgments Topics:

- Intervention in a forest to protect it from fire and whether it is "necessary for management of the site"…….
- Reasons to give when adopting a project which has not undergone AA……
- Embedded mitigation measures and AA screening……
- AA for Forest Management Plans……
- Continuation of economic activity of an operation already authorised at the planning stage, under unchanged conditions, where authorisation has been granted following an incomplete assessment……
- AA of Forest maintenance programmes, emergency felling and measures to prevent threats to forests and to eliminate the consequences of damage caused by natural disasters from the obligation, in the event that they are likely to have a significant effect on Natura 2000 areas…..
- AA of water abstraction……

2. Focusing on Conservation Objectives

- Conservation Objectives (COs) for the site are the focus for the AA screening <u>and</u> AA.

- AA Screening: “Will the proposal prevent the objective being met?”

- AA: “What is the impact on the CO and how can it be mitigated?”

3. Mitigation in AA Screening

People over Wind C-323/17

"…. it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site."

Eco Advocacy C-721/21

"….account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site."

EC Guidance on Appropriate Assessment published in October 2021 entitled: Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (2021/C 437/01). p20

"…. project developers can sometimes design projects in a way to avoid or minimise potential impacts from the outset. This can be done by using best available technologies or by applying pre-emptive measures, including statutory measures (e.g. no go zones) prescribed e.g. in sector-specific regulations, Natura 2000 management plans or in spatial/zoning plans."

4. Providing Reasons for Decisions

"A simple statement of determination without reasons is not sufficient." OPR Practice Note PN01

"In accordance with Regulation 42(7) of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, XXXXXX has made a determination following screening that an Appropriate Assessment is not required as the project is not directly connected with or necessary to the management of the sites as European sites and as it can be concluded, on the basis of objective information, that the project, individually or in combination with other plans or projects is not likely to have a significant effect on the European sites listed above. This determination is based on the distance of sensitive qualifying species from the emergency works, the timing of the works outside of the winter bird season and the limited foreshore disturbance requirements within a previously excavated channel."

“Determination of Appropriate Assessment Screening in compliance with Article 6(3) of the EU Habitats Directive (92/43/EEC) and EU Birds Directive (79/409/EEC), as transposed into Irish legislation by the Natura 2000 Communities (Birds and Natural Habitats) Regulations 2011 and Planning and Development Act 2000 (as amended) (Section 177U) for Variation XY of the Toytown Development Plan 2017-2023 to change the zoning of lands at Noddy Lane.

The Planning Authority has determined that an Appropriate Assessment of Variation XYZ is not required, as the Variation, individually or in combination with other plans or projects, does not have the potential to result in any land use effects that could in turn result in likely significant effects on a European site. Therefore, it is not considered necessary to undertake any further stages of the Appropriate Assessment process.

In carrying out this Assessment, the Authority took into account the relevant matters specified under Part XAB of the Planning and Development Act 2000, as amended, and also:

- *The Toytown Development Plan 2017-2023*
- *The Strategic Environmental Assessment Screening of the Variation*
- *Submissions received during the public consultation period, and*
- *The Chief Executive’s Report and Recommendations.*

The determination and documentation is available for public inspection at the Authority Offices.”

5. AA and Renewable Energy

Renewable Energy Directive EU/2023/2413 now in force:

- Fast tracking renewable energy projects;
- Strategic planning by identifying acceleration areas by mid 2025;
- Streamlined permitting requirements including:
  - Derogation from EIA and AA in acceleration areas;
  - Assumed IROPI status;
  - Repowering assessments made easier;
  - Relaxation of strict protection of species clauses
  - Limited scope of assessment of repowering applications

Golden rules of AA Screening and AA

1. Use “site-led” approach

- The location and nature of the Site and most importantly, the Site Specific Conservation Objectives (SSCOs) should set the scope;

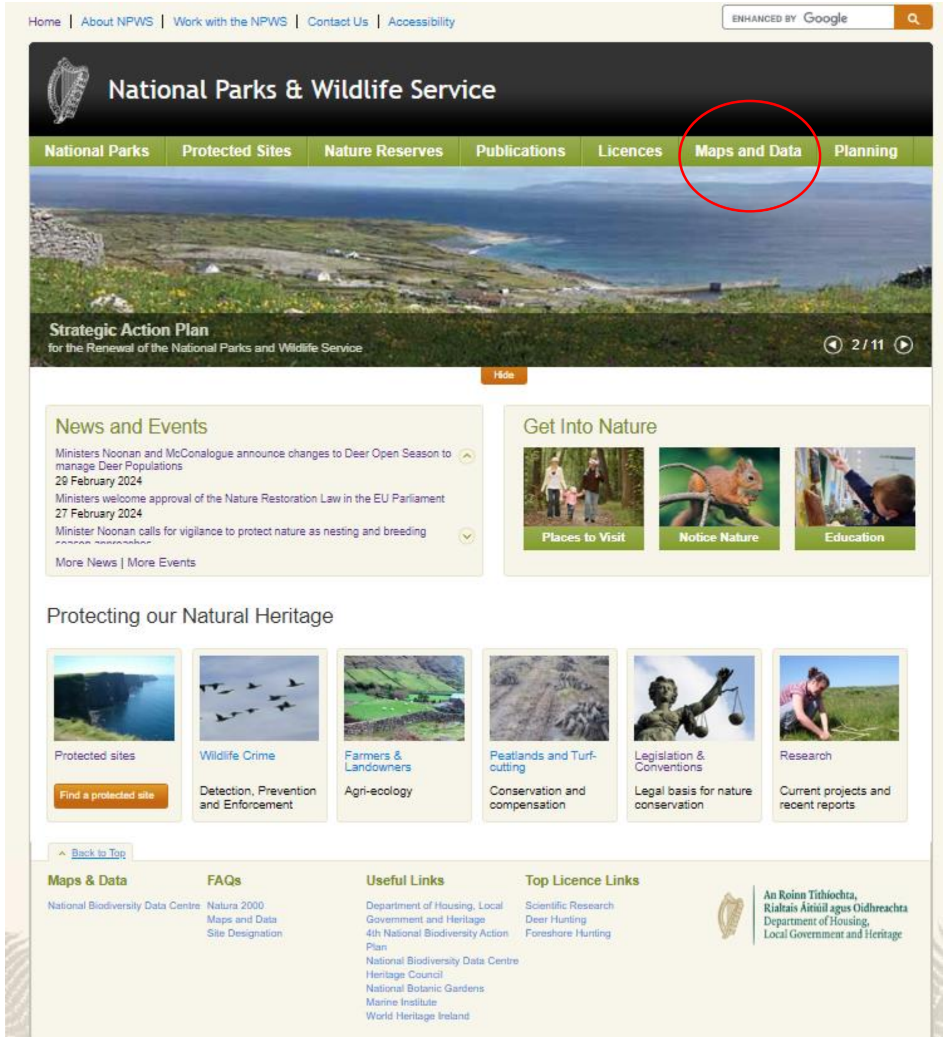
- Screening reports should avoid unnecessary data and detail which is not required to determine if AA is required.

2. Access the correct information

Locate the site and its SSCOs.

