

Irish Water Report

Natura Impact Statement as part of the St. Johnston Waste Water
Discharge Licence Application – D0538-01

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Introduction

This Natura Impact Statement provides an Appropriate Assessment (AA) of the existing waste water discharges from the St. Johnston agglomeration, located in the townland of St. Johnston, Co. Donegal, for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007), as amended. It assesses whether the discharges from the St. Johnston agglomeration, alone or in combination with other plans and projects, are likely to have significant effects on a European Site(s) in view of best scientific knowledge and the conservation objectives of the site(s). European Sites are those identified as sites of European Community importance designated as Special Areas of Conservation under the Habitats Directive or as Special Protection Areas under the Birds Directive.

This report follows the guidance for AA published by the Environmental Protection Agency (EPA) 'Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007)' (EPA, 2009); and takes account of the Department of the Environment, Heritage and Local Government guidelines 'Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities' (DoEHLG, 2009) and Circular L8/08 'Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments' (DoEHLG, 2008).

This Natura Impact Statement was completed by Nicholas O'Dwyer Ltd. on behalf of Irish Water.

Legislative Context

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as "The Habitats Directive", provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/ECC) as codified by Directive 2009/147/EC.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment (AA):

Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In 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(4) states:

If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

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Methodology

Guidance Followed

Both EU and national guidance exists in relation to Member States fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in relation to this AA has had regard to the following guidance:

- Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007). Environmental Protection Agency, (EPA, 2009).
- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of Environment, Heritage and Local Government, (DoEHLG, 2010).
- Circular L8/08 – Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments. Department of Environment, Heritage and Local Government, (DoEHLG, 2008).
- Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg, (EC, 2000a).
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg, (EC, 2000b).
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2001).
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission. Office for Official Publications of the European Communities, Luxembourg, (EC, 2007).
- Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities, Luxembourg (EC, 2006).
- European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No.477 of 2011).
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013).

Stages Involved in the Appropriate Assessment Process

Stage 1: Screening/Test of Significance

This process identifies whether the St. Johnston discharges located at St. Johnston, Co. Donegal (National Grid Ref. 234879E, 409790N) are directly connected to or necessary for the management of a European Site(s). This stage identifies whether the discharges are likely to have significant impacts upon the above European Sites either alone or in combination with other projects or plans.

The output from this stage is a determination for each European Site of not significant, significant, potentially significant, or uncertain effects. The latter three determinations will cause that site to be brought forward to Stage 2 Appropriate Assessment.

Stage 2: Appropriate Assessment

This stage considers the impact of the waste water discharges from the St. Johnston agglomeration on the integrity of a European Site(s), either alone or in combination with other projects or plans, with respect to (1) the site's conservation objectives and (2) the site's structure and function and its overall integrity. Where adverse impacts are identified, mitigation measures to negate those impacts are determined.

The output from this stage is a Natura Impact Statement (NIS). This document must include sufficient information for the EPA to carry out the Appropriate Assessment. If the assessment is negative, *i.e.* adverse effects on the integrity of a site cannot be excluded then the process must consider alternatives (Stage 3) or proceed to Stage 4.

Stage 3: Assessment of Alternatives

This process examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European Site. This assessment may be carried out concurrently with Stage 2 in order to find the most appropriate solution. If no alternatives exist or all alternatives would result in negative impacts to the integrity of the European sites then the process either moves to Stage 4 or the project is abandoned.

Stage 4: Assessment Where Adverse Impacts Remain

This process is an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

Field Walkover Surveys

A field walkover survey was undertaken by Ecologist Tony Nagle on the 8th December 2014 to identify the potential for qualifying species and habitats in the surrounding environs of the St. Johnston discharge locations.

Consultation

The EPA, as the competent authority, will seek NPWS advice as may be required in reaching their decision, and the NPWS can only communicate with the applicant (*i.e.* Irish Water) on request from the competent authority (*i.e.* the EPA), when the formal application process to the competent authority has already commenced.

Stage 1: Screening

Screening for Appropriate Assessment was undertaken by the Environmental Protection Agency who determined that an Appropriate Assessment of the existing St. Johnston discharges is required because the *“contribution from the St. Johnston discharges, in combination with other activities within the catchment, may have implications for the qualifying interests of the SACs. Indirect impacts on the qualifying interests may arise as a consequence. “*

The following European Sites have been identified by the EPA as requiring assessment:

- River Finn SAC (IRL SAC Site Code: 002301);
- River Foyle and Tributaries SAC (EU SAC Site Code: UK0030320).

Therefore, applying the *“Precautionary Principle”* and in accordance with Article 6(3) of the Habitats Directive, the current discharges from the St. Johnston agglomeration will be brought forward for a Stage 2 Appropriate Assessment.

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Stage 2: Appropriate Assessment

River Finn SAC and River Foyle and Tributaries SAC, which have been determined as requiring Appropriate Assessment, are described in the following section below. All the potential impacts resulting from the St. Johnston discharges are detailed in relation to the conservation objectives of these designated sites.

Description of the Project

St. Johnston is located in East Donegal on the border with county Tyrone. The town is situated on the left bank of the River Foyle on the regional road R236, between Derry and Lifford. The town is approximately 12 km south of Derry city. The surrounding environment is characterised by open farmland/agriculture.

St. Johnston agglomeration consists of two collection networks serving the Main Street area of the town. The current population equivalent discharging to the network is 642 PE. There is no treatment of this wastewater within the St. Johnston catchment.

The primary untreated effluent is discharged directly into the Johnston River, eastwards from the south eastern edge of the town (NGR 234880E, 409790N). There are four secondary discharge points as follows:

- West of village, above Flemings steel works via septic tank to river (NGR 234529E, 409926N).
- Ard Baithin Council Housing Scheme via septic tank to river (NGR 234841E, 409865N).
- Cois Abhainn Housing Scheme via package plant to percolation area (NGR 234559E, 409371N).
- Pairc Na Traenach via package plant to percolation area (NGR 234929E, 409845N).

