

RIVER FAUGHAN & TRIBUTARIES SAC  
UK0030361

# CONSERVATION OBJECTIVES

## Document Details

|                     |  |
|---------------------|--|
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## Revision History:

| Version | Date         | Summary of Changes        | Initials |
|---------|--------------|---------------------------|----------|
| V1      | June 2013    | Internal working document | PC       |
| V2      | January 2015 | Complete review           | RMK      |
| V3      | July 2017    | Edit and minor correction | PC       |
|         |              |                           |          |
|         |              |                           |          |

## Site relationships

To fully understand the conservation requirements of this site, it is necessary to also refer to the Conservation Objectives for Lough Foyle SPA.

The River Faughan & Tributaries SAC boundary adjoins the boundary of Lough Foyle SPA.

## 1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives<sup>1</sup> to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

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<sup>1</sup> 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

## 2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition
- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.
- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

## 3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and;
- there is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long term basis.

### 3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as “the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site”.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

### 4. SITE INFORMATION

**COUNTY:** LONDONDERRY

**GRID REFERENCE:** IC 51660776

**UPPER G.R.:** IC 53580099  
IC 54300028  
IC 60600062  
IC 58690085  
IC 48570631  
IC 56621256

**LOWER G.R.:** IC 48892002

**AREA:** 293.27 ha

**LENGTH:** 62 km

### 5. SUMMARY SITE DESCRIPTION

The area is of interest because of the physical features of the river and its associated riverine flora and fauna. The River Faughan and Tributaries SAC includes the River Faughan and its tributaries the Burntollet River, Bonds Glen and the Glenrandal River (and its tributary the Inver River).

In total, the area encompasses approximately 60km of watercourse and is notable for the physical diversity and naturalness of the banks and channels, especially in the upper reaches, and the richness and naturalness of its plant and animal communities, in particular the population of Atlantic Salmon *Salmo salar*, which is of international importance and the widespread and common occurrence of Otter *Lutra lutra* in the catchment. Upland Oak Woodland is also well-developed in places along the valley sides of the River Faughan and its tributaries.

Further details of the site are contained in the relevant ASSI Citations and Views About Management statements, which are available on the DAERA website ([www.daera-ni.gov.uk](http://www.daera-ni.gov.uk)).

## 5.1 BOUNDARY RATIONALE

Defining the extent of site boundaries for rivers is variable across the UK. The four options currently in use are:

1. whole catchments
2. main river stem from source to mouth, tributaries and upland catchment
3. main river stem from source to mouth and tributaries
4. main river stem from source to mouth only

The option used is dependent on the qualifying features for that site and the current knowledge of distribution of that feature.

In the case of the River Faughan and Tributaries, the qualifying SAC/ASSI features are its nationally important population of Salmon, and its regionally important Otter population.

The upper limits for all the tributaries and sub-tributaries are currently generally determined by the known limits of good spawning and nursery habitat or woodland. The upper limit is typically indicated on the ground by a physical feature such as a bridge. The downstream limit of the site is determined by the tidal limit which is also the boundary of Lough Foyle SPA.

The lateral boundary beyond the river channel follows the same guidelines as that for all ASSIs, which is dependent on the type and quality of adjacent habitat. Much of the ASSI has limited adjacent habitat. Therefore, the boundary is often restricted to the top of the riverbank.

Although fragmented, semi-natural woodland is present throughout the site, with the main blocks found at Ness and Ervey Woods, both Country Parks on the Burntollet River, and Bonds Glen Wood on the Bonds Glen. These woodlands were previously designated as ASSIs for their woodland interest and have been included within the River Faughan and Tributaries SAC. Other significant stands of woodland occur along the valley sides of the Faughan and Glenrandal Rivers. These woodlands and the interconnecting woodland strips which run along the river banks vary in the extent that they are fenced.

Due to the size of the area, the boundary was largely derived from ortho-rectified colour aerial photographs. Some information on adjacent habitats was derived from previous surveys.

The boundary uses permanent man-made features where possible. However, along some stretches of the river and woodland edge, such boundaries were absent and recognisable topographical or physical features such as breaks in slope, scrub or tree line were used.

## 5. SAC SELECTION FEATURES

| Feature Type | Feature   | Global Status | Size/ extent/ pop~ |
|--------------|---|---------------|--------------------|
| Species      | Atlantic Salmon <i>Salmo salar</i>  | B             | 1,000-10,000       |
| Habitat      | Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles | C             | 96ha               |
| Species      | Otter <i>Lutra lutra</i>  | C             | C                  |
| Species      | Sea Lamprey <i>Petromyzon marinus</i>   | D             | P                  |
| Species      | Brook Lamprey <i>Lampetra planeri</i>   | D             | P                  |
| Species      | River Lamprey <i>Lampetra fluviatilis</i>                                       | D             | P                  |

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

**A** - Sites holding outstanding examples of the habitat in a European context.

**B** - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

**C** - Examples of the habitat which are of at least national interest (i.e. usually above the threshold for SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

**D** - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click [here](#) to go to the Natura 2000 Standard Data Form for River Faughan & Tributaries SAC.