- NPWS Website

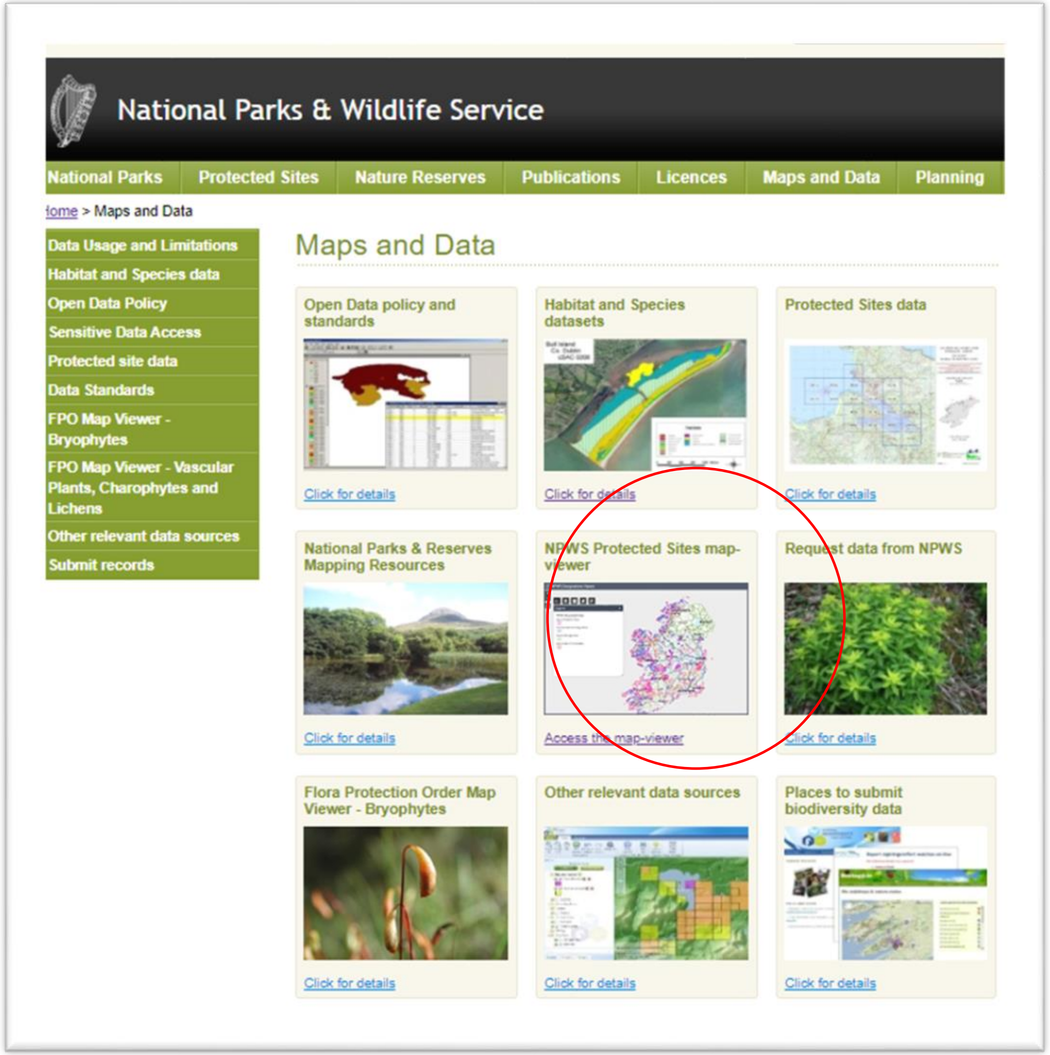
(or EPA AA GeoTool)



2. Access the correct information (continued)

Locate the site and its SSCOs.

- NPWS Protected Sites Map viewer.



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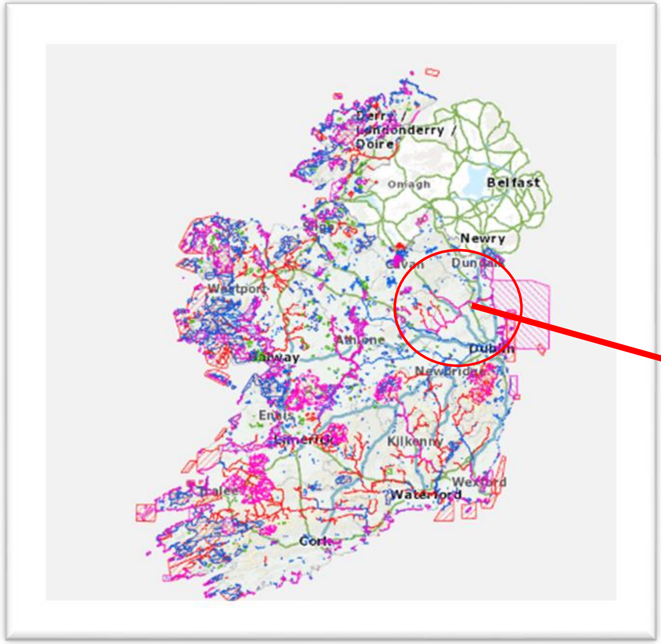
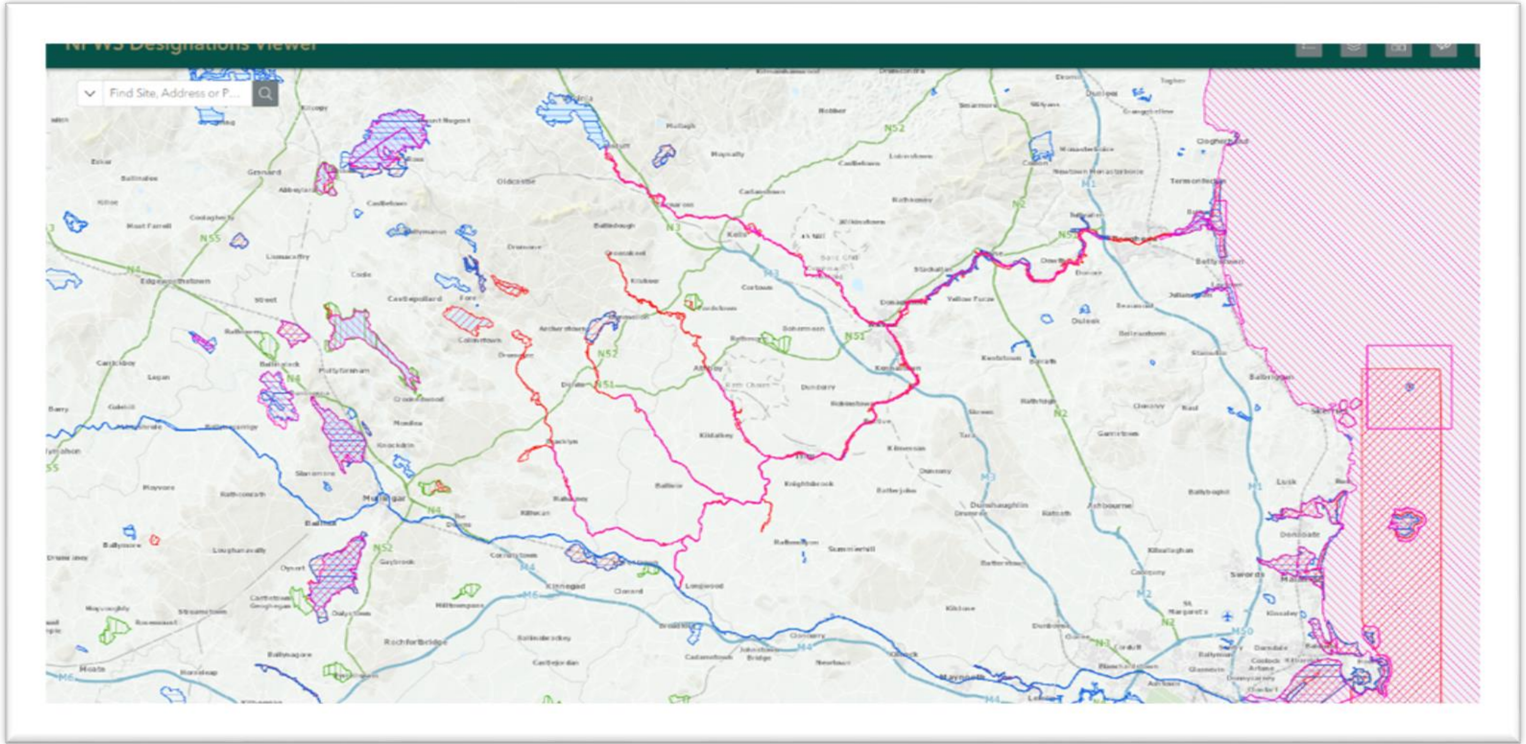
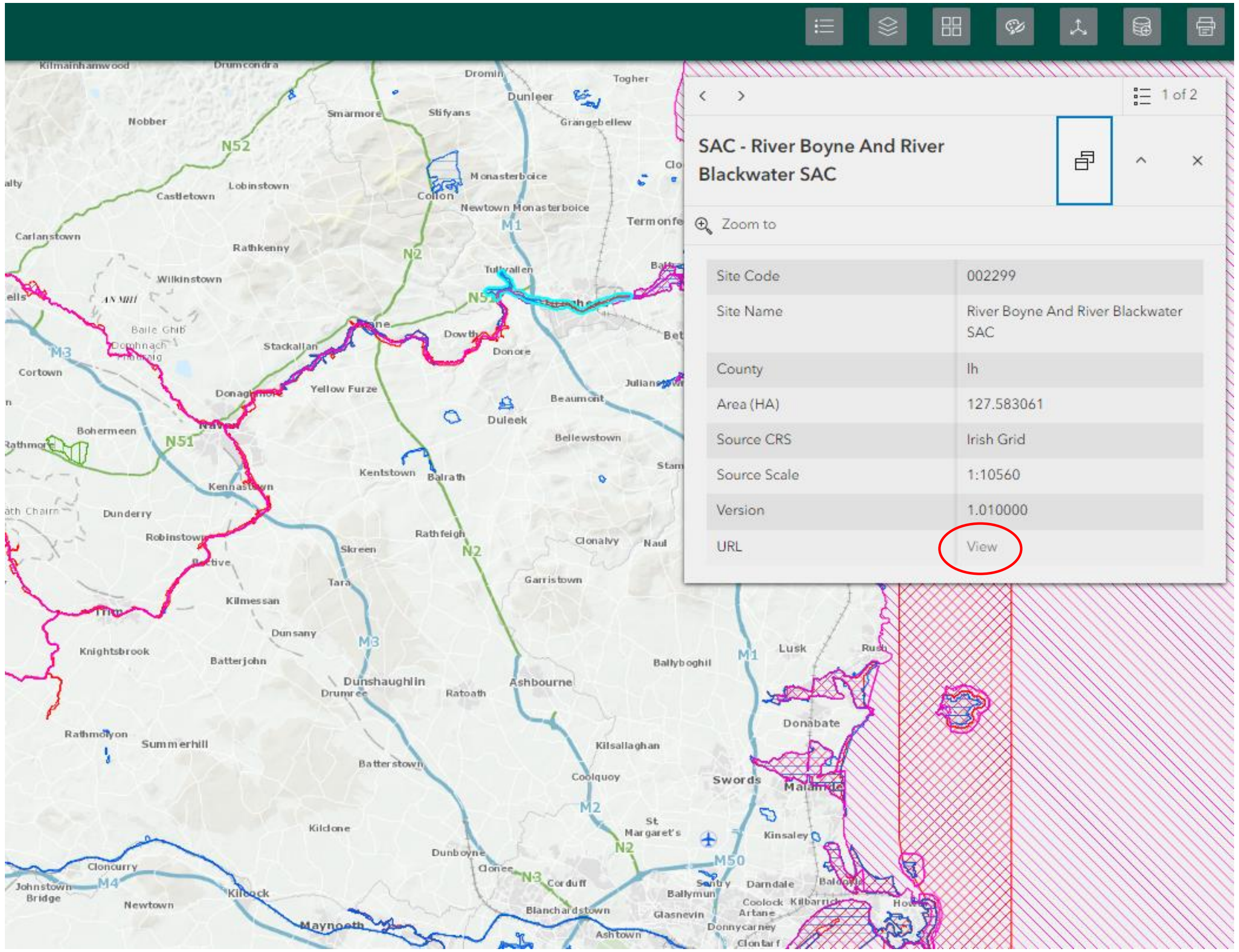