St. Johnston wastewater quality is not currently sampled. For the purposes of this report Irish Water have assigned typical untreated effluent values, as detailed in Table 1.0 below.

Table 1.0: Assumed St. Johnston Untreated Effluent Values (mg/l) (Source: Irish Water)

Parameter	Effluent Load (mg/l)
BOD	240
Ammonia	40
Total Phosphorous	10

Description of the Receiving Environment and Monitoring Results

The receiving water for the effluent from the St. Johnston agglomeration is the Johnston River. The River flows eastwards and joins the River Foyle and then flows towards Lough Foyle. The River Foyle is designated as two Natura 2000 sites; the River Finn SAC and the River Foyle and Tributaries SAC. The primary discharge point is immediately adjacent to the River Finn SAC and approximately 0.7 km upstream of the River Foyle and Tributaries SAC.

Results from ambient monitoring undertaken by Donegal Co. Co. upstream and downstream of the primary discharge location for 2009 are shown in Table 2.0 below.

Table 2.0: Average Monitoring Data Upstream and Downstream of Primary Discharge Location (Source: WWDLA)

Parameter	EQS*	Upstream	Downstream
BOD	≤2.6	5.37	6.59
Ammonia	≤0.14	0.165	0.247
Orthophosphate	≤0.075	0.051	0.056

*European Communities Environmental Objectives (Surface Waters) Regulations 2009, S.I. No. 272 of 2009 (95%ile standards presented).

It is important to note that the above sampling is from 2009. The EPA biological water quality monitoring programme identified the Johnston River as Q3, poor status in 2008. However, in 2013 the EPA monitoring programme recorded the water quality of the Johnston River to be Q2, bad status, which indicates seriously pollution (abundant sewage fungus was also noted during the 2013 monitoring programme).

The WFD status of the Johnston River is “*bad*” and it is classified as “*at risk*” of not achieving good status by 2015. The overall WFD objective of the waterbody is to “*restore*” to good status by 2021.

The Johnston River flows into the River Foyle approximately 0.3 km from the primary discharge point. The River Foyle is tidal along its entire length up to the confluence with the River Finn.

The Finn/Derg/Foyle Water Management Unit Action Plan, of which the Johnston River is contained, noted the Johnston River status as “*bad*” based on the impact by sewage discharge. The St. Johnston point source discharge is identified as a risk in the Finn/Derg/Foyle Water Management Unit Action Plan based on insufficient treatment capacity in St. Johnston.

Waste Assimilative Capacity

Table 3.0 summarises the assimilative capacity calculations which are based on the current estimated loading of 642 PE (Source: Irish Water), 95%ile river flow (0.045 m³/s) (Source: EPA Hydrometric Data System HydroTool) and water quality standards for River waterbodies in the European Communities Environmental Objectives (Surface Water) Regulations, 2009 (S.I. No. 272 of 2009).

The WAC calculations carried out for BOD, Ortho-phosphate and Ammonia are based on the Irish Water assumed effluent data (Table 1.0).

Assimilative capacity calculations have been completed on both the actual background concentrations and the EPA “*notionally clean river*” concentrations.

Table 3.0: Johnston River assimilative capacity of St. Johnston wastewater (IW estimated 642 PE), using actual background concentrations and notionally clean river concentrations

Parameter		Background (mg/l)	Predicted downstream quality (mg/l)	EQS* (mg/l)
BOD	Actual Background	5.37	13.97	≤2.6
	Notionally Clean	0.26	8.86	
Ammonia	Actual Background	0.165	1.598	≤0.14
	Notionally Clean	0.008	1.441	
Orthophosphate	Actual Background	0.051	0.409	≤0.075
	Notionally Clean	0.005	0.363	

The Waste Assimilative Capacity calculations tabled above indicate that there is no assimilative capacity in the Johnston River for BOD, Ammonia or Ortho-Phosphate based on the actual upstream concentrations (2009) and using the “*Notionally Clean River*” approach.

Field Walkover Survey

A site walkover survey was conducted on the 8th December 2014 to identify the potential for qualifying species and habitats in the surrounding environs of the primary discharge location and the other discharges to the river via septic tanks.

Three discharge sites were visited to identify the impacts of the effluent discharges on the Johnston River:

- Site 1 (234880E, 409790N) on the south eastern side of St. Johnston (Primary Discharge Point direct to River).
- Site 2 (234529E, 409926N) on the north western side of St. Johnston (via septic tank to River).
- Site 3 (234841E, 409865N) on the eastern side of St. Johnston (via septic tank to River).

Site 1 is located at the south eastern edge of the town close to human dwellings. Evidence of domestic sewerage was clearly visible at the discharge location. Tidal influences are more evident here as the Foyle estuary is located approximately 440 m downstream. The Johnston River meanders through an area of Reed and Willow swamp before its confluence with the Foyle. The vegetation is dominated by Common Reed and Willow but species such as Buttercup, Common Nettle, Bramble, Knapweed and Broad-leaved Dock occur and Japanese knotweed is also present.

Three aquatic bird species were recorded in small numbers downstream (up to 250 m) from the outfall: Mallard (1), Grey Heron (1), Moorhen (2). These species are not as sensitive as the Dipper to water pollution. Other non-aquatic bird species recorded at or downstream of the outfall were: Dunnock (2), Robin (1), Blackbird (1), Wren (2), Long-tailed Tit (4), Chaffinch (3), Bullfinch (1) and House Sparrow (2).

Site 2 is located upstream of Flemings steel works and the discharge point is situated on the edge of a privately owned garden approximately 30 m west of the road bridge. The effluent

discharge was clearly visible as a grey plume of discoloured water and sewage fungus was also evident in the area. The river appeared to be clean upstream of the sewage outfall, however, there was much plastic debris attached to the bankside vegetation, which would suggest that dumping occurs upstream.