## 6.1 ASSI SELECTION FEATURES

### River Faughan & Tributaries ASSI

| Feature Type  | Feature                            | Size/<br>extent/population |
|---------------|------------------------------------|----------------------------|
| Habitat       | Oakwood                            | 96 ha                      |
| Species       | Atlantic Salmon <i>Salmo salar</i> |                            |
| Species       | Otter <i>Lutra lutra</i>           |                            |
| Earth Science | Dalradian series                   |                            |

Table 2. List of ASSI features.

## 7. CONSERVATION OBJECTIVES

The *Conservation Objective* for this site is:

*To maintain (or restore where appropriate) the*

- Atlantic Salmon *Salmo salar*
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
- Otter *Lutra lutra*

*to favourable condition.*

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

## 8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

| Feature   | Grade | Objective   |
|---|-------|---|
| Atlantic Salmon<br><i>Salmo salar</i>   | B     | Maintain and if possible expand existing population numbers and distribution (preferably through natural recruitment), and improve age structure of population.   |
|   |       | Maintain and if possible enhance the extent and quality of suitable Salmon habitat - particularly the chemical and biological quality of the water and the condition of the river channel and substrate.  |
| Old Sessile Oak Woodlands with <i>Ilex</i> and <i>Blechnum</i> in the British Isles | C     | Maintain and where feasible <u>expand</u> the extent of existing oak woodland but not at the expense of other SAC (ABC) features. (There are areas of degraded heath, wetland and damp grassland which have the potential to develop into Oak woodland) |
|   |       | Maintain and enhance Oak woodland species diversity and structural diversity.   |
|   |       | Maintain the diversity and quality of habitats associated with the Oak woodland, e.g. fen, swamp, grasslands, scrub, especially where these exhibit natural transition to Oak woodland  |
|   |       | Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation.   |
|   |       | Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.   |
|   |       |   |
| Otter <i>Lutra lutra</i>  | C     | Maintain and if possible increase population numbers and distribution.  |
|   |       | Maintain the extent and quality of suitable Otter habitat, in particular the chemical and biological quality of the water and all associated wetland habitats   |



## 9. ASSI FEATURE OBJECTIVE REQUIREMENTS

| Feature                            | Component Objective  |
|------------------------------------|--|
| Oakwood                            | See SAC Selection Feature Objective Requirements table.  |
| Atlantic Salmon <i>Salmo salar</i> | See SAC Selection Feature Objective Requirements table.  |
| Otter <i>Lutra lutra</i>           | See SAC Selection Feature Objective Requirements table.  |
| Earth Science – Daldarian series   | Maintain extent and quality of exposure, together with access to the feature subject to natural processes. |

## 10. MANAGEMENT CONSIDERATIONS

### Ownership

There are several hundred individuals or organisations with ownership or other rights associated with the area.

### Adjoining Land Use

The River Faughan and its tributaries, in the main, flow through improved or semi-improved pasture used for silage and grazing with the channel generally fenced from the surrounding land at least along one bank top. Along the lower reach of the River Faughan below Derry City the main adjacent agricultural uses include tilled land and silage production, in addition to stock grazing. A number of large commercial sand quarries are also located along this lower reach on the eastern side of the river.

## 11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting River Faughan & Tributaries, or could affect it in the future.

Although **Salmon *Salmo salar*, Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles and Otter *Lutra lutra*** are the qualifying SAC features, factors affecting ASSI features are also considered.

**NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.**

## **River**

### ***Water Quality/Eutrophication:***

Water quality is probably the most important single factor for the SAC/ASSI selection features with both point and diffuse sources of pollution potentially damaging. These are dependent on human activities throughout the catchment, the majority of which are largely beyond the direct control of the current designation. The total catchment area feeding into the river system is 28,271ha and consists of 6 sub-catchments. The designation only includes the main channels of the River Faughan and its tributaries, the Burntollet River, Bonds Glen and the Glenrandal River (and its tributaries the Inver River) but has excluded several other tributaries.

Analysis of biological water quality monitoring data from 2003 to 2006 indicates that water quality is good to very good on most rivers although there does seem to be a fluctuation in quality over this period in the middle and lower reaches of the River Faughan while the Burngibbagh and Foreglen Rivers are a cause for concern. Chemical water quality monitoring data however indicates that water quality is good to very good on all rivers.

A significant portion of the upper catchments of the Burntollet River is afforested; there is a potential for enrichment of the river during forestry operations (planting and fertiliser application).

There are at least 7 sewage works within the catchment varying in size and the degree of treatment they provide. There are also numerous septic tanks.

Stock have open access to the channel along many sections of the River Faughan and its tributaries and have caused poaching of the bank and channel. This represents another possible source of enrichment.

**ACTION:** Review Water Order consents

**ACTION:** Reduce enrichment of the water column by minimising point source pollution and through a catchment-wide campaign, encourage land owners to avoid excessive fertiliser inputs, thus reducing diffuse pollution. Reassess occurrence of consented and unconsented discharges to establish extent and significance of impacts and therefore focus actions for reducing such impacts. Restrict stock access to less sensitive watering points, introduce buffer strips (where currently absent) and extend elsewhere. Increase the amount of fencing along riverbanks.