2. Access the correct information (continued)

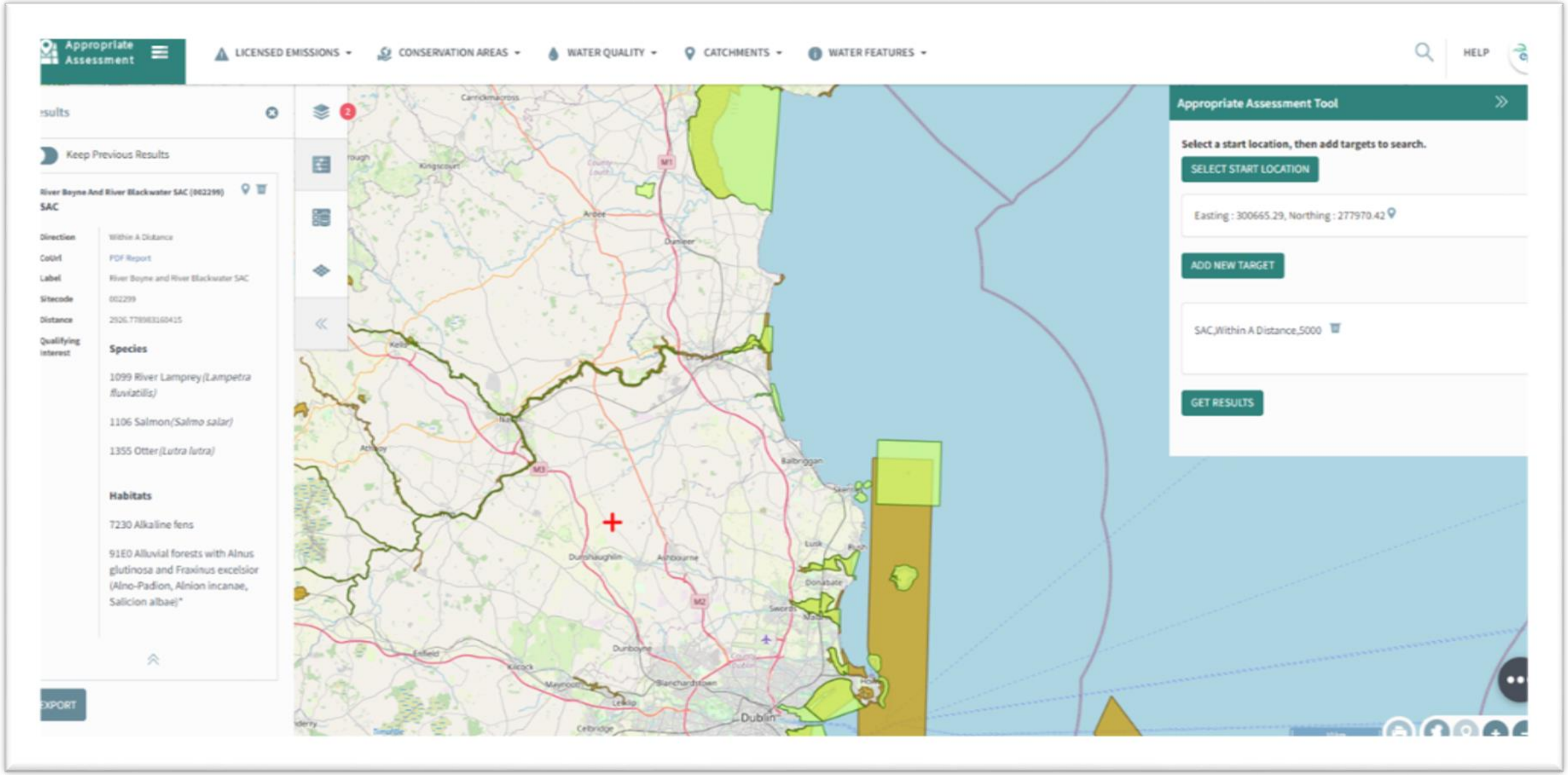
Identify Site(s) and access data.