This site is on the edge of the town and the surrounding landscape is dominated by improved pasture. No aquatic vegetation was recorded in the river but this may be as a result of over-shadowing bankside vegetation which consisted of Sycamore, Ash, Hawthorn, Elder, Sitka Spruce and a substantial growth of the non-native and invasive Snowberry. The ground vegetation is dominated by Ivy, Common Nettle, Bramble, Wood Sedge, Hart's tongue and Soft shield fern.

Four bird species were noted at this site: Grey Wagtail (1), Robin (1), Wren (2) and Long-tailed Tit (5) but only one (Grey Wagtail) can be regarded as aquatic. No evidence was found to suggest that Dippers are present in this section of the river in spite of the presence of apparently good habitat: riffles, glades and a stonework bridge. The Dipper is a useful bio-indicator and its presence on a river is often an indication of good water quality and studies in Italy have shown that Dippers were absent from 93.7% of polluted or strongly polluted streams (Sorace, 2002). Dippers depend on well oxygenated and unpolluted watercourses as this habitat is home to their main prey species, aquatic invertebrates (Copland, 2007). EPA biological water quality monitoring in 2013 revealed a Q-value of Q-2 (heavily polluted) and this indicates the absence (or extreme scarcity) of several invertebrate groups that are important to Dippers (e.g. stoneflies, mayflies and caddisflies). These invertebrates are also significant food sources for juvenile Salmon (Hendry & Cragg-Hine, 2003).

Site 3 is located close to the Ard Baithin Council Housing Scheme. The river is more slow-flowing and tidal in this area, and the sewage effluent is again clearly visible and noticeable by discolouration of the river in the vicinity of the outfall. Evidence of domestic sewerage was also clearly visible at this discharge location.

The vegetation at this site consists of Willow, Ash, Sycamore and Alder. The area surrounding the outfall is heavily infested by the invasive Japanese knotweed. Other plant species noted in the area include Ivy, Bramble and Reed Canary-grass.

Four non-aquatic bird species were noted at this site: Robin (2), Wren (2), Blue tit (2) and Chaffinch (3).

Description of the Natura 2000 Site Affected

River Finn SAC

This site comprises almost the entire freshwater element of the River Finn and its tributaries the Corlacky, the Reelan sub-catchment, the Sruhamboy, Elatagh, Cummirk and Glashagh, and also includes Lough Finn, where the river rises. The spawning grounds at the headwaters of the Mourne and Derg Rivers, Loughs Derg and Belshade and the tidal stretch of the Foyle north of Lifford to the border are also part of the site.

Upland blanket bog occurs throughout much of the upland area of the site along the edges of the river. However, more extensive examples are found at Tullytresna and in the Owendoo

/Cloghervaddy bogs. Pool and hummock systems are a feature of the flatter areas. A valley bog fills the low lying areas to the north-east of Lough Finn. Mossy hummocks occur in the wetter areas. Transition mires (or quaking bogs or scraws) occur at several locations, usually at the interface between bog and lake or stream. Wet heath is associated with the blanket bog throughout the site and is found on the shallow peats and better drained slopes.

Lowland oligotrophic lakes are found at Loughs Finn, Belshade and Derg, as well as in many of the smaller lakes within the site. Lough Derg is a large oligotrophic lake situated north of Pettigo. An extensive area of blanket bogs and conifer plantations make up the lake catchment.

On the tidal stretches within the site the main habitats are the river itself, mudflats and the extensive reedbeds that have colonised the former mudflats. The habitats found are typically freshwater in nature. Other habitats present within the site include a fringe of wet grassland/marsh along some river stretches.

There are areas of scrub surrounding parts of the lake margins, along the channels and on the ungrazed islands. The rare Narrow-leaved Helleborine (*Cephalanthera longifolia*) occurs on the shores of Lough Derg. This species is listed in the Irish Red Data Book and is protected under the Flora (Protection) Order, 1999.

Small pockets of conifer plantation, close to the lakes and along the strip both sides of the rivers, are included in the site.

Lough Finn holds a population of Arctic Char (*Salvelinus alpinus*). This fish is a relative of salmon and trout, and represents an arctic-alpine element in the Irish fauna. In Ireland this fish occurs only in a few cold, stony, oligotrophic lakes. It is listed in the Irish Red Data Book as threatened. The Arctic Char in Lough Finn are unusual in that they are dwarfed. These only occur in one other lake in Ireland, Lough Coornasahan, Co. Kerry and they are therefore of national importance. Arctic Char are very sensitive to water quality and therefore changes in the catchment such as afforestation should be avoided to maintain this population. Lough Derg is also important for Arctic Char, though the species was last recorded there in 1990/91.

The Finn system is one of Ireland's premier salmon waters. Although the Atlantic Salmon (*Salmo salar*) is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the E.U. Habitats Directive. The Finn is important in an international context in that its populations of spring salmon appear to be stable, while they are declining in many areas of Ireland and Europe.

The site is also important for Otter (*Lutra lutra*), another species listed on Annex II of the E.U. Habitats Directive. It is widespread throughout the system. In addition, the site also supports many more of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include the Badger and the Irish Hare. Common Frog, another Red Data Book species, also occurs within the site.

Golden Plover, Peregrine and Merlin, threatened species listed on Annex I of the E.U. Birds Directive, breed in the upland areas of the site. The Red Listed species Red Grouse occurs on the site, while the scarce Ring Ouzel, another Red List species, is also known to occur.

The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river. The River Finn is a designated Salmonid Water under the E.U. Freshwater Fish Directive.

Afforestation is ongoing, particularly along the western sections of the site adjacent to the headwaters and around the shores of Lough Derg. Forestry poses a threat in that sedimentation and acidification occurs. Sedimentation can cover the gravel beds resulting in a loss of suitable spawning grounds.

Overall, the site supports important populations of a number of species listed on Annex II of the E.U. Habitats Directive, and several habitats listed on Annex I of this Directive, as well as examples of other important habitats. Blanket bog is a rare habitat type in Europe and receives priority status on Annex I of the E.U. Habitats Directive. The overall diversity and ecological value of the site is increased by the presence of populations of several rare or threatened birds, mammals, fish and plants.

