



# Ramsar Information Sheet

Published on 6 July 2022

Update version, previously published on : 11 June 1996

## Ireland

### Blackwater Estuary



Designation date	7 June 1996
Site number	836
Coordinates	51°58'03"N 07°50'25"W
Area	468,00 ha

## Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

## 1 - Summary

### Summary

The Blackwater Estuary Ramsar Site consists of a moderately-sized, sheltered south-facing estuary, which extends from Youghal New Bridge to the Ferry Point peninsula, close to where the river enters the sea and comprises a section of the main channel of the River Blackwater. The site includes a substantial area of shallow estuarine waters which comprise of very extensive areas of intertidal flats, which are mostly muds or sandy muds, reflecting the sheltered conditions of the estuary. The sediments have a macrofauna typical of muddy sands. Small areas of sand, shingle and pebble shores and rocky shores also occur. The Blackwater Estuary is of high ornithological importance for wintering waterbirds as these habitats provide good quality feeding, foraging and roosting areas for a diversity species. The estuary provides passage for a range of diadromous/migratory species including Atlantic salmon, European eel, sea lamprey and twaite shad. These species are under threat within Ireland and some are endangered globally. The site also supports otter (*Lutra lutra*), this mammal is deemed Near threatened on the IUCN red list of threatened species and it is listed in the CITES Appendix I.

The Ramsar Site overlaps with part of the EU Natura 2000 site, the Blackwater River (Cork/Waterford) Special Area of Conservation (SAC), an area of major ecological importance for its range and extent of good quality freshwater and coastal habitats and for a range of protected fish, invertebrate and plant species listed on Annex VIII of the EU Habitats Directive.

The Ramsar site also lies within the EU Natura 2000 site, the Blackwater Estuary Special Protection Area (SPA), important for nationally important populations of species listed on Annex I of EU Birds Directive and/or regularly occurring migratory species.. Under this designation, the wetland habitat is also protected as a resource for the regularly-occurring migratory waterbirds that utilise it. According to the I-WeBS data (2010-2015), nationally important populations of a number of species occur at the site, including the black-tailed godwit, a species undergoing rapid declines globally. The Blackwater Estuary is recognised as an Important Bird Area (IBA).

## 2 - Data & location

### 2.1 - Formal data

#### 2.1.1 - Name and address of the compiler of this RIS

##### Responsible compiler

Institution/agency	National Parks and Wildlife Service, Department of Housing, Local Government and Heritage
Postal address	National Parks and Wildlife Service, 90 North King Street, Smithfield, Dublin, Ireland D07 N7CV

##### National Ramsar Administrative Authority

Institution/agency	National Parks & Wildlife Service, Department of Housing, Local Government and Heritage
Postal address	National Parks and Wildlife Service, 90 North King Street, Smithfield, Dublin, Ireland D07 N7CV

#### 2.1.2 - Period of collection of data and information used to compile the RIS

From year

To year

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)

#### 2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary Yes  No

(Update) B. Changes to Site area No change to area

(Update) For secretariat only: This update is an extension

#### 2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS? Not evaluated

## 2.2 - Site location

### 2.2.1 - Defining the Site boundaries

#### b) Digital map/image

<2 file(s) uploaded>

Former maps

#### Boundaries description

The Ramsar site lies within and is integral to the larger wetland complex which is the Blackwater Estuary SPA and the Blackwater River (Cork/Waterford) SAC. The boundaries of this site matches the southern part of the Blackwater Estuary SPA (as designated in 1994) and a section of the extensive Blackwater River SAC starting from the N25 road and including a large expanse of intertidal mud and sandflat habitat. Details of the SAC and SPA can be found on the NPWS website at <https://www.npws.ie/protected-sites>. Within this area, a number of GIS data layers were used to define the Ramsar habitats within the site. These included:

- CORINE (Co-Ordinated Information on the Environment) land cover data sets (2012).
- Bing Maps Aerial - © Harris Corp, Earthstar Geographics LLC © 2017 Intermap Earthstar Geographics SIO © 2017 Microsoft Corporation.
- Environmental Protection Agency of Ireland Rivers and Lakes layers data layers.
- NPWS data layers (Marine community mapping).