### ***Channel & Bank Modification:***

The River Faughan was originally designated for drainage in 1947. A total length of 11.25km was designated at this time. Further designation was required in 1963 covering a total of 19.75km of the river. This was primarily to improve flood defences to existing commercial properties. The limit of designation is upstream of Killycor Bridge (C570 057). Upstream of this point, there has been no in-channel works and the channel and banks are presumed to be natural.

The work that has been carried out on the River Faughan has been mainly floodbanking, though there has been some resectioning in the middle reaches.

**ACTION: Future in-river and bankside works should be minimised as they reduce habitat and species diversity. Due to the dynamic nature of rivers, work carried out at any point on the river may have a significant impact on the catchment as a whole. Initiate discussions with Rivers Agency to co-ordinate action.**

The River Faughan and some of its tributaries have undergone fisheries modifications with the installation of weirs and deflectors as part of habitat enhancement schemes, resulting from the 'Salmonid Enhancement Programme'. Such enhancement schemes should be thoughtfully planned as properly executed schemes can significantly improve the wildlife potential of rivers, but it is important to effectively manage the installation of structures such as weirs, as they may have a negative effect on species diversity by causing excessive damming of the channel. Enhancement work should be limited to areas of river that have been extensively modified by past drainage schemes and which have lost much of their natural dynamic character.

**ACTION: Initiate discussions with DARD Fisheries Division and Environmental Protection to co-ordinate action.**

### ***Substrate Siltation***

A portion of the catchment is afforested (especially the upper catchment of the Burntollet River), with a potential risk of sediment release during forestry operations, especially clear-felling.

**ACTION: Liaise with Forest Service during felling and re-stocking programmes to minimise potential impacts (including potential eutrophication from planting and fertiliser application).**

A number of large commercial sand and gravel pits located near to the main river channel and some of its tributary rivers are potential polluters to water quality with escape or release of sand wash resulting in siltation of the riverbed downstream.

**ACTION: Monitor and control sediment input levels in tributaries and immediately downstream of sandpits.**

Where the bank and channel of the river are accessible to stock, damage to both the Salmon spawning grounds and the macrophyte community may occur. Trampling has an obvious direct impact but in some sections of the river,

trampling and poaching of the river bank and channel have caused erosion, resulting in siltation of the riverbed downstream.

**ACTION: Restrict livestock access to drinking areas only, introduce buffer strips (where currently absent) and extend elsewhere. Increase the amount of fencing along riverbanks.**

### ***Water Abstraction***

A natural flow regime is essential for the maintenance of main selection features. There are several extraction sites along the river. Proposals for further water extraction in the area will require very careful environmental assessment.

**ACTION: Review existing Water abstraction consents.**

### ***Fly-tipping***

Small-scale fly tipping has occurred in places along the river banks and in the river channel, as well as in adjacent woodland.

**ACTION: Where practical, remove dumped material from the banks, channel and adjoining woodland to prevent the build up of debris and discourage further tipping.**

### ***Alien species***

Japanese Knotweed *Fallopia japonica*, Giant Hogweed *Heracleum mantegazzianum* and Indian Balsam *Impatiens glandulifera* are present along the riverbanks of the major rivers.

**ACTION: Eradication of these is recommended in the lower Faughan area to reduce influence and prevent spread throughout catchment.**

## **WOODLAND**

### ***Grazing/Poaching/Tree barking and Browsing***

Free access to some parts of the woodland by domestic stock and feral goats is causing direct damage to the ground flora community by poaching and trampling. Grazing and bark-stripping is preventing regeneration and will increasingly cause a detrimental change in the woodland structure and composition with time. Information on current grazing levels of domestic stock within privately owned woodland is not readily available. No information on the current population of goats is available.

**ACTION: Evaluate the current domestic stocking levels of the wood and reduce numbers to a sustainable level. In some cases it may be necessary, under a management agreement, to exclude stock altogether by fencing off woodland. Undertake a census of the current feral goat populations and if necessary initiate control measures to reduce numbers to acceptable levels.**

### ***Invasion by exotics***

Exotic species are localised. They vary in the degree of impact they have and the threat they pose. Very invasive species such as Sycamore *Acer pseudoplatanus* are seen as posing a current threat. Others are not seen as an immediate threat

due to their limited occurrence (e.g. Horse Chestnut *Aesculus hippocastanum*) or slow rate of spread (e.g. Beech *Fagus sylvatica*).

**ACTION:** The most invasive species require management to control their spread, which in most cases will require the current seed source to be removed from site. Those species not posing a threat at present should be monitored and in the long-term controlled if required.

#### ***Dead Wood Removal***

Dead wood should be left *in situ* if safe or practical to do so. This provides valuable habitat for fungi, invertebrates etc. Removal of wood for fire-wood should be discouraged.

**ACTION:** Through liaison and monitoring ensure there is no removal of dead wood from the site.

#### ***Woodland Clearance/Felling***

Prevented by Notifiable Operations schedule.

**ACTION:** Undertake Site Integrity Monitoring (SIM) to ensure compliance with Notifiable Operations schedule.

#### ***Fly-tipping***

Localised fly-tipping occurs throughout the site but is extensive in a number of locations.