River Foyle and Tributaries SAC

The River Foyle and Tributaries was declared an SAC because of the physical features of the river and its associated riverine flora and fauna. It 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. The River Foyle and Tributaries SAC includes that part of the River Finn which lies within Northern Ireland, the River Mourne and its tributary the River Strule (up to its confluence with the Owenkillew River) and the River Derg, along with two of its sub-tributaries, the Mourne Beg River and the Glendergan River.

The river is notable for the physical diversity and naturalness of the banks and channels, especially in the upper reaches and the richness of its plant and animal communities. The river has the largest population of Atlantic salmon *Salmo salar* in Northern Ireland, with around 15% of the estimated spawning numbers. The majority of the salmon returning are grilse (single wintering salmon), with a smaller but important number of spring salmon (multi-wintering salmon) also occurring. Research has indicated that individual sub-catchments within the system support genetically distinct salmon populations.

The River Foyle and Tributaries system is one of the most important salmon rivers in the British Isles, with an estimated 40,000 returning salmon entering the river system each year. Individual sub-catchments support genetically distinct salmon populations. As well as salmonids, the fast flowing waters support Stone Loach, Minnow, Eel, Three-spined Stickleback, Brook Lamprey and spawning River Lamprey. Where the flow is less dynamic, Roach, Perch, Common Bream, Pike and Rudd occur, especially in deeper pools, into which Sea Lamprey migrate to spawn.

Downstream sections contain euryhaline marine species such as Mullet and Flounder, and there are records of both Allis Shad and Twaite Shad.

Predatory birds such as Red-breasted Merganser are regularly seen fishing in the larger channels. Otter are found throughout the river system. Small populations of the now rare Freshwater Pearl Mussel were present in the Mourne River until recently.

The area is also important as a river habitat. In their upper catchments, the tributaries are all fast-flowing spate rivers with dynamic flow regimes, characterised by sequences of rapid, riffle and run. Although the banks have been modified, the channel is natural and composed of large cobble substrate with scattered boulders and sandy marginal deposits, while cobble side and point bars and discrete sand deposits are common features. At the upper end of the River Derg and its two tributaries, the aquatic flora reflects the highly acidic character of the water.

Downstream, beds of Stream Water-crowfoot occur where the flow is less dynamic. Downstream of Strabane, the River Foyle is slow flowing and subject to tidal influences. The channel is extremely limited in aquatic plants, particularly in the more saline areas where marine algae make up the main component. Sheltered river banks in this section have a band of tall herb-fen dominated by Reed Canary-grass, with Marsh-marigold, Hedge Bindweed, Great Willowherb, Meadowsweet, Purple-Loosestrife and Common Valerian. Willow are scattered throughout. The more exposed rocky shores towards the downstream limit of the area support a higher proportion of maritime plant species including Grey Club-rush and Sea Club-rush, in addition to Sea Arrowgrass, English Scurvygrass and Sea Aster.

Semi-natural woodland occurs along some sections of river, particularly the steep slopes of the Mourne River valley. Marginal woodland helps to stabilise the river bank, regulates local climate and roots create a refuge for fish. Many invertebrates associated with the woodland provide food for fish. The wood is predominantly acidic in nature with a mixed canopy of Sessile Oak, Downy Birch, Hazel, Ash, Alder and Willows. Shrubs include Hawthorn, Holly and Rowan. Where the wood is less disturbed, species include Wood-sorrel, Herb Robert, Pignut, Common Dog-violet and Great Woodrush growing with taller ferns and thickets of Bramble.

The River Foyle and Tributaries SAC contains and supports habitat types and species identified respectively on Annexes I and II of the Habitats Directive as being of Community Interest and whose conservation requires the designation of SACs.

It has been listed as an SAC because of its populations of Salmon and Otter, and because it also encompasses watercourses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation. The following Annex II species are also known to be present within this site; Sea Lamprey, Brook Lamprey, River Lamprey and Freshwater Pearl Mussel.

Description of the Conservation Interests of the SACs

Annex I Habitats

The qualifying habitats of the River Finn SAC are listed below (* = priority):

- [3110] Oligotrophic Waters containing very few minerals
- [4010] Wet Heath
- [7130] Blanket Bogs (Active)*
- [7140] Transition Mires

The qualifying habitats of the River Foyle and Tributaries SAC are as follows:

- [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation

Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110]
Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) occurs in soft water, nutrient poor lakes frequently associated with acid bedrock (notably granite and old red sandstone) overlain by peatland. The habitat is best developed on more gently sloping lake beds, over variable substrata, and along sheltered shorelines. It is dominated by species with an isoetid growth form, namely *Isoetes lacustris*, *Isoetes echinospora*, *Littorella uniflora*, *Lobelia dortmanna* and *Eriocaulon aquaticum*. *Juncus bulbosus*, *Myriophyllum alterniflorum*, *Potamogeton polygonifolius* and *Sparganium angustifolium* also frequently occur, as does *Deschampsia setacea* in Connemara. Ireland is a stronghold for the habitat, given the large number of lakes in which it occurs and its widespread distribution. Even in Ireland, however, the oligotrophic waters containing very few minerals habitat is under significant pressure from eutrophication, peatland drainage and, to a lesser extent, acidification.

This habitat type is surface water and ground water dependent and is highly sensitive to nutrient enrichment P (dissolved and particulate) and possibly N (diffuse and point source nutrient pollution). The overall assessment of conservation status is considered to be bad (U2) with an overall declining (-) trend in Conservation Status.

Northern Atlantic wet heaths with Erica tetralix [4010]

Wet heath is a highly variable habitat that is intermediate in many regards between dry heath and blanket bog, generally occurring on gently sloping, poorly draining ground on shallow or intermediate peat depths (typically less than 50 cm deep). It is dominated by a mixture of *Molinia caerulea*, *Erica tetralix*, *Trichophorum germanicum* or *Calluna vulgaris*, although not all of these species need to be present. Dwarf shrubs may be scarce or absent in degraded examples of wet heath characterised by dominance of *Trichophorum germanicum* or *Molinia caerulea*.