The mapped layers were inspected by a Site visit to confirm the presence of the habitats. Habitat areas were subsequently estimated by reference to the available imagery and layers and should be considered representative but approximate.

The mapped area, as calculated from the GIS boundary, differs slightly from the official boundary of the Ramsar site. This is due to historic mapping issues generally as a result of differing mapping projections.

2.2.2 - General location

- a) In which large administrative region does the site lie?
- b) What is the nearest town or population centre?

2.2.3 - For wetlands on national boundaries only

- a) Does the wetland extend onto the territory of one or more other countries? Yes  No
- b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes  No

2.2.4 - Area of the Site

- Official area, in hectares (ha):
- Area, in hectares (ha) as calculated from GIS boundaries

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	Atlantic
EU biogeographic regionalization	Atlantic

Other biogeographic regionalisation scheme

### 3 - Why is the Site important?

#### 3.1 - Ramsar Criteria and their justification

- Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided

This site is important in terms of flood and storm protection. The presence of significant mussel beds and a small bed of eel grass is important for nutrient sequestration and sediment trapping. The estuary provides natural filtration services which are important for coastal water quality, however where input levels (e.g. chemicals, organic waste) are excessive the natural character of the estuary can be greatly affected.

Other ecosystem services provided

- The intertidal habitats are important for carbon sequestration and nutrient cycling. With the cycling of carbon and nutrients estuarine systems have a role in climate regulation.
- Recreation and tourism (Water sports, nature-based tourism, day trips)
- Scientific and educational (research and monitoring)
- Biodiversity (e.g. mussel beds, zostera beds, estuarine invertebrate communities, dependant bird communities)

Other reasons

This site supports estuarine waters with intertidal mud and sandflat habitats which are representative of the Atlantic Biogeographic region. The intertidal habitats support significant mussel beds and a small Zostera bed; communities types which are threatened within the OSPAR region. Two significant rivers flow into the estuary which has a narrow mouth to the sea.

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification

This site contains a range of wetland and marine habitats which are representative of the biogeographical region and important in maintaining its biological diversity. It includes areas of intertidal and subtidal mussel beds, and estuarine waters critical to maintaining the structure and function of the site. The mussel beds are considered to be threatened in the biogeographical area in addition to providing an important feeding resource to waterfowl and an important and extensive biogenic reef habitat. The estuary is part of the migration route for threatened fish populations moving between the sea and estuarine and/or freshwater habitats.

- Criterion 4 : Support during critical life cycle stage or in adverse conditions

- Criterion 6 : >1% waterbird population

- Criterion 8 : Fish spawning grounds, etc.

Justification

The twaite shad enters freshwater to spawn near the upstream limit of tidal influence. The species has been reported from marine locations around the entire coast, but spawning movements into upper tidal waters and freshwater have only been reported from the Munster Blackwater, Suir, Barrow – Nore and Slaney (King & Linnane, 2004). The Blackwater SAC is one of four SAC's designated for this species within Ireland. The species is listed as Vulnerable on the Irish Red List (King et al., 2011). EUNIS deems the conservation status the twaite shad within the Atlantic region to be Unfavourable-Bad, while IUCN deems the species of Least Concern Globally and within Europe. The species is listed on Annex II and V of the EU Habitats Directive.

According to King & Linnane (2004) the Blackwater estuary provides passage for the following diadromous/migratory species: Atlantic salmon (*Salmo salar*), European eel (*Anguilla anguilla*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*Lampetra fluviatilis*), Sea Lamprey (*Petromyzon marinus*) and Twaite Shad (*Alosa fallax*) species. The Blackwater River SAC (2170), which incorporates the Blackwater Estuary Ramsar site, is designated for the presence of these species. The Atlantic salmon is deemed Vulnerable in Europe and of Least Concern Globally. Freshwater populations of the species are protected under Annex II, IV, V of the EU Habitats Directive. The species is listed as Vulnerable on the Irish Red List (King et al., 2011). According to IUCN the European eel has undergone a sharp decline in recruitment, yield and stock, which will continue into the future, it is deemed Critically Endangered in the European Union, Europe and globally.