**ACTION:** Ensure removal of dumped material from the woods to prevent the build up of debris and discourage further fly-tipping. If fly-tipping persists, woodland areas adjacent to roads should be fenced off to prevent further occurrences.

## **EARTH SCIENCE**

***Geological sampling.*** The extent of the feature means that the site is unlikely to be damaged by responsible geological sampling.

**ACTION:** to be assessed during SIM exercises.

#### ***Nitrogen Deposition***

Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for the River Faughan & Tributaries SAC.

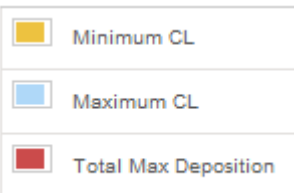
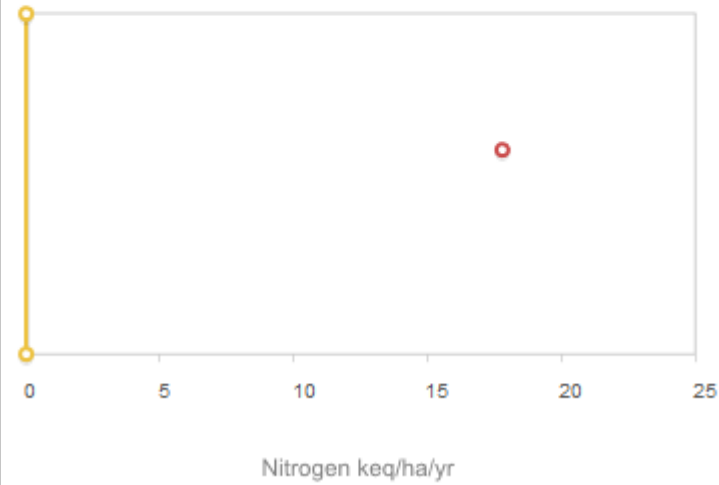
**Feature:** Salmo salar - Atlantic salmon

**Critical Load Class:** No comparable habitat with established critical load estimate available

**Critical Loads (kg N/ha/yr):** no critical loads available for this feature

**Nitrogen Deposition (kg N/ha/yr):**

Maximum: 17.8 Minimum: 6 Average: 10.6



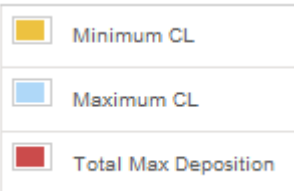
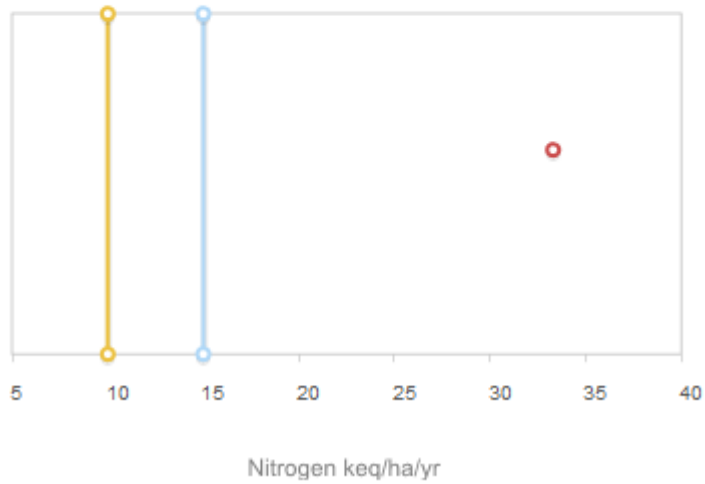
**Feature:** Old sessile oak woods with Ilex and Blechnum in the British Isles

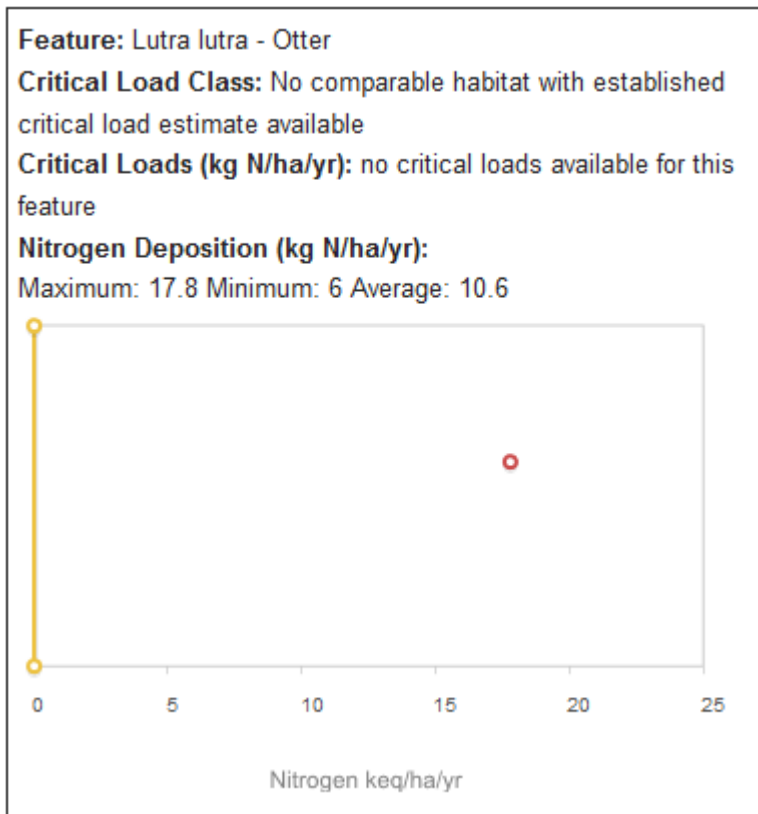
**Critical Load Class:** Acidophilous Quercus-dominated woodland