Drainage, land reclamation, over-grazing by sheep, afforestation, and burning are the main pressures and threats to wet heath habitat.

This habitat is ground water dependant and is considered to be highly sensitive to nutrient enrichment N and P of groundwater (diffuse and point-source nutrient pollution). The overall assessment of conservation status is considered to be bad (U2) with an overall stable (=) trend in Conservation Status.

Blanket bogs (if active only) [7130]*

Blanket bog in Ireland may be broadly divided into upland and lowland communities. The peat is typically more than 50 cm deep and often 1-2 m deep in the uplands or up to 7 m deep in the lowlands. Blanket bogs generally occur on level ground or gentle slopes although upland blanket bog can occasionally occur on steeper ground up to 40 degrees in the wettest districts. Areas of blanket bog that are 'active' are granted priority status by the Habitats Directive. Active bog contains a significant area of vegetation that is normally peat forming. For blanket bog this includes not only *Sphagnum* spp. and other bryophyte species but also *Eriophorum* spp. and some of the other vascular plant species. Plant communities of active bog can be very variable. Lowland blanket bogs typically have a relatively high cover of *Schoenus* and *Molinia* with hummock-forming Mosses *Sphagnum capillifolium*, *S. papillosum* and *Racomitrium lanuginosum* and more locally *S. austinii* and *S. fuscum*. Lawn mosses include *S. magellanicum* and *Campylopus atrovirens*. *Pleurozia purpurea* is a liverwort characteristic of lowland blanket bog though also found in some localised wet upland heath communities. Lowland bog vascular plant

species include *Potentilla erecta*, *Carex panicea*, *dicularis sylvatica*, *Narthecium ossifragum* and *Rhynchospora alba*. Upland blanket bogs are often drier with considerable dwarf shrub cover including *Calluna*, *Empetrum nigrum* and *Vaccinium myrtillus* with frequent *Trichophorum germanicum* and *Eriophorum vaginatum*. A bryophyte layer can also be well-developed in wetter intact upland blanket bog where *Sphagnum capillifolium* may be predominant and *S. papillosum*, *Hypnum cupressiforme* and *Racomitrium lanuginosum* frequent. Lichens of the *Cladonia* genus occur on upland and lowland bogs. Other Annex I habitat frequently associated with lowland blanket bog habitat are *Rhynchosporion* depressions and Dystrophic pools and more locally also Transition mires and quaking bog and Alkaline fen. Intact upland bogs can also encompass Dystrophic pools. Conversely, inactive blanket bog should be defined as areas of blanket peat lacking a significant area of peat-forming species.

Local abstractions of, or discharges to, groundwater pose threats to groundwater associated flush and poor fen communities within blanket bogs.

This habitat type is groundwater dependent and highly sensitive to nutrient enrichment N of groundwater (diffuse and point-source nutrient pollution) and nutrient enrichment P of groundwater (diffuse and point-source nutrient pollution). The overall assessment of conservation status is considered to be bad (U2) with an overall declining (-) trend in Conservation Status.

Transition mires and quaking bogs [7140]

Transition mires and quaking bogs are characterised by a broad range of physically unstable peat-forming vegetation communities floating on surface water. In the Irish context, the associations *Sphagno-Caricetum lasiocarpae* and *Calliervo-Caricetum diandrae* correspond to transition mires. Transition mires typically occur in the wettest parts of raised bog, blanket bog or fen or at transition areas of open water and may reflect the actual succession from fen to bog.

Drainage, land reclamation, peat cutting, afforestation, water pollution, dumping, and changes in hydrological conditions in particular groundwater abstractions, are the main pressures and threats causing damage to transition mire and quaking bog habitats.

This habitat type is surface water and ground water dependant and is highly sensitive to Nutrient enrichment N and P of groundwater (diffuse and point-source nutrient pollution). The overall assessment of conservation status has been assessed as Unfavourable-Bad due to impaired Structure and Functions. The overall assessment trend is considered to be unknown owing to a lack of knowledge on the trends in condition.

Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260]

This habitat type is characterised by the abundance of water-crowfoots *Ranunculus* spp., subgenus *Batrachium* (*Ranunculus fluitans*, *R. penicillatus* ssp. *penicillatus*, *R. penicillatus* ssp. *pseudofluitans*, and *R. peltatus* and its hybrids). Floating mats of these white-flowered species are characteristic of river channels in early to mid-summer. They may modify water flow, promote fine sediment deposition, and provide shelter and food for fish and invertebrate animals.

There are several variants of this habitat in the UK, depending on geology and river type. In each, *Ranunculus* species are associated with a different assemblage of other aquatic plants, such as water-cress *Rorippa nasturtium-aquaticum*, water-starworts *Callitriche* spp., water-

parsnips *Sium latifolium* and *Berula erecta*, water-milfoils *Myriophyllum* spp. and water forget-me-not *Myosotis scorpioides*. In some rivers, the cover of these species may exceed that of *Ranunculus* species. Three main sub-types are defined by substrate and the dominant species within the *Ranunculus* community.

The main pressures and threats to this habitat type include diffuse pollution to surface waters due to agricultural and forestry activities (H01.05), pollution to surface waters by industrial plants (H01.01) and modification of hydrographic functioning (general) (J02.05).

This habitat type is surface water and ground water dependant and is sensitive to nutrient enrichment P (dissolved and particulate) and possibly N (diffuse and point source nutrient pollution) and BOD diffuse and point-source organic pollution.

As with other freshwater systems, deterioration of water quality is both a local and widespread issue, the former due to point-source pollution from urban centres and farms, the latter from diffuse run-off of fertiliser from commercial conifer plantations in the upper catchment and intensively farmed land in the lower catchment. Poor water quality and increased sedimentation can be significant influences on populations of *Salmo salar* and *Lutra lutra*, as well as altering the biological composition of the river ecosystem.