### 3.2 - Plant species whose presence relates to the international importance of the site

<no data available>

### 3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
<b>Others</b>																	
CHORDATA/ MAMMALIA	<i>Lutra lutra</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Annex II Habitats Directive.	Annex II listing and Red Listed in Ireland, maintains biodiversity
<b>Fish, Mollusc and Crustacea</b>																	
CHORDATA/ ACTINOPTERYGII	<i>Alosa fallax</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Annex II Habitats Directive	Annex II listing and Red Listed in Ireland, critical life stage (passage)
CHORDATA/ ACTINOPTERYGII	<i>Anguilla anguilla</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				CR	<input type="checkbox"/>	<input type="checkbox"/>	Critically Endangered in Ireland	Red Listed in Ireland and critical life stage (passage), biodiversity
CHORDATA/ CEPHALASPIDOMORPHI	<i>Lampetra fluviatilis</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Annex II Habitats Directive	Annex II listing and Red Listed in Ireland, critical life stage (passage), biodiversity
MOLLUSCA/ BIVALVIA	<i>Mytilus edulis</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		OSPAR (Annex V) list of threatened and declining species and habitats, important mussel stock, biodiversity
CHORDATA/ CEPHALASPIDOMORPHI	<i>Petromyzon marinus</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Annex II Habitats Directive	Annex II listing and Red Listed in Ireland, critical life stage (passage), biodiversity
CHORDATA/ ACTINOPTERYGII	<i>Salmo salar</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	Annex II Habitats Directive	Annex II listing and Red Listed in Ireland, critical life stage (passage), biodiversity
<b>Birds</b>																	

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/AVES	<i>Alcedo atthis</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive), Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Annex I listing.
CHORDATA/AVES	<i>Anas acuta</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	National (BoCCI) classification and part of wintering assemblage.
CHORDATA/AVES	<i>Anas crecca</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	343	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Part of the wintering assemblage and maintaining biodiversity
CHORDATA/AVES	<i>Anas penelope</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	426	2011-2015			<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	National (BoCCI) classification and part of wintering assemblage.
CHORDATA/AVES	<i>Branta bernicla hrota</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	277	2011-2015			<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Part of wintering bird assemblage and maintaining biodiversity.
CHORDATA/AVES	<i>Calidris alpina</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	287	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Part of wintering bird assemblage and national (BoCCI) classification.
CHORDATA/AVES	<i>Calidris canutus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Part of wintering bird assemblage and maintaining biodiversity
CHORDATA/AVES	<i>Cygnus olor</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Part of wintering bird assemblage and maintaining biodiversity
CHORDATA/AVES	<i>Egretta garzetta</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I of the EU Birds Directive.	Annex I listing
CHORDATA/AVES	<i>Gallinago gallinago</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Part of wintering bird assemblage and maintaining biodiversity
CHORDATA/AVES	<i>Gavia immer</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive), Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013), and Vulnerable classification IUCN Europe region)	Annex I listing, and National (BoCCI) and IUCN classifications and part of wintering bird assemblage.
CHORDATA/AVES	<i>Haematopus ostralegus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	455	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013), and Vulnerable classification IUCN Europe region)	National (BoCCI) and IUCN classifications and part of wintering bird assemblage.
CHORDATA/AVES	<i>Limosa lapponica</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	31	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive), Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Annex I listing, national (BoCCI) classification and part of wintering bird assemblage.
CHORDATA/AVES	<i>Limosa limosa</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1500	2011-2015	1.36	NT	<input type="checkbox"/>	<input type="checkbox"/>	1% criteria, Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013), and Vulnerable classification IUCN Europe region)	1% criteria, National (BoCCI) and IUCN classifications Population: islandica, Iceland/Western Europe and part of wintering bird assemblage.
CHORDATA/AVES	<i>Numenius arquata</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	688	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013), and Vulnerable classification IUCN Europe region)	National (BoCCI) and IUCN classifications and part of wintering bird assemblage.
CHORDATA/AVES	<i>Pluvialis apricaria</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	60	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive), Red-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Annex I listing, and National (BoCCI) classification and part of wintering bird assemblage.
CHORDATA/AVES	<i>Tadorna tadorna</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	140	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Part of wintering bird assemblage and maintaining biodiversity
CHORDATA/AVES	<i>Thalasseus sandvicensis</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	62	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive), Amber-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	Annex I listing