**Critical Loads (kg N/ha/yr):** 10-15

**Nitrogen Deposition (kg N/ha/yr):**

Maximum: 33.3 Minimum: 21.4 Average: 26.2





(Source: Air Pollution Information System (APIS) website- [www.apis.ac.uk](http://www.apis.ac.uk))

**ACTION:** Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

#### ***Changes to surrounding land use***

Any changes in local land-use e.g. agricultural intensification, drainage works and development) may be detrimental to the SAC.

**ACTION:** Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.



### ***Climate Change***

Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.

**ACTION: When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.**

## **12. MONITORING**

Monitoring of SACs takes place using two monitoring techniques.

**Site Integrity Monitoring (SIM)** is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the habitat).

These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

### **12.1 MONITORING SUMMARY**

#### ***1. Monitor the integrity of the site (SIM or Compliance Monitoring)***

Complete boundary survey to ensure that the boundary features, where present are still intact. Ensure that there has been no tree felling, ground or riverbed disturbance, fly-tipping or inappropriate burning carried out within the SAC boundary. Evaluating stocking densities would also be desirable, whilst a check for feral goat damage should be carried out throughout the site. The SIM should be carried out once a year.

#### ***2. Monitor the condition of the site (Condition Assessment)***

Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be

needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

### 13. REFERENCES

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European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3<sup>rd</sup> UK Habitats Directive Report.

ANNEX I

SAC Feature 1 – Atlantic salmon (*Salmo salar*)

(\* = primary attribute. One failure among primary attribute = unfavourable condition)

| Attribute            | Measure                       | Targets  | Comments  |
|----------------------|-------------------------------|--|---|
| *Population dynamics | Number                        | Stable or increasing   |   |
|                      | Adult Run                     | Total run size at least matching an agreed reference level, including a seasonal pattern of migration characteristic of the river and maintenance of the multi-sea-winter component. | Management target and Conservation limit have been set for this river by the Loughs Agency<br><br>Expectation needs to be tempered by the intrinsic ability of the river type to support salmon. Fish classification schemes operated regionally and nationally should permit an interpretation of performance. |
|                      | Juvenile population densities | These should not differ significantly from those expected for the river type/reach under conditions of high physical and chemical quality.   |   |

|                      |  |  |  |
|----------------------|--|--|--|
|                      | Biological disturbance:<br>Introductions | <p>The population should be naturally self-sustaining. There should be a presumption against stocking of salmon unless it is agreed to be necessary as an emergency interim measure to maintain population viability whilst underlying ecological problems are being addressed.</p> <p>No introduction or stocking of other species or sub-species at excessively high densities in salmon spawning and nursery areas.</p> <p>Effective screening on all fish farm intakes and discharges.</p> | <p>The nature conservation aim is to provide conditions in the river that support a healthy and natural population, achieved through habitat protection/restoration and the control of exploitation as necessary.</p> <p>Stocking represents a loss of naturalness and if successful, obscures the underlying causes of poor performance (potentially allowing these risks to perpetuate). It carries various ecological risks, including the loss of natural spawning from broodstock, competition between stocked and naturally produced individuals, disease introduction and genetic alterations to the population. For these reasons, consideration of stocking is only justifiable in cases where population viability is threatened. Stock must come from within the same catchment area.</p> <p>The presence of artificially high densities of other fish creates unacceptably high levels of predatory and competitive pressure on juvenile salmon.</p> <p>Escapes from fish farms are a form of uncontrolled introduction and should be prevented.</p> |
| *Population dynamics | Exploitation                             | All exploitation should be sustainable without compromising any components of the stock.   | Controls on exploitation should include migratory passage to the SAC within territorial waters, including estuarine and coastal net fisheries, as well as exploitation within the SAC from rod fisheries.  |
| *Physical integrity  | Disturbance of habitat                   | No artificial barriers significantly impairing adults from reaching existing and historical spawning grounds and smolts from reaching the sea.   | In all river types, artificial barriers should be made passable. Natural barriers to potentially suitable spawning areas should not be circumvented.   |