2. Access the correct information (continued)

EPA AA GeoTool

https://epawebapp.epa.ie/terminalfour/AppropAssess/index.jsp



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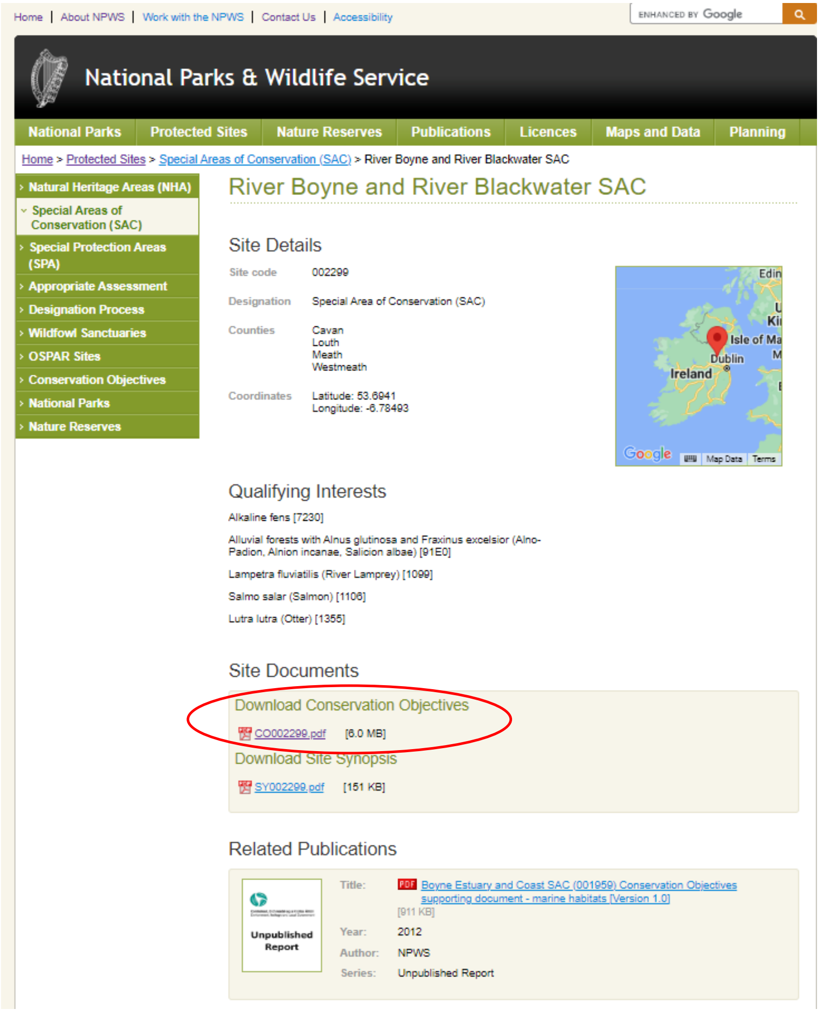
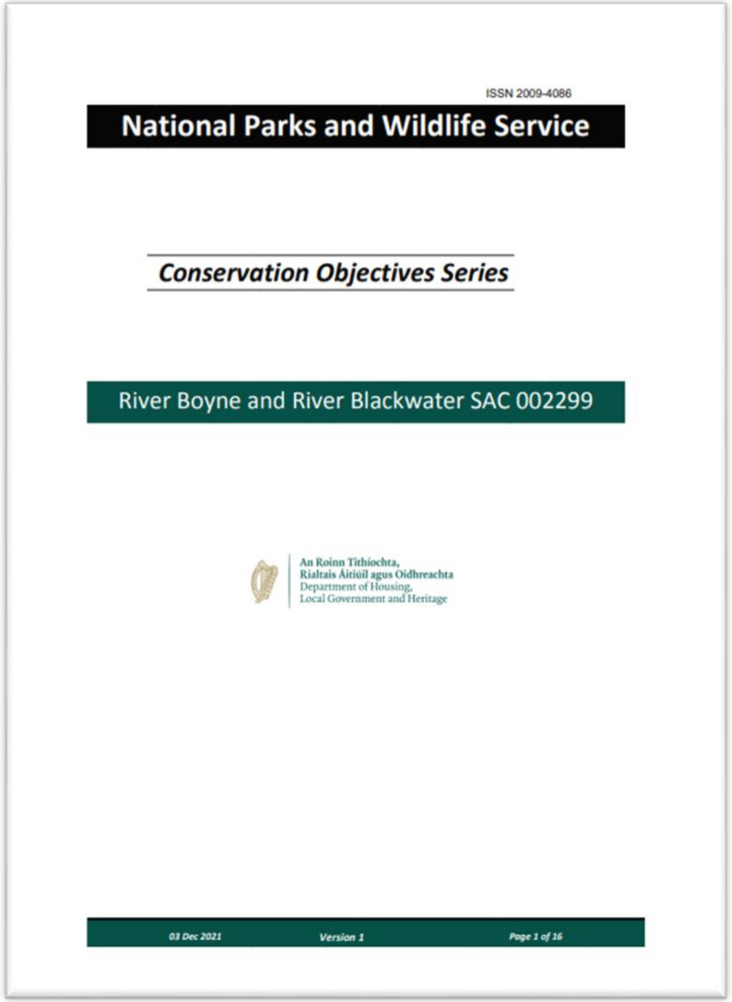


2. Access the correct information (continued)

Access SSCOs: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National Parks and Wildlife Service

Conservation Objectives Series

River Boyne and River Blackwater SAC 002299

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

03 Dec 2021 | Version 1 | Page 1 of 16

2. Access the correct information (continued)

Access SSCOs:

Look up 'Targets'

Conservation Objectives for : River Boyne and River Blackwater SAC [002299]

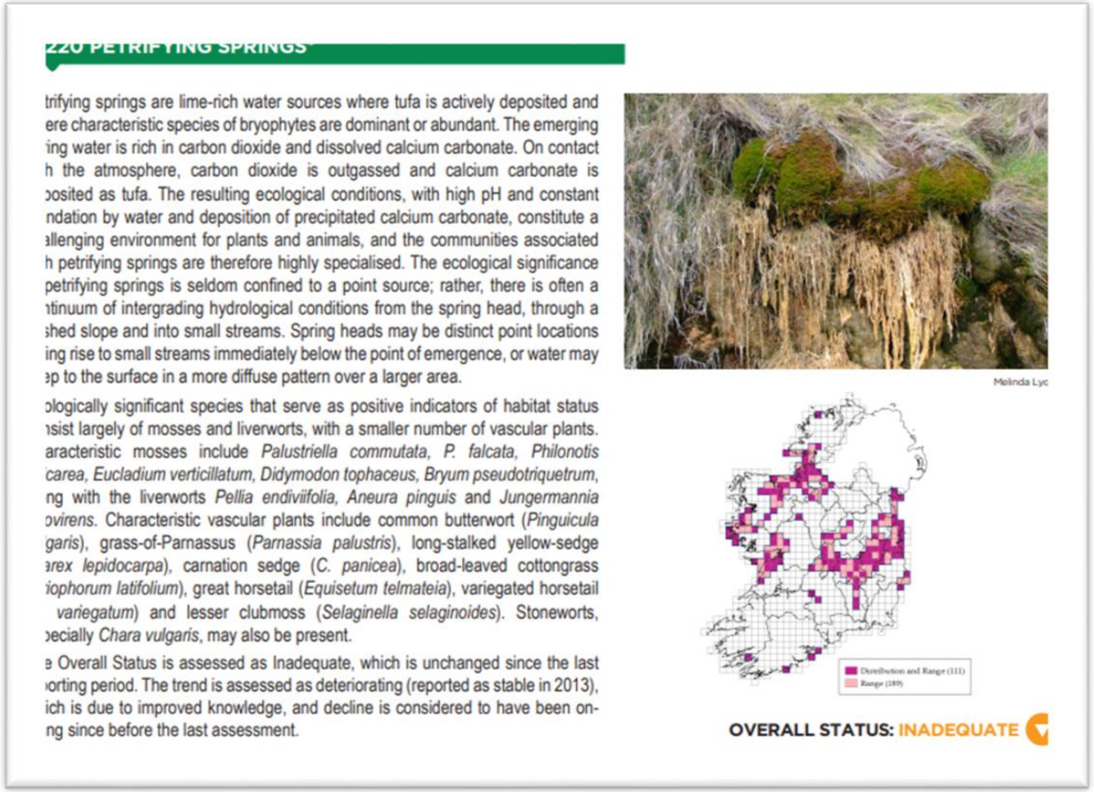
7230 Alkaline fens

To maintain the favourable conservation condition of Alkaline fens in River Boyne and River Blackwater SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Ecosystem function: hydrology - groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients; water supply	Maintain, or where necessary restore, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	Fen habitats require high groundwater levels (i.e. water levels at or above the ground surface) for a large proportion of the calendar year (i.e. duration of mean groundwater level). Fen groundwater levels are controlled by regional groundwater levels in the contributing catchment area (which sustain the hydraulic gradients of the fen groundwater table). Regional abstraction of groundwater may affect fen groundwater levels
Ecosystem function: hydrology - surface water flow	Drain density and form	Maintain, or where necessary restore, as close as possible to natural or semi-natural, drainage conditions	Drainage, either within or surrounding the fen habitat, can result in the drawdown of the groundwater table. The depth, geometry and density of drainage (hydromorphology) will indicate the scale and impact on fen hydrology. Drainage can result in loss of characteristic species and transition to drier habitats
Ecosystem function: water quality	Various	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat	Fens receive natural levels of nutrients (e.g. iron, magnesium and calcium) from water sources. However, they are generally poor in nitrogen and phosphorus, with the latter tending to be the limiting nutrient under natural conditions. Water supply should be also relatively calcium-rich