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/ AVES	<i>Tringa totanus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	331	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)	National (BoCCI) classification and part of wintering bird assemblage.
CHORDATA/ AVES	<i>Vanellus vanellus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	727	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013), and Vulnerable classification IUCN Europe region)	National (BoCCI) and IUCN classifications and part of wintering bird assemblage.

1) Percentage of the total biogeographic population at the site

Wintering bird species listed under 3.3 have been selected based on an assessment of Irish Wetland Bird Survey data from the period 2006/07 to 2015/16. Blackwater Estuary is an SPA for birds, however not all species listed for the SPA may be listed under 3.3 (or vice versa) as the SPA designation is based on other data and criteria.

I-WeBS data (from the period 2006/07 to 2015/16) lists nationally important populations of Shelduck, Teal, Little Egret, Grey Heron, Black-tailed Godwit, Curlew, Greenshank and Redshank. All but two of these species (Grey Heron, Little Egret) are deemed Birds of Conservation Concern in Ireland. The Little Egret is listed on Annex I of the EU Birds Directive. The Black-tailed Godwit is deemed Vulnerable in Europe and Near threatened globally. According to the IUCN the Curlew is under-going rapid decline throughout Europe (Vulnerable) and globally (Near Threatened). The regular occurrence of Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the EU Birds Directive.

Blackwater Estuary is designated as an EU Natura 2000 site (Special Protection Area) due to the presence of the following species listed on Annex I of the EU Birds Directive and/or regularly occurring migratory species: Wigeon (*Anas penelope*), Golden Plover (*Pluvialis apricaria*), Lapwing (*Vanellus vanellus*), Dunlin (*Calidris alpina*), Black - tailed Godwit (*Limosa limosa*), Bar - tailed Godwit (*Limosa lapponica*), Curlew (*Numenius arquata*) and Redshank (*Tringa totanus*). Under this SPA designation the wetland habitat is also protected as a resource for the regularly-occurring migratory water birds that utilise it.

### 3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Mytilus edulis dominated community	<input checked="" type="checkbox"/>	The site supports significant beds of both intertidal and subtidal Blue Mussel.	M. edulis beds are included in the OSPAR (Annex V) list of threatened and declining species and habitats. ICES found sufficient evidence for the decline and threat of this habitat over the whole OSPAR area (ICES 2002).
Zostera noltii community	<input checked="" type="checkbox"/>	The site supports a small area of eelgrass.	This habitat has a restricted distribution in Ireland. It is considered threatened on the OSPAR list of threatened or declining habitats
1140 Mudflats and sandflats not covered by seawater at low tide	<input checked="" type="checkbox"/>		Annex I EU Habitats Directive
1130 Estuaries	<input checked="" type="checkbox"/>		Annex I EU Habitats Directive

Optional text box to provide further information



The Blackwater Estuary Ramsar site is connected to the extensive River Blackwater wetland complex which is an SAC and supports the following additional Annex I wetland habitats: 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), 1410 Mediterranean salt meadows (*Juncetalia maritimi*), 1310 *Salicornia* and other annuals colonising mud and sand, Perennial vegetation of stony banks [1220], Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation [3260].