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|                 | River morphology | Maintain and where necessary restore the characteristic physical features of the river channel, banks and riparian zone.   | The characteristic channel morphology provides the diversity of water depths, current velocities and substrate types necessary to fulfil the spawning, juvenile and migratory requirements of the species. The close proximity of different habitats facilitates movement to new preferred habitats with age. Operations that widen, deepen and/or straighten the channel reduce variations in habitat. New operations that would have this impact are not acceptable within the SAC, whilst restoration <i>may/will</i> be needed in some reaches.  |
|                 | River Substrate  | Clean gravels should dominate channels.<br><br><10% fines in top 30cm of spawning gravels  | Elevated levels of fines can interfere with egg and fry survival through suffocation of eggs and loss of interstitial refuges for fry.<br><br>Sources of fines include run-off from arable land, land (especially banks) trampled by livestock, sewage and industrial discharges.  |
| *Water quantity | Flow             | Flow regime should be characteristic of the river. As a guideline, at least 90% of the naturalised daily mean flow should remain in the river throughout the year<br><br>Existing flow criteria already laid down for salmon should also be complied with. | River flow affects a range of habitat factors of critical importance to designated interest features, including current velocity, water depth, wetted area, substrate quality, dissolved oxygen levels and water temperature. The maintenance of both flushing flows and baseflows, based on natural hydrological processes, is vital. Detailed investigations of habitat-flow relationships may indicate that a more or less stringent threshold may be appropriate for a specified reach; however, a precautionary approach would need to be taken to the use of less stringent values. Naturalised flow is defined as the flow in the absence of abstractions and discharges. The availability and reliability of data is patchy - long-term gauged data can be used until adequate naturalised data become available, although the impact of abstractions on historical flow records should be considered. |

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|-----------------|--|--|---|
| *Water quality: | Biological class. Environmental Protection's General Quality Assessment scheme. Assess every year. | 'A'  | Generally, water quality should not be injurious to any life stage. A wide range of water quality parameters can affect the status of interest features, but standard biological monitoring techniques provide a reasonably integrated picture in relation to many parameters. The river quality classifications used in all parts of the UK have a biological component. All classified reaches within the site that contain, or should contain, the interest feature under conditions of high environmental quality should comply with the targets given. |
|                 | Ecosystem Class. Environmental Protection's General Quality Assessment scheme. Assess every year   | "A"  | The River Ecosystem Classification 1995 sets standards for dissolved oxygen, biochemical oxygen demand, total and un-ionised ammonia, pH, copper and zinc. It therefore covers a number of water quality parameters that can cause problems within river systems. All classified reaches within the site that should contain the interest feature under conditions of high environmental quality should comply with the targets given.  |
|                 | Soluble Reactive Phosphorus  | Targets should be set in relation to river/reach type(s and should be near background levels)<br><br>Annual mean <0.02mg/l - upland watercourses,<br><0.06mg/l mid-altitude watercourses on hard substrates and <0.2mg/l interim target for lowland rivers on clay substrates and large alluvial rivers. | The target of 25mgL <sup>-1</sup> is based on the EC Freshwater Fish Directive. A more precautionary figure has been used for salmon to help protect substrates used for salmon spawning.<br><br>The mg/l used here are indicative values for rivers in England. The equivalent for Northern Ireland will have to be defined  |
|                 | Pollution  | None   | Pollutants such as silage or sheep dip can cause extreme mortality  |

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|  | Suspended solids | Annual mean <10mgL <sup>-1</sup> (spawning & nursery grounds)<br>Annual mean <25mg L <sup>-1</sup> (migratory passage) | Elevated levels of suspended solids can clog the respiratory structures of salmon. |
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**SAC Feature 2 – Old Sessile Oak Woodlands with *Ilex* and *Blechnum* in the British Isles**

(\* = primary attribute. One failure among primary attribute = unfavourable condition)

| Attribute   | Targets   | Method of Assessment  | Comments  |
|---|---|---|---|
| * Area of Oakwood   | Maintain the extent of Oakwood at 138.7ha.  | Visual estimate in 10x10m plots <u>and</u> across the extent of the woodland using a combination of aerial photographs, SIM and Condition Assessment structured walk. | Loss due to natural processes (e.g. wind-throw during extreme storm) is acceptable.   |
| Oakwood community diversity                               | Maintain presence of woodland communities, W11, W17, W9 & W7 as established at base line survey.                            | Visual estimate in 10x10m plots   |   |
| Presence of associated features and semi-natural habitats | Maintain existing associated features and semi-natural habitats (wet/bog woodland, wet heath, semi-natural grasslands etc.) | Visual estimate in 10x10m plots <u>and</u> across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.     | Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost.<br>Note: Loss of associated habitats to Oakwood may be desirable in some instances. |
| * Structural variation (% cover)                          | Mean canopy cover greater than 70%  | Estimate within the visual vicinity of the monitoring plots.  | A well structured wood should have a well developed canopy and shrub layer.   |