Table 4.0: Qualifying Habitats along Surveyed Stretch of Johnston River (Tributary of River Foyle)

Site	Qualifying Habitats	Present		Potential to be Present downstream of Surveyed Stretch
River Finn SAC	Oligotrophic Waters	Upstream	No	No
		Downstream	No	No
	Wet Heath	Upstream	No	No
		Downstream	No	No
	Blanket Bogs	Upstream	No	No
		Downstream	No	No
	Transition Mires	Upstream	No	No
		Downstream	No	No
River Foyle and Tributaries SAC	Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation	Upstream	No	No
		Downstream	No	No

Annex II Species

The River Finn SAC and the River Foyle and Tributaries SAC are both very important for the presence of a number of Annex II animal species and have been selected for the following Annex II species:

- [1106] Atlantic Salmon (*Salmo salar*)
- [1355] Otter (*Lutra lutra*)

Atlantic Salmon (Salmo salar) [1106]

Salmon breed in freshwater, but spends much of their life at sea. The Salmon population in Ireland has declined in recent decades. There are numerous factors which impact negatively on Salmon, the most important of which are reduced marine survival (probably as a result of climate change), poor river water quality (resulting from factors such as inadequate sewage treatment, agricultural enrichment, acidification, erosion and siltation), forestry-related pressures and over-fishing. Salmon are present throughout the River Finn SAC and within the River Foyle Estuary. The River Finn upstream of the River Foyle is a designated Salmonid river.

The River Foyle Estuary and tributaries form a large, cross-border river system in the north-west of Ireland. The river estuary (transitional water) 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. The Foyle River is regarded as one of the most productive Atlantic salmon Rivers in Europe. The river has the largest population of Atlantic salmon *Salmo salar* in Northern Ireland, with around 75% of the estimated spawning numbers. The majority of the salmon returning are grilse (single wintering salmon), with a smaller but important number of spring salmon (multi-wintering salmon) also occurring. Research has indicated that individual sub-catchments within the system support genetically distinct salmon populations.

This species is evaluated as being of overall 'Inadequate' conservation status nationally (NPWS 2013b) with an overall trend in Conservation Status classed as "stable".

Otter (Lutra lutra) [1355]

The River Foyle Estuary and Lough Foyle support significant numbers of Otter. Otters have two basic requirements: aquatic prey and safe refuges where they can rest. This species is dependent on fish stocks which are ultimately dependent on water quality. The 2010 Northern Ireland Otter Survey noted an increase of otter occurrence (signs and tracks) in the Foyle Catchment from 81% occurrence in 2001/02 to 93% occurrence in 2010.

The overall assessment of the conservation status of otter is "Favourable" (NPWS, 2013b).

Table 5.0: Qualifying Species along Surveyed Stretch of Johnston River (tributary of River Foyle)

Natura 2000 Site	Qualifying Species	Observed or Signs of Species Presence along Surveyed Stretch of River		Suitable Habitat Present	
		Upstream	No	Upstream	Yes
River Finn SAC River Foyle and Tributaries SAC	Otter	Downstream	No	Downstream	Yes
		Upstream	No	Upstream	Yes

Natura 2000 Site	Qualifying Species	Observed or Signs of Species Presence along Surveyed Stretch of River		Suitable Habitat Present	
		Downstream	No	Downstream	Yes

None of the qualifying habitats of the River Finn SAC (Oligotrophic Waters containing very few minerals; Wet Heath; Blanket Bogs (Active); Transition Mires) or the River Foyle and Tributaries SAC (Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachion vegetation) are found in the vicinity of the St. Johnston discharges as they are primarily upland habitats and occur a significant distance upstream (of the River Finn). Both of the qualifying species, Atlantic Salmon and Otter, although not recorded during the walkover survey, are known to occur in the vicinity of the St. Johnston discharges (i.e. the Foyle Estuary).

Conservation Objectives of the Natura 2000 sites

Article 6 of the Habitats Directive states that:

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.

The importance of a site designated under the Habitats Directive is defined by its qualifying features or interests. Qualifying interests for any Natura 2000 site are listed on a *pro forma*, called the Natura 2000 standard data form, which forms the basis of the rationale behind designation, and informs the Conservation Management Plan for targeted management and monitoring of key species and habitats.

River Finn SAC

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- [1106] *Salmo salar* (only in fresh water)
- [1355] *Lutra lutra*
- [3110] Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)
- [4010] Northern Atlantic wet heaths with *Erica tetralix*
- [7130] Blanket bogs (* if active only)
- [7140] Transition mires and quaking bogs

River Foyle and Tributaries SAC

Objective: *Salmo salar* - 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.

Objective: *Lutra lutra* - 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

Objective: *Water courses of plain to montane levels with the Ranunculus fluitantis and Callitriche-Batrachion vegetation* - The main objectives of this habitat type are to maintain and if possible enhance extent and composition of community, improve water quality and improve channel substrate quality by reducing siltation.

Impact Prediction

Impacts on Water Quality

The aquatic conservation interests of the River Finn SAC and River Foyle and Tributaries SAC are directly dependent on the aquatic environment. As the St. Johnston catchment discharges untreated wastewater into the Johnston River, a tributary of the River Foyle, there is a connection between this discharge and the ecological receptors in the downstream SACs.

Elevated nutrient levels in the Johnston River, at the discharge point and downstream, are considered to be the most significant threats to the integrity and favourable conservation status of the SACs and the water dependent qualifying features for which they are designated.

The St. Johnston discharges are impacting the receiving water body, the Johnston River, which is failing to meet the Surface Water Regulations (2009) for all parameters (based on 2009 monitoring results).

The waste assimilative capacity calculations determined, based on the actual background concentrations upstream of the discharge and the “*Notionally Clean River*” approach, that the Johnston River has no assimilative capacity for the current St. Johnston discharges.