2. Access the correct information (continued)

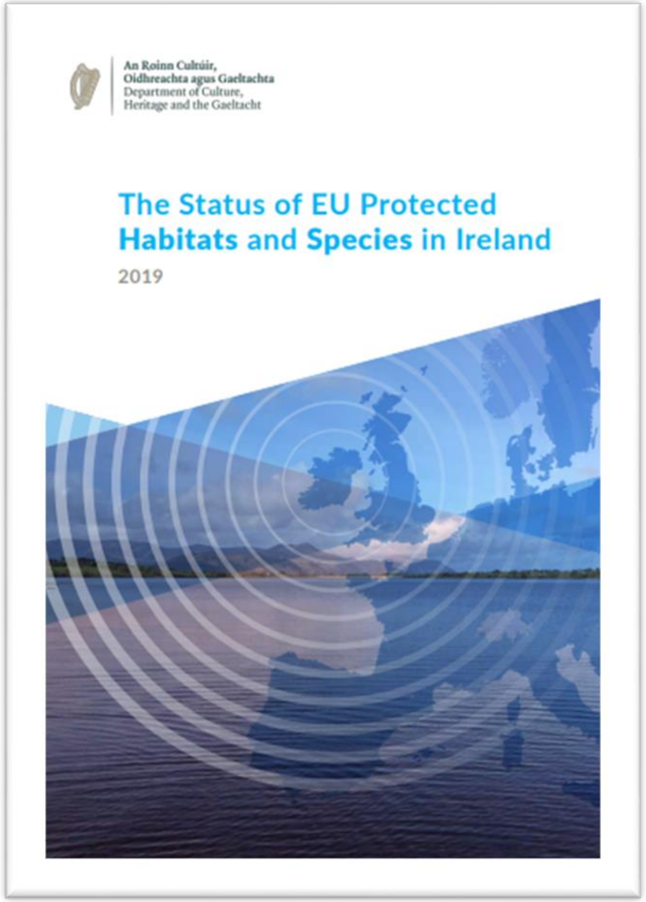
Learn more about QIs: Article 17 Reports


220 PETRIFYING SPRINGS

trifying springs are lime-rich water sources where tufa is actively deposited and ere characteristic species of bryophytes are dominant or abundant. The emerging ing water is rich in carbon dioxide and dissolved calcium carbonate. On contact h the atmosphere, carbon dioxide is outgassed and calcium carbonate is oosited as tufa. The resulting ecological conditions, with high pH and constant ndation by water and deposition of precipitated calcium carbonate, constitute a allenging environment for plants and animals, and the communities associated h petrifying springs are therefore highly specialised. The ecological significance petrifying springs is seldom confined to a point source; rather, there is often a ntinuum of intergrading hydrological conditions from the spring head, through a shed slope and into small streams. Spring heads may be distinct point locations ing rise to small streams immediately below the point of emergence, or water may ep to the surface in a more diffuse pattern over a larger area.

ologically significant species that serve as positive indicators of habitat status nsist largely of mosses and liverworts, with a smaller number of vascular plants. aracteristic mosses include *Palustriella commutata*, *P. falcata*, *Philonotis* *carea*, *Eucladium verticillatum*, *Didymodon tophaceus*, *Bryum pseudotriquetrum*, ng with the liverworts *Pellia endiviifolia*, *Aneura pinguis* and *Jungermannia* *ovirens*. Characteristic vascular plants include common butterwort (*Pinguicula* *garis*), grass-of-Parnassus (*Parnassia palustris*), long-stalked yellow-sedge *arex lepidocarpa*), carnation sedge (*C. panicea*), broad-leaved cottongrass *iophorum latifolium*), great horsetail (*Equisetum telmateia*), variegated horsetail *variegatum*) and lesser clubmoss (*Selaginella selaginoides*). Stoneworts, oecially *Chara vulgaris*, may also be present.

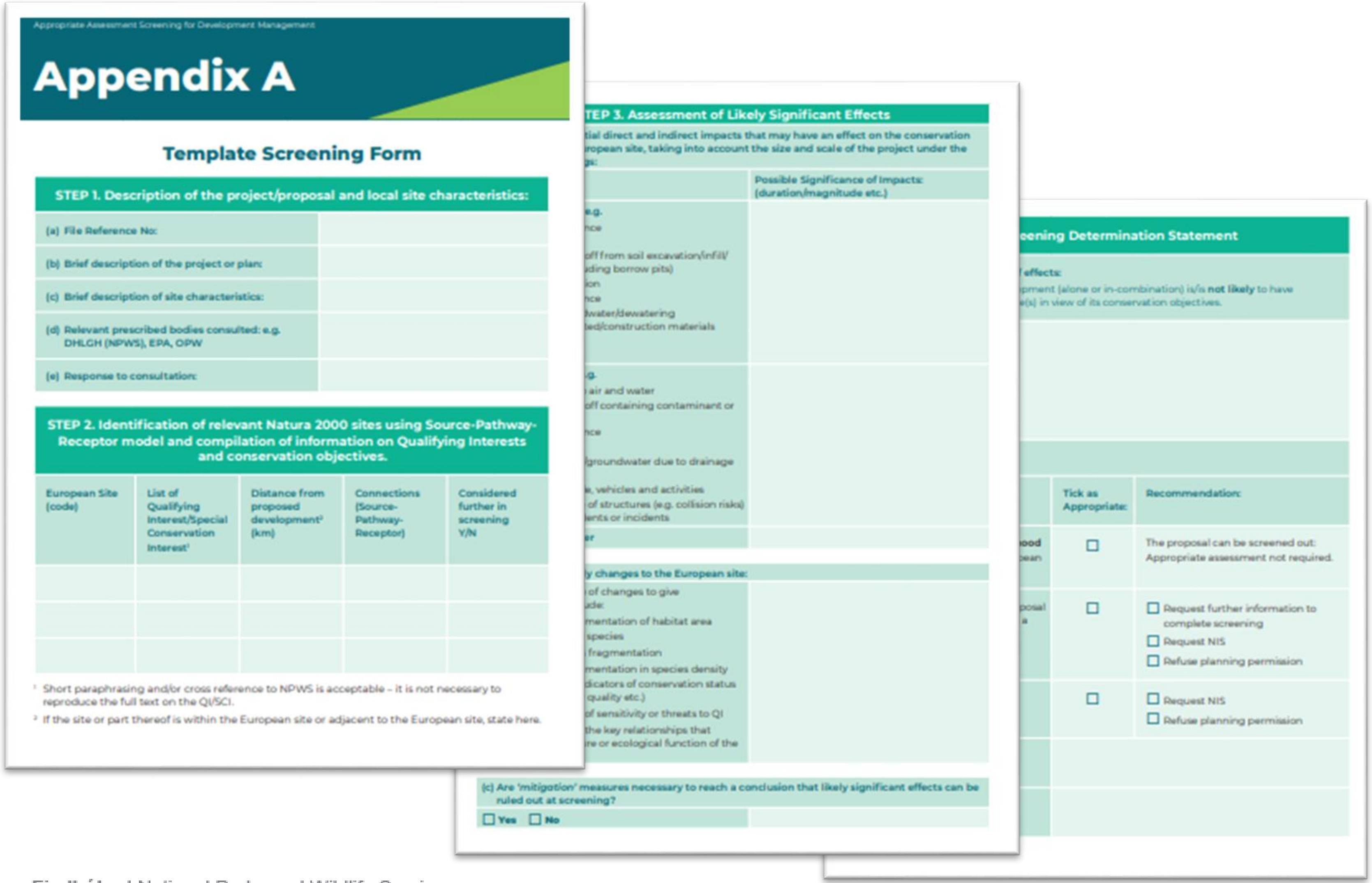
e Overall Status is assessed as Inadequate, which is unchanged since the last oorting period. The trend is assessed as deteriorating (reported as stable in 2013), ich is due to improved knowledge, and decline is considered to have been on-ng since before the last assessment.