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|   | Mean shrub cover should be maintained between 20 - 50%   | Estimate within the visual vicinity of the monitoring plots. |  |
|   | Maintain current levels of standard variation within reasonable limits for field, herb and moss cover. | Visual estimate in 10x10m plots.                             | At least the current level of structural diversity should be maintained for field cover, herb cover and moss cover. Limits to be set for each site after the baseline survey.<br>Note: <i>L. sylvatica</i> may be dominant in many W11 oakwood communities. The percentage cover of this species may affect Oak regeneration, but more information is required before that assumption can be made.   |
|   | Where present assess cover of <i>Luzula sylvatica</i> .  | Visual estimate in 10x10m plots.                             |  |
|   |  | Visual estimate in 10x10m plots.                             |  |
|   |  | Visual estimate in 10x10m plots.                             |  |
|   | Mean cover of bare ground should be less than 5%<br>Bare ground does not include boulders or rocks.    | Visual estimate in 10x10m plots.                             |  |
| * Age-class variation (DAFOR)                       | Young trees (5- 20cm diameter) at least occasional in 25% of plots                                     | Estimate within the visual vicinity of the monitoring plots. | Age-class structure should be appropriate to the site, its history and management; however, in general, there should be a spread of different age-classes present, including young and over-mature trees.<br>However, on very steep sided slopes with shallow soils, over-mature trees are unlikely to occur as larger trees are likely to fall over before becoming over - mature.<br>Note, that in many cases achieving the set targets is a long term aim. However, providing the correct management practices are in place, this attribute may be recorded as Unfavourable - recovering. |
|   | Mature trees (20 - 75cm diameter) at least frequent in 75% of plots                                    | Estimate within the visual vicinity of the monitoring plots. |  |
|   | Over-mature trees (>75cm diameter) at least present in 10% of plots                                    | Estimate within the visual vicinity of the monitoring plots. |  |
| * Presence of standing and fallen dead wood (DAFOR) | Standing dead wood at least occasional in 70% of plots and at least frequent in 30% of                 | Visual estimate in 10x10m plots.                             |  |

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|   | plots.  |                                  |   |
|   | Fallen dead wood at least occasional in 70% of plots and at least frequent in 30% of plots.         | Visual estimate in 10x10m plots. |   |
| * Presence of epiphytes and climbers (DAFOR)  | Epiphytes and climbers at least occasional in 70% of plots and at least frequent in 30% of plots.   | Visual estimate in 10x10m plots. | Epiphytes and climbers are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.   |
| * Presence of epiphytic bryophytes and lichens (DAFOR)  | Epiphytic bryophytes and lichens at least occasional in 70% of plots and frequent in 30% of plots.  | Visual estimate in 10x10m plots. | Epiphytic bryophytes and lichens are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.   |
| * Regeneration potential (DAFOR)  | Regeneration of Oak seedlings.  | Visual estimate in 10x10m plots. | The general aim is for the successful establishment of young stems (i.e. seedlings growing through to saplings to young trees) in gaps or on the edge of a stand at sufficient density to maintain canopy density over a 10 year period.<br><br>Regeneration of Oak in particular is likely to be slow and sporadic; in some stands, there may currently not be sufficient and/or extensive enough gaps in the canopy for oak to regenerate. This does not necessarily indicate unfavourable condition. |
| Maintain current levels of native tree regeneration within reasonable limits for the current structure of the Oak woodland. | Regeneration of Oak saplings  | Visual estimate in 10x10m plots. |   |
|   | Regeneration of other native seedlings.   | Visual estimate in 10x10m plots. |   |
|   | Regeneration of other native saplings.  | Visual estimate in 10x10m plots. |   |
| * Cover of non-native species (all layers) (presence/absence)   | Non-native invasive canopy species should be present in less than 20% of plots, but never frequent. | Visual estimate in 10x10m plots. | The canopy of the Oak woodland should be largely comprised of Oak trees. Non-native species are undesirable in the canopy, particularly invasive species such as Sycamore.  |
|   | Non-native invasive shrub   | Visual estimate in               |   |

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|  | species should be present in less than 20% of plots, but never frequent.   | 10x10m plots.                    | In addition, non-native invasive species in any one layer is un-desirable.<br>Note that non-invasive species are not viewed as a significant threat, and a low level of occurrence may be acceptable.  |
|  | Non-native invasive canopy species seedlings/saplings should be present in less than 20% of plots, but never frequent.   | Visual estimate in 10x10m plots. |  |
|  | Non-native invasive ground flora species should be present in less than 20% of plots, but never frequent.  | Visual estimate in 10x10m plots. |  |
| *Frequency and cover of eutrophication indicators: (DAFOR) | No one negative species no more than occasional throughout the wood and/or singly or together comprising more than 5% cover.<br><i>Galium aparine, Urtica dioica, Heracleum spp, Epilobium spp. Rumex obtusifolius</i><br><br>No more than occasional is equivalent to less than 40% occurrence in recorded plots. | Visual estimate in 10x10m plots. |  |
| * Cover of <i>Pteridium</i> (% cover)                      | The mean cover of <i>Pteridium</i> for the wood should be less than 10%.   | Visual estimate in 10x10m plots. |  |
| * Cover of grasses (non-woodland species) (% cover)        | The mean cover of grass for the wood should be less than 10%.  | Visual estimate in 10x10m plots. | A high cover of grasses indicates past and/or present grazing. Where heavy grazing has been a past management practice, the natural woodland ground flora will take a considerable time to re-establish (time limits for restoration currently unknown). However, providing the grazing pressure |