Cumulative water quality impacts, which may impact the River Finn SAC and the River Foyle and Tributaries SAC and hence the water dependent qualifying species, may result from the following:

- Chemical fertiliser application to agricultural lands (the main fertilisers in use supply nitrogen, phosphorus, potassium and sulphur);
- Agricultural practices such as ploughing leads to greater mineralisation and nitrification, and in the case of old grassland, it can result in an increase in the release of nitrogen over a number of years (OECD, 1986);
- Artificial drainage increases nitrate leaching and reduce the morphological qualities of watercourses, thereby reducing the quality of habitat for flora and fauna;
- Forestry may alter water quality indirectly through increased evaporation losses and hence an increase in solute concentrations;
- On-site wastewater treatment systems, poorly performing septic tank units, untreated wastewater discharges and other small effluent systems can be significant sources of nutrients to rivers;
- Point pressures including Section 4 licenced facilities and IPC licenced facilities;
- Peat siltation due to peat harvesting, over-grazing by sheep leading to erosion and forestry practices in the hills during planting and harvesting operations.

In summary, the St. Johnston discharges are impacting the water quality of the Johnston River. This River is a tributary of the River Finn SAC and the River Foyle and Tributaries SAC and therefore the discharges have the potential to impact upon the water quality of these designated sites and the water dependent qualifying interests of these sites.

Impacts on Annex I Habitats

The untreated wastewater discharges from St. Johnston are partially responsible for the “bad” status of the Johnston River. The continued release of the St. Johnston discharges with high nutrient content, in combination with other pollution sources, is likely to lead to an eventual accumulation of nutrients in the River Foyle and associated SACs. The Johnston River has already seen a continued decline in water quality.

Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110]
Oligotrophic Waters are surface water and groundwater dependent. The main water pollution risk to this habitat is nutrient enrichment in the forms of phosphorous (dissolved and particulate) and nitrogen (diffuse and point source). The St. Johnston discharges have the potential to have a localised impact on the River Foyle water quality. Oligotrophic waters are confined to the upper reaches of the Finn system; therefore, there is no potential for adverse effects or changes to the conservation status of this habitat from the St. Johnston discharges.

Northern Atlantic wet heaths with Erica tetralix [4010]

Wet Heath is a groundwater dependent habitat. This habitat type is highly sensitive to nutrient enrichment of groundwater, in particular diffuse and point source nitrogen and phosphorous enrichment. This habitat is groundwater dependent and occurs in the upland areas of the SAC. Consequently, there is no potential for adverse effects and potential for changes to the conservation status of this habitat from the St. Johnston discharges.

Blanket bogs (if active only) [7130]*

Blanket Bogs are ground water dependent and are also highly sensitive to nutrient enrichment; nitrogen and phosphorous diffuse and point source pollution. This habitat is groundwater dependent and occurs in the upland areas of the SAC. Consequently, there is no potential for adverse effects and potential for changes to the conservation status of this habitat from the St. Johnston discharges.

Transition mires and quaking bogs [7140]

Transition Mires are surface water and ground water dependent highly sensitive to nutrient enrichment; nitrogen and phosphorous diffuse and point source pollution. This habitat occurs in the upland areas of the SAC. Consequently, there is no potential for adverse effects and potential for changes to the conservation status of this habitat from the St. Johnston discharges.

Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260]

This habitat type is characterised by the abundance of water-crowfoots *Ranunculus* spp., subgenus *Batrachium* (*Ranunculus fluitans*, *R. penicillatus* ssp. *penicillatus*, *R. penicillatus* ssp. *pseudofluitans*, and *R. peltatus* and its hybrids). Floating mats of these white-flowered species are characteristic of river channels in early to mid-summer. They may modify water flow, promote fine sediment deposition, and provide shelter and food for fish and invertebrate animals. The variant of this habitat that occurs in the Foyle catchment is a mesotrophic to oligotrophic

community that has been adversely affected by nutrient enrichment, mainly from sewage inputs and agriculture, and where agriculture has caused serious siltation. The precise details of the occurrence of this habitat are not yet available but the habitat does occur in the Owenkillew River that rises in the Sperrin Mountains and flows west to the Foyle system (JNCC 2014). This habitat does not occur in the vicinity of St. Johnston, consequently, there is no potential for adverse effects and potential for changes to the conservation status of this habitat from the St. Johnston discharges.

Table 6.0: Qualifying Habitats Potentially Impacted by the St. Johnston Discharges

Qualifying Habitats	Potential Impacts	Brief Explanation	Mitigation required
<i>Oligotrophic waters</i>	No	This habitat requires nutrient-poor conditions and occurs in Loughs Finn, Belshade and Derg and in the clear upland headwaters of the River Finn and its tributaries. Oligotrophic waters occur a significant distance upstream of the St Johnston discharges so therefore there is no potential for adverse effects or changes to the conservation status of this habitat.	No
<i>Wet heaths with Erica tetralix</i>	No	This habitat is groundwater dependent and is associated with the Blanket Bog habitat found in the upland areas of the site and hence a significant distance upstream of the St Johnston discharges with no potential for adverse effects, and no changes to the conservation status of this habitat.	No
<i>Blanket bogs</i>	No	This habitat is groundwater dependent and is located in the upland areas of the SAC along the edges of the River Finn and at Tullytresna and the Owendoo/Cloghervaddy bogs all of which are located a significant distance upstream of the St Johnston discharges so there is no potential for adverse effects, and no changes to the conservation status of this habitat.	No
<i>Transition mires and quaking bogs</i>	No	This habitat is usually located at the interface of bogs and lakes or streams and there are examples of this habitat type in the small lakes in the vicinity of Owendoo and Cloghervaddy. These lakes are located a significant distance upstream of the St Johnston discharges and therefore there is no potential for adverse effects, and no changes to the conservation status of these habitats.	No
<i>Water courses of plain to montane levels with the Ranunculus fluitantis and Callitriche-Batrachion vegetation</i>	No	The precise details of the occurrence of this habitat are not yet available but the habitat does occur in the Owenkillew River that rises in the Sperrin Mountains and flows west to the Foyle system. This habitat does not occur in the vicinity of St. Johnston.	No