3. Keep consistent records of how you made the decision

Screening templates:

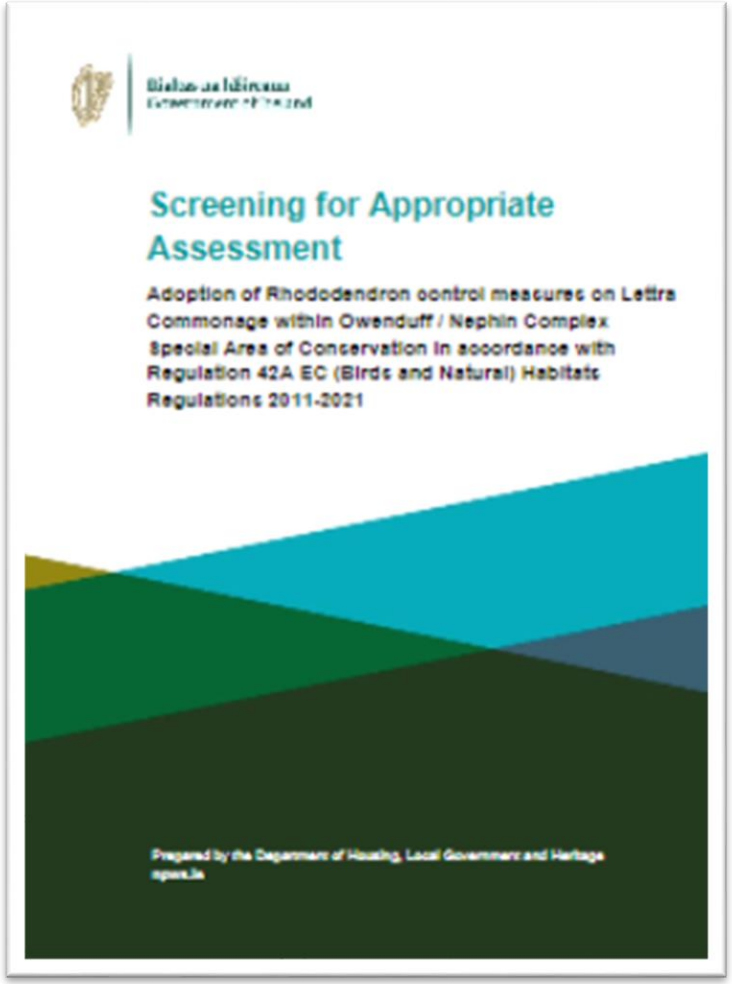
Decision-support tool.



3. Keep consistent records of how you made the decision (continued)

AA Screening determination:

Record of decision



Screening for Appropriate Assessment

Adoption of Rhododendron control measures on Lettra Commonage within Owenduff / Nephin Complex Special Area of Conservation in accordance with Regulation 42A EC (Birds and Natural) Habitats Regulations 2011-2021

Prepared by the Department of Housing, Local Government and Heritage
npws.ie

UISCE ÉIREANN : IRISH WATER

AA SCREENING DETERMINATION

Of

G.I. Works for Dingle Sludge Satellite Dewatering Centre

In accordance with Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC) and Regulation 42(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, Irish Water has undertaken Appropriate Assessment screening to assess, in view of best scientific knowledge and the conservation objectives of the site, if the project, individually or in combination with other plans or projects is likely to have a significant effect on a European site(s). In this context, particular attention was paid to the European site(s) listed below:

Dingle Peninsula SPA (004153)

In accordance with Regulation 42(7) of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, Irish Water has made a determination following screening that an Appropriate Assessment is not required as the project is not directly connected with or necessary to the management of the site as European site(s) and as it can be concluded, on the basis of objective information, that the project, individually or in combination with other plans or projects is not likely to have a significant effect on the European site(s) listed above.

This determination is based on the nature, scale, location and duration of the works, and the distance to the European Site.

Signed:

GERRY GALVIN

CHIEF TECHNICAL OFFICER

DATE: 1st November 2018

4. Use the correct terminology

- "<u>Likely significant effects</u>" for AA Screening

- "<u>Adverse effects on integrity</u>" of the site for the AA.

- "Significance" is not a determining factor in AA.

5. Screening in the absence of mitigation measures

- [*People over Wind, Eco Advocacy* cases].
- If there is a need to mitigate effects on European sites, then the efficacy of such measures is assessed during the AA stage.
- Consider:
  - Is the intention of the mitigation measure to protect the European site?
  - Is the measure entirely independent of the likelihood of significant effects?
  - Would the project screen "in" without the mitigation measure?
- E.g. Wastewater treatment plants, SUDs i.e. "standard features".
- The body responsible for screening makes the decision as to what types of measures are taken into account, <u>not</u> the applicant.

6. Refer to the SSCOs

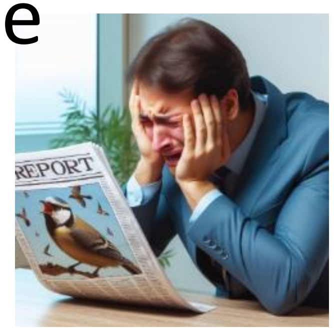
- Where a plan or project is screened “in”, the AA screening report should identify which SSCOs may be affected;

- Where a plan or project is screened “out”, the AA screening report should show evidence that all relevant SSCOs have been considered, but no need to cut and paste entire catalogue of SSCOs into main document.

- AA screening determinations should also refer to the SSCOs but clear cross-referencing to the AA Screening Report to support reasoning is likely to be adequate.

7. Screening Natura 2000 (N2K) sites

- Only the whole project/plan screens “in” or “out”.
- European sites themselves do not screen “in” or “out”, but AA screening may identify which sites may be receptors of likely significant effects.
- Can confuse the purpose of AA screening and increase complexity of reports.



8. Beware of over/under estimating pathways and impacts

Do not use a 15km “buffer zone”

Look at:

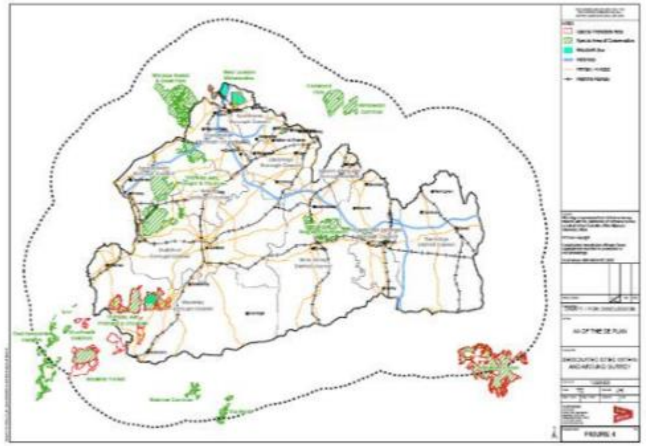
1. direct physical connectivity; and

2. hydrological and sub-catchment connectivity.

- If the site is in another (adjacent or more distant) authority, then English Nature, the Environment Agency and / or the neighbouring authority should be consulted to determine whether the site should be included. Some authorities have used buffer zones to help identify sites outside the authority: they include all sites within 10 or 15km of their authority boundary (see Figure 4 for an example of this idea). However a plan could affect European sites well outside an authority's boundaries. For instance the water supply for a local authority could be provided by a distant reservoir that is also designated as a European site. If the demand for water were to increase – say as a result of new housing development – the European site could be subject to adverse impacts as pressures on the reservoir increased. As such, a review should be carried out to identify all sites that could possibly be affected, and consultation with other organisations can help to confirm whether all relevant sites have been included.

Appropriate Assessment of Plans

Figure 4: GIS site screening map with buffer zone



8. Beware of over/under estimating pathways and impacts (continued)

Objective	Potential for Likely Significant Effects on European Sites
Extend and connect existing greenways….see Map A. Deliver programmes to establish tourism trail in Toytown….. Promote the development of Sunnytown as a outdoor recreation destination….. Encourage and facilitate the development of Scary Woods and Slippy Cave……	Individual projects that may be proposed as a result of implementing this action will be subject to screening for Appropriate Assessment and where necessary Appropriate Assessment at the project level. This will ensure that impacts associated with the implementation of this action will not adversely affect European Sites.

9. Make sure non-N2k and non-QI issues are treated properly

- E.g. Natural Heritage Areas (NHAs), Wildlife Act species, non-Annex habitats etc are not likely to be of relevance to the AA screening.

- Unhelpful tendency to combine other ecological impacts into AA documentation.