## 4 - What is the Site like? (Ecological character description)

### 4.1 - Ecological character

The Blackwater Estuary Ramsar site is a relatively small, sheltered south-facing estuary, which extends from below Youghal Bridge to the Ferry Point peninsula. The site includes the estuaries of the Blackwater and Tourig Rivers. At low tide, intertidal flats are exposed. The intertidal sediments are mostly muds or sandy muds reflecting the sheltered conditions of the estuary and support a small area of eel grass which provides a feeding resource to waterbirds. The sediments have a macrofauna typical of muddy sands, with polychaete worms and bivalves well-represented. The mussel beds of the site are of particular importance both as a feeding resource for waterbirds and as this habitat and its associated species are considered to be in decline within the biogeographic region. The mussel beds also provide a significant area of biogenic reef with its associated dependent faunal assemblages. The estuary lies at the mouth of the Blackwater River which is an SAC and has a considerable upstream estuarine and freshwater extent (river and stream network). The Blackwater estuary and the upstream estuarine and freshwater habitats are important for migratory fish, freshwater pearl mussel, protected plant species and for a range of wetland habitats such as wet woodland, marsh and reedbed.

### 4.2 - What wetland type(s) are in the site?

#### Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
B: Marine subtidal aquatic beds (Underwater vegetation)	Eelgrass bed	3	3	Representative
E: Sand, shingle or pebble shores	Sand, shingle or pebble shores	4	1	Representative
F: Estuarine waters	Estuarine waters	2	110	Representative
G: Intertidal mud, sand or salt flats	Intertidal mudflats and sandflats	1	349	Representative

### 4.3 - Biological components

#### 4.3.1 - Plant species

##### Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/LILIOPSIDA	<i>Zostera noltii</i>	

##### Invasive alien plant species

Phylum	Scientific name	Impacts	Changes at RIS update
TRACHEOPHYTA/LILIOPSIDA	<i>Spartina anglica</i>	Potential	No change

##### Optional text box to provide further information

The Blackwater Estuary Ramsar site is connected to the extensive River Blackwater wetland complex which is an SAC and supports the following additional Annex II species: [1421] Killarney Fern (*Trichomanes speciosum*).

#### 4.3.2 - Animal species

##### Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range / endemism / other
CHORDATA/AVES	<i>Ardea cinerea</i>	25	2011 - 2015	0.01	Nationally important at this site
ARTHROPODA/MALACOSTRACA	<i>Austropotamobius illopisi</i>				
CHORDATA/CEPHALASPIDOMORPHI	<i>Lampetra planeri</i>				
MOLLUSCA/BIVALVIA	<i>Margaritifera margaritifera</i>				
CHORDATA/AVES	<i>Tringa nebularia</i>	34	2011 - 2015	0.01	Nationally important at this site

##### Optional text box to provide further information

The Freshwater Pearl Mussel, White-clawed Crayfish and Brook Lamprey are freshwater species which are present in the wider wetland complex which extends into the freshwater and riverine habitats upstream of the Blackwater estuary and which are part of the Blackwater River SAC. The Freshwater Pearl Mussel, the White-clawed Crayfish and Brook Lamprey are all Annex II species and are qualifying species for the Blackwater River SAC.

### 4.4 - Physical components

#### 4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cfb: Marine west coast (Mild with no dry season, warm summer)

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

- Entire river basin
- Upper part of river basin
- Middle part of river basin
- Lower part of river basin
- More than one river basin
- Not in river basin
- Coastal

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Irish Sea, River Blackwater

4.4.3 - Soil

Mineral

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Organic

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

No available information

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes  No

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from surface water	<input type="checkbox"/>	No change
Marine water	<input checked="" type="checkbox"/>	No change

Water destination

Presence?	Changes at RIS update
Marine	No change

Stability of water regime

Presence?	Changes at RIS update
Water levels fluctuating (including tidal)	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.

The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains before entering the Estuary. In times of heavy rainfall the levels can fluctuate widely. Tidal streams within the estuary, especially in the area of Ferry Point spit are extremely fast which causes scouring of the seabed and the channel at this location.