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|   |  |   | has been addressed, and there is evidence that woodland flora is beginning to re-appear, this attribute may be recorded as unfavourable, recovering.              |
| Management /Disturbance   |  |   |   |
| * Grazing (DAFOR)   | Grazing should be recorded as no more than occasional over 80% of plots.                                 | Estimate within the visual vicinity of the monitoring plots.  | Grazing by domestic stock, where it occurs should be light resulting in minimal damage to the ground flora through poaching and damage to seedlings and saplings. |
| * Poaching by cattle (DAFOR)  | Poaching should be absent, or recorded in less than 20% of plots and frequent in less than 10% of plots. | Visual estimate in 10x10m plots.  |   |
| *Frequency of recent goat damage (1-2 years) (DAFOR)                    | Recent goat damage should be absent, or recorded in less than 20% of plots.                              | Visual estimate in 10x10m plots.  |   |
| *Frequency of damage to seedlings/saplings (DAFOR)                      | Damage to seedling/saplings should be absent, or recorded in less than 20% of plots.                     | Visual estimate in 10x10m plots.  |   |
| Frequency of felling/coppicing (within 6 year monitoring cycle) (DAFOR) | There should be no felling or coppicing of native trees or shrubs.                                       | Visual estimate in 10x10m plots <u>and</u> across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk. | Felling non-native species as part of management for conservation is acceptable.  |
| Maintain the diversity of woodland species throughout the wood.         | Record the % of plots with each of the acid woodland indicators (W11 & W17 communities)                  | Visual estimate in 10x10m plots.  | Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these              |

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|  | <p>listed below:-<br/> <i>Vaccinium myrtillus</i>,<br/> <i>Blechnum spicant</i>,<br/> <i>Dicranum spp.</i>,<br/> <i>Luzula pilosa</i>,<br/> <i>Rhytidiadelphus loreus</i></p>  |  | <p>woodland communities should be maintained. However, the W11 &amp; W17 communities should dominate the woodland.</p>   |
| <p>Maintain the diversity of woodland species throughout the wood.</p> | <p>Record the % of plots with each of the base-rich woodland indicators (W9 community) listed below:-<br/> <i>Sanicla europea</i>,<br/> <i>Geum urbanum</i>,<br/> <i>Polystichum setiferum</i>,<br/> <i>Aneomne nemorosa</i>,<br/> <i>Primula vulgaris</i>.</p>              | <p>Visual estimate in 10x10m plots.</p>  | <p>Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained.</p> |
| <p>Maintain the diversity of woodland species throughout the wood.</p> | <p>Record the % of plots with each of the flushed woodland indicators (W7 community) listed below:-<br/> <i>Carex remota</i>,<br/> <i>Ranunculus repens</i>,<br/> <i>Chrysosplenium oppositifolium</i>,<br/> <i>Filipendula ulmaria</i>,<br/> <i>Lysimachia nemorum</i>.</p> | <p>Visual estimate in 10x10m plots.</p>  | <p>Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained.</p> |
| <p>Presence of rare or scarce species specific to the site.</p>        | <p>Maintain current levels of standard variation within reasonable limits for rare and notable species.<br/> If these species are not recorded on any one visit, it does not automatically make the site unfavourable.</p>   | <p>Name the species at least present along the length of the Condition Assessment structured walk.</p> |  |

Frequency -

1-20% = Rare

21-40% = Occasional

41- 60% = Frequent

> 60% = Constant

### SAC Feature 3 – Otter *Lutra lutra*

\*=primary attribute. One failure among primary attribute=unfavourable condition.

| Attribute                        | Measure  | Target  | Notes   |
|----------------------------------|--|---|---|
| <b>Presence of otters</b>        | Presence of one or more of the following signs within the site:<br>Positive identification of otter spraint, footprints, tracks, paths, lying-up sites or feeding signs. | Signs of otters found at least once per year  | Use data from other surveys or Ulster Museum, if available  |
|                                  | Sightings of otters.   |   |   |
|                                  | Positive identification of holt(s).  |   |   |
| <b>Bankside/ Waterside cover</b> | Presence of cover:<br>Mature trees, woodland, scrub, other tall bankside vegetation, reed and sedge beds.  | No overall permanent decrease   | Some change acceptable as long as it is appropriately mitigated   |
| Water quality                    | EP water quality scale   | Water quality should be at least category A or B, according to EP guidelines, with no pollution incidents                     | Refer to Environment Protection for data  |
| Food Sources                     | Assessment of fish stocks and other food sources (e.g.amphibians)  | Fish stocks appropriate to the nutrient status of the river, with no significant decline in fish biomass or species diversity | Refer to appropriate Agency for sample data if available<br>(This information may need to be inferred from the water quality category). |
| Disturbance                      | Extent of public access to river   | No significant change to river or bankside usage; no significant  |   |

| Attribute      | Measure               | Target  | Notes   |
|----------------|-----------------------|---|---|
|                |                       | development   |   |
| Flow rate      | Mean annual flow rate | No reduction attributable to increased abstraction. | Refer to data from Rivers Agency if available |
| Site integrity | Total area            | No reduction or fragmentation of area               |   |