- Use Ecological Impact Assessment (EcIA) to deal with other issues.

- Recommend including Development Plan objective to require EcIA Report for development proposals in certain circumstances.

10. How to keep documents concise

1. Short introduction - Avoid cut and paste generic legal references or publicly available information. Preferably have an Executive Summary.
2. Use the source-pathway receptor model to limit scope of analysis.
3. Do not need to characterise impacts until AA stage.
4. NIS/NIR describes the likely significant effect and appropriate corresponding mitigation. Carry this theme through the whole document (E.g. quantify habitat loss due to full extent of project and match it with a mitigation measure that respects the scale and nature of the loss):

Source	Receptor	Potential Impact	SSCO affected	Mitigation	Impact after mitigation
E.g. Light spill on river bank.	E.g. QI Otters, LH bats.	Temporary disturbance leading to loss of commuting routes.	Site X QI: Otter SSCO; Barriers to connectivity, Couching sites and holts. QI: LH bats SSCO: No significant increase in artificial light intensity along commuting routes within 2.5km of those roosts	See light fitting design and proposed timing of lighting to restrict lit area as shown in Light spill model Figure X. Light spill to be verified on site after installation and adjusted if required.	Dark area preserved along river bank as shown in Figure X. No significant increase in artificial light intensity along commuting routes.

10. How to keep documents concise (continued)

5. Mitigation needs to be kept focused, site-specific and detailed but must match the predicted impact.
   - Site drawings, method statements (not draft or generic) are recommended and must be capable of being implemented fully.
   - Monitoring to collect data on effectiveness of mitigation encouraged, but is separate to mitigation proposals and not to be relied upon as mitigation.
   - Be sceptical of mitigation that, in reality, has not been tested or will take a long time to be effective (e.g. hedgerow replacement, habitat restoration).
   - No mitigation should be left to be agreed with LA/NPWS – this would be a lacunae in the AA determination.

10. How to keep documents concise (continued)

8. Consideration of “in-combination” impacts remains challenging.
    - Needs to be proportionate.
    - In AA screening, consideration of “in combination” effects not always necessary if there are Likely Significant Effect (LSE) of the plan or project alone.
    - Where undertaken “in-combination” assessment needs to be meaningful. For example, impacts of “activities” may have greater significance than planning permissions.

Examples

How to describe impacts on Conservation Objectives in a useful way?

Qualifying Interests

** indicates a priority habitat under the Habitats Directive*

002299 River Boyne and River Blackwater SAC

1099	River Lamprey *Lampetra fluviatilis*
1106	Salmon *Salmo salar*
1355	Otter *Lutra lutra*
7230	Alkaline fens
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)*

Conservation Objectives for : River Boyne and River Blackwater SAC [002299]

7230 Alkaline fens

To maintain the favourable conservation condition of Alkaline fens in River Boyne and River Blackwater SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes	Alkaline fen has not been mapped in detail for River Boyne and River Blackwater SAC and thus the exact total current area of the qualifying habitat in the SAC is currently unknown. The main areas of alkaline fen in the SAC are documented to occur in the vicinity of Lough Shesk, Freekan Lough, Newtown Lough in the upper reaches of the Stonyford River. At Lough Shesk, the habitat is particularly well-represented and there is a good example of succession from open water to fen-type habitat (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See the notes for habitat area above
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil pH and nutrient status within natural ranges	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat in NPWS (2013). See also Bobbink and Hettelingh (2011). Increased nutrients can lead to changes in plant and invertebrate species through competition and subsequent structural changes to micro-habitat. These nutrients favour growth of grasses rather than forbs and mosses and leads to a higher and denser sward
Ecosystem function: peat formation	Percentage cover of peat-forming vegetation and water table levels	Maintain active peat formation, where appropriate	In order for peat to form, water levels need to be slightly below or above the soil surface for c.90% of the time
Ecosystem function: hydrology - groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients; water supply	Maintain, or where necessary restore, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	Fen habitats require high groundwater levels (i.e. water levels at or above the ground surface) for a large proportion of the calendar year (i.e. duration of mean groundwater level). Fen groundwater levels are controlled by regional groundwater levels in the contributing catchment area (which sustain the hydraulic gradients of the fen groundwater table). Regional abstraction of groundwater may affect fen groundwater levels
Ecosystem function: hydrology - surface water flow	Drain density and form	Maintain, or where necessary restore, as close as possible to natural or semi-natural, drainage conditions	Drainage, either within or surrounding the fen habitat, can result in the drawdown of the groundwater table. The depth, geometry and density of drainage (hydromorphology) will indicate the scale and impact on fen hydrology. Drainage can result in loss of characteristic species and transition to drier habitats
Ecosystem function: water quality	Various	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat	Fens receive natural levels of nutrients (e.g. iron, magnesium and calcium) from water sources. However, they are generally poor in nitrogen and phosphorus, with the latter tending to be the limiting nutrient under natural conditions. Water supply should be also relatively calcium-rich
Vegetation composition: community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	The entire diversity of alkaline fen vegetation communities present in the SAC is currently unknown. Information on the vegetation communities associated with alkaline fens is provided by O'Neill et al. (in prep.). See also the Irish Vegetation Classification (Perrin, 2018; www.biodiversityireland.ie/projects/ivc-classification-explorer)

For lists of typical bryophyte species, including high quality indicator species, see O'Neill et al. (in prep.). Species recorded at Lough Shesk and Newtown Lough include: *Calliergon giganteum, Scorpidium scorpioides, Campylium stellatum, Bryum pseudotriquetrum, Fissidens adianthoides, Scorpidium scorpioides, Calliergonella cuspidata* and *Ctenidium molluscum* (NPWS internal files)

For lists of typical vascular plant species for the different vegetation communities, including high quality indicators, see O'Neill et al. (in prep.). Typical species recorded in the habitat in the SAC include black bog-rush (*Schoenus nigricans*), dioecious sedge (*C. dioica*) and common butterwort (*Pinguicula vulgaris*) (NPWS internal files)

Negative indicators include species not characteristic of the habitat and species indicative of undesirable activities such as overgrazing, undergrazing, nutrient enrichment, agricultural improvement or impacts on hydrology. Native negative indicators may include *Anthoxanthum odoratum, Epilobium hirsutum, Holcus lanatus, Juncus effusus, Phragmites australis* and *Ranunculus repens*. See O'Neill et al. (in prep.)

Attribute and target based on O'Neill et al. (in prep.). Non-native species can be invasive and have deleterious effects on native vegetation. A low target is set as non-native species can spread rapidly and are most easily dealt with when still at lower abundances

Attribute and target based on O'Neill et al. (in prep.). Scrub and trees will tend to invade if fen conditions become drier

Attribute and target based on O'Neill et al. (in prep.). Algal cover is indicative of nutrient enrichment from multiple sources (McBride et al., 2011)

Attribute and target based on O'Neill et al. (in prep.). While grazing may be appropriate in this habitat, excessive grazing can reduce the ability of plant species to regenerate reproductively and maintain species diversity, especially if flowering shoots are cropped during the growing season

Attribute and target based on O'Neill et al. (in prep.). While grazing may be appropriate in this habitat, excessive areas of disturbed bare ground may develop due to unsuitable grazing regimes. Disturbance can include hoof marks, wallows, human footprints, vehicle and machinery tracks. Excessive disturbance can result in loss of characteristic species and presage erosion for peatlands

Attribute and target based on O'Neill et al. (in prep.)