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Significant accretion or deposition of sediments occurs on the site

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Sediment regime unknown

Please provide further information on sediment (optional):

Accretion and erosion are natural elements of saltmarsh systems. Maintaining the sediment supply is vital for the continued development and natural functioning of a saltmarsh system. According to NPWS (2012b), the impacts of erosion at the site are assessed as neutral. Saltmarsh systems occur outside but along the margins of the Ramsar site.

4.4.6 - Water pH

Alkaline (pH>7.4)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

#### 4.4.7 - Water salinity

Euhaline/Eusaline (30-40 g/l)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

#### 4.4.8 - Dissolved or suspended nutrients in water

Eutrophic

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Mesotrophic

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Oligotrophic

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

#### 4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself: i) broadly similar  ii) significantly different

Surrounding area has greater urbanisation or development

Surrounding area has higher human population density

Surrounding area has more intensive agricultural use

Surrounding area has significantly different land cover or habitat types

Please describe other ways in which the surrounding area is different:

The surrounding land is low lying improved agricultural grassland with dispersed habitation.

### 4.5 - Ecosystem services

#### 4.5.1 - Ecosystem services/benefits

##### Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Erosion protection	Soil, sediment and nutrient retention	Low
Pollution control and detoxification	Water purification/waste treatment or dilution	Low
Climate regulation	Regulation of greenhouse gases, temperature, precipitation and other climactic processes	Low
Climate regulation	Local climate regulation/buffering of change	Low
Hazard reduction	Flood control, flood storage	Medium
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	Medium

##### Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Water sports and activities	Medium
Recreation and tourism	Nature observation and nature-based tourism	Medium
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	Low
Scientific and educational	Long-term monitoring site	Low

##### Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	Medium
Soil formation	Accumulation of organic matter	Low
Soil formation	Sediment retention	Low
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	Medium
Nutrient cycling	Carbon storage/sequestration	Medium

Within the site:

Outside the site:

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes  No  Unknown

#### 4.5.2 - Social and cultural values

- i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland
- ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland
- iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples
- iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland

<no data available>

#### 4.6 - Ecological processes

<no data available>

## 5 - How is the Site managed? (Conservation and management)

### 5.1 - Land tenure and responsibilities (Managers)

#### 5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Provide further information on the land tenure / ownership regime (optional):

All of the foreshore of Ireland is deemed owned by the State, unless a valid alternative title is provided. The foreshore of Ireland is classed as the land and seabed between the high water of ordinary or medium tides (shown HWM on Ordnance Survey maps) and the twelve-mile limit (12 nautical miles equals approximately 22.24 kilometers). Foreshore also covers tidal areas of rivers particularly estuaries (Housing.gov.ie).

The Blackwater Estuary is one of the only areas of seabed in Ireland where ownership of the seabed below the HWM is in dispute. In this case the Devonshire Estate claims ownership of the seabed.

#### 5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

National Parks & Wildlife Service (NPWS), Department of Culture, Heritage and the Gaeltacht.  
Waterford County Council.  
Cork County Council.  
Environmental Protection Agency (EPA).  
Department of Communications, Climate Action and Environment.  
Marine Institute.

Provide the name and/or title of the person or people with responsibility for the wetland:

Maurice Eakin

Postal address:

National Parks and Wildlife Service,  
90 North King Street,  
Smithfield, Dublin,  
Ireland  
D07 N7CV

E-mail address:

maurice.eakin@chg.gov.ie

## 5.2 - Ecological character threats and responses (Management)

### 5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Human settlements (non agricultural)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Housing and urban areas	High impact		<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Tourism and recreation areas	Medium impact		<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Livestock farming and ranching	unknown impact	Medium impact	<input checked="" type="checkbox"/>	unknown	<input checked="" type="checkbox"/>	unknown

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Roads and railroads	unknown impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Hunting and collecting terrestrial animals	Low impact		<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities	Medium