Impacts on Annex II Species

Salmon (Salmo salar) [1106]

The Atlantic Salmon is a clean water dependent species and is highly sensitive to pollution. Healthy salmon stocks require good water quality. Salmon stocks have declined considerably in the River Finn system over the past 10 years. In 2012 the Finn Salmon count, as recorded by the electronic fish counter at Killygordon, was 2,190 with a 5 year average of 2,175. The management target for the Finn is to restore the count to 5,410. A strict policy of catch and release for anglers has been enforced over the past two seasons and commercial netting has been suspended. Annual monitoring of salmon fry (young of year) has shown a slight increase in young fish and in 2012 the mean number of fry recorded at 37 monitoring stations within the Finn catchment was 8 (Loughs Agency, 2013).

The River Foyle is tidal along its entire length up to the confluence with the River Finn and as such, it is not used as a breeding area by salmon. Nevertheless, the Foyle is an important link to the sea and is used by returning grilse and spring salmon as well as smolts on their first journey to the sea. Smolts can remain in estuaries for over two weeks prior to migrating to the open sea (Moore *et al*, 1995).

The St. Johnston discharges are likely to be having a negative impact on water quality in the Johnston River and the River Foyle. The untreated wastewater from St. Johnston, in-combination with other catchment point sources and pressures (e.g. Lifford WwTP (D0352-01) and Killea WWTP (D0537-01)), has the potential for serious impacts on this surface water dependent species which requires clean unpolluted water to thrive.

Otter (Lutra lutra) [1355]

Otter are widespread through the waterways of Ireland and they rely on good water quality for adequate food supply. Ireland is host to an internationally important otter population and the species has remained widespread and relatively common throughout the island. Otters were not recorded within the vicinity of the St. Johnston discharge locations during the field survey. Nevertheless, otters are present within the River Foyle. Water pollution represents one of the principal threats to otter survival in Ireland (Reid *et al*, 2013). Otters can tolerate significant levels of pollution (Bailey & Rochford, 2005; Romanowski *et al* 2012) but poor water quality tends to result in reduced numbers and variety of fish species which in turn will have a negative impact on otter presence in polluted waterways. The St. Johnston untreated wastewater discharges, alone and in combination with other point sources, are likely to be having indirect effects on otters (as a result of reduced food supply).

Table 7.0: Qualifying Species Potentially Impacted by the St. Johnston Discharges

Qualifying Species	Potential Impact	Brief Explanation	Mitigation Required
<i>Otter</i>	Yes	Reduced water quality and ecological status from the discharges of St. Johnston, alone or in combination with other discharges could be having indirect effects on otters (as a result of reduced food supply).	Yes
<i>Atlantic Salmon</i>	Yes	The Atlantic Salmon is a clean water dependent species and is highly sensitive to pollution The St. Johnston discharges alone have the potential to impact on the water quality of the River Foyle and therefore in combination with other catchment point sources and	Yes

Qualifying Species	Potential Impact	Brief Explanation	Mitigation Required
		pressures there is the potential for impacts on this clean water dependent species.	

Mitigation Measures

No adequate treatment is in place in St. Johnston. At present the flow to and through the network equates to 642 PE. The current loading is released untreated to the Johnston River which flows into the River Finn SAC and is approximately 0.7 km upstream of the River Foyle and Tributaries SAC.

It is evident from the 2009 monitoring results and the WAC calculations prepared for this report that there is no assimilative capacity in the Johnston River for the St. Johnston discharges.

The effluent from St. Johnston agglomeration is partially responsible for the “*bad*” status of the Johnston River. The continued release of effluent (with high nutrient content) from the St. Johnston agglomeration, in combination with other pollution sources, is likely to lead to an eventual accumulation of nutrients in the River Foyle (and hence the associated SACs). There is potential for this discharge to be impacting upon the water dependent qualifying interests of these Natura 2000 sites.

Mitigation Measures recommended for St. Johnston are as follows:

- An adequate treatment facility needs to be constructed in order to provide treatment for the St. Johnston wastewater and to provide a consistent quality effluent in compliance with all national and EU legislation. This will also serve to improve the water quality status of the Johnston River and protect the downstream SACs.
- Continued monitoring of the wastewater, both upstream and downstream of the discharge point on a regular basis.

Stage 2 Appropriate Assessment Conclusion Statement

The current Appropriate Assessment has been prepared following the EPA (2009) '*Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007)*'. The Department of the Environment, Heritage and Local Government guidance '*Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities*' (DoEHLG, 2009a) has also been taken into account. The current assessment for the Waste Water Discharge Licence Application investigates the potential adverse effects on the aquatic qualifying interests of the Natura 2000 network arising from the St. Johnston discharges, in combination with other plans/projects affecting the aquatic environment. The assessment considers whether the discharges, alone or in combination with other projects or plans, will have adverse effects on the integrity of the River Finn SAC and the River Foyle and Tributaries SAC and includes any mitigation measures necessary to avoid, reduce or offset negative effects.

When the above mitigation measures are implemented in full, it is envisaged that there will be no significant adverse effects on the integrity of the River Finn SAC and the River Foyle and Tributaries SAC in view of the conservation objectives of the sites and that the conservation status of the Annex II species will not be compromised by the St. Johnston discharges either directly, indirectly or cumulatively.

It is concluded that the St. Johnston discharges, alone or in combination with other plans and/or projects will not give rise to significant effects on the integrity of the River Finn SAC or the River Foyle and Tributaries SAC, as long as the mitigation measures as listed above are implemented in full. This Stage 2 assessment concludes the Appropriate Assessment process of the St. Johnston Waste Water Discharge Licence Application and further assessment is not considered necessary.

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