This includes species on the Flora (Protection) Order, 2015 and/or Red Lists (Byrne et al., 2009; Regan et al., 2010; Lockhart et al., 2012; Wyse Jackson et al., 2016, etc.). The Near Threatened species (Wyse Jackson et al., 2016) round-leaved wintergreen (*Pyrola rotundifolia*) has been recorded in the habitat around Newtown Lough in the SAC (NPWS internal files)

Transitional areas between fen and adjacent habitats	Hectares; distribution	Maintain adequate transitional areas to support/protect the alkaline fen ecosystem and the services it provides	In many cases, fens transition to other wetland habitats. It is important that the transitional areas between fens and other habitats are maintained in as natural condition as possible in order to protect the functioning of the fen

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Examples

Pull out the Attributes and Targets for the relevant SSCOs

Qualifying Interests

** indicates a priority habitat under the Habitats Directive*

002299 River Boyne and River Blackwater SAC

1099	River Lamprey *Lampetra fluviatilis*
1106	Salmon *Salmo salar*
1355	Otter *Lutra lutra*
7230	Alkaline fens
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)*

Table 5-3: River Boyne and River Blackwater SAC Conservation Condition and Site-specific Conservation Objectives

Annex I Qualifying Habitat/ Annex II Qualifying Species	Representativity	Population Significance	Objective	Site-specific Attributes
*Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]	B	-	Restore	Habitat area Habitat distribution Woodland size Woodland structure: cover and height Woodland structure: community diversity and extent Woodland structure: natural regeneration Hydrological regime: flooding depth/height of water table Woodland structure: dead wood Woodland structure: veteran trees Woodland structure: indicators of local distinctiveness Vegetation composition: native tree cover Vegetation composition: typical species Vegetation composition: negative indicator species Vegetation composition: problematic native species
River Lamprey *Lampetra fluviatilis* [1099]	-	C	Restore	Distribution Distribution of larvae Population structure of larvae Larval lamprey density in fine sediment Extent and distribution of spawning nursery habitat
Salmon *Salmo salar* [1106]	-	C	Restore	Distribution: extent of anadromy Adult spawning fish Salmon fry abundance Out-migrating smolt abundance Number and distribution of redds Water quality
Otter *Lutra lutra* [1355]	-	C	Maintain	Distribution Extent of terrestrial habitat Couching sites and holts Fish biomass available Barriers to connectivity

Examples

Table 6-1: Prediction of Effects on Site Integrity (QIs) of the River Boyne and River Blackwater SAC During all Phases of the Proposed Scheme

Relevant Qualifying Interest	Effect pathway(s)	Relevant Site-level Threat (NPWS, 2019d)	Potential for adverse effect(s) on the CO attributes of relevant QIs (NPWS, 2021; Version 1 03/12/2021)	Target
*Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]	Water pollution (i.e. sedimentation and contaminants); disturbance (i.e. noise, vibration, human presence and lighting); air pollution; bridge shading.	Pollution to surface waters (limnic, terrestrial, marine & brackish) (H01); Bridge, viaduct (D01.05); Other human intrusions and disturbances (G05); Siltation rate changes, dumping, depositing of dredged deposits (J02.11); Roads, motorways (D01.02); Other discharges (E03.04); Human induced changes in hydraulic conditions (J02); Invasive non-native species (I01).	**Habitat area** Potential identified	Area stable or increasing, subject to natural processes.
			Habitat distribution Potential identified	No decline, subject to natural processes.
			Woodland size Potential identified	Area stable or increasing. Where topographically possible, 'large' woods at least 25 ha in size and 'small' woods at least 3 ha in size.
			Woodland structure: cover and height Potential identified	Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20 cm; bryophyte cover at least 4%.
			Woodland structure: community diversity and extent Potential identified	Maintain diversity and extent of community types.
			Woodland structure: natural regeneration Potential identified	Seedlings, saplings and pole age-classes of target species for 91E0* woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy.
			Woodland structure: dead wood Potential identified	At least 19 stems/ ha of dead wood of at least 20 cm diameter.
			Woodland structure: veteran trees Potential identified	No decline.
			Woodland structure: indicators of local distinctiveness Potential identified	No decline in distribution and, in the case of red listed and other rare or localised species, population size.
			Vegetation composition: native tree cover Potential identified	No decline. Native trees cover at least 90% of canopy; target species cover at least 50% of canopy.
			Vegetation composition: typical species Potential identified	At least 1 target species for 91E0* woodlands present; at least 6 positive indicator species for 91E0* woodlands present.

Examples

Relevant Qualifying Interest	Effect pathway(s)	Relevant Site-level Threat (NPWS, 2019d)	Potential for adverse effect(s) on the CO attributes of relevant QIs (NPWS, 2021; Version 1 03/12/2021)	Target
			Hydrological regime: flooding depth/height of water table Potential identified	Appropriate hydrological regime necessary for maintenance of alluvial vegetation.
			Vegetation composition: negative indicator species Potential identified	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent.
			Vegetation composition: problematic native species- Potential identified	Cover of common nettle (*Urtica dioica*) less than 75%.
			Woodland structure: indicators of overgrazing None predicted. The Proposed Scheme will not introduce overgrazing.	All five indicators of overgrazing absent[33].
River Lamprey *Lampetra fluviatilis* [1099]			**Distribution** None predicted. The footprint of the Proposed Scheme is not located within any waterbodies that may interfere with access and will not introduce any barriers to migration.	Restore access to all water courses down to first order streams.
			Distribution of larvae Potential identified	Not less than 50% of sample sites with suitable habitat positive for larval brook/river lamprey.
			Population structure of larvae Potential identified	At least three age/size classes of larval brook/river lamprey present.
			Larval lamprey density in fine sediment Potential identified	Mean density of brook/river larval lamprey in sites with suitable habitat more than 5/ m².
			Extent and distribution of spawning / nursery habitat Potential identified	No decline in extent and distribution of spawning and nursery beds.
Salmon *Salmo salar* [1106]			**Distribution: extent of anadromy** None predicted. The footprint of the Proposed Scheme is not located within any waterbodies that may interfere with access and will not introduce any barriers to migration.	100% of river channels down to second order accessible from estuary.

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What lies ahead for AA….

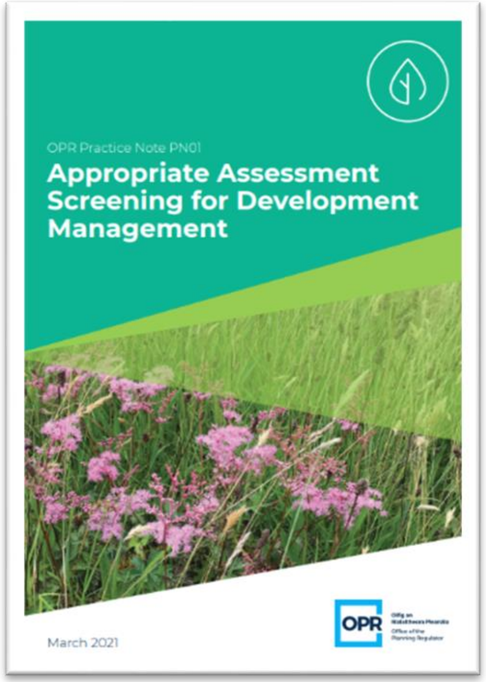
What lies ahead....

- Application of 6(3) and (4) to Renewable Energy Projects.
- Air pollution and effects on N2k sites (Dutch Nitrogen case, Air Pollution Information System (APIS)).
- Nature Restoration Law
- Increased focus on 6(1) and (2)
- Evidence for success of mitigation measures.
- Strengthen ecological expertise
- Support tools

What lies ahead....

Support tools

- Managing Natura 2000 Sites (EC, 2018)
- Methodological Guidance on Articles 6(3) and 6(4) of the Habitats Directive (EC, 2021)
- Appropriate Assessment Screening for Development Management (OPR, 2021)
- AA of Plans and Projects in Ireland Guidance for Planning Authorities (DEHLG, Rev 1 Feb, 2010) – revision in progress.



Abbreviations & Acronyms

- AA — Appropriate Assessment
- APIS — Air Pollution Information System
- ARC — Activity Requiring Consent
- CO — Conservation Objective
- DEHLG — Dept. Environment, Heritage & Local Government
- EcIA — Ecological Impact Assessment
- EGAU — Ecological Guidance and Advisory Unit
- EIA — Environmental Impact Assessment
- EPA — Environmental Protection Agency
- IROPI — Imperative Reasons of Overriding Public Interest
- LA — Local Authority
- LSE — Likely Significant Effects
- N2K — Natura 2000
- NHA — Natural Heritage Area
- NIR — Natura Impact Report
- NIS — Natura Impact Statement
- NPWS — National Parks and Wildlife Service
- NRL — Nature Restoration Law
- OPR — Office of the Planning Regulator
- PA — Public Authority
- REDIII — Renewable Energy Directive
- RSES — Regional Spatial and Economic Strategy
- SAC — Special Area of Conservation
- SCIs — Special Conservation Interests
- SEA — Strategic Environmental Assessment
- SI — Site Investigation
- SPA — Special Protected Area
- SSCO — Site Specific Conservation Objectives
- QIs — Qualifying Interests

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Thank you for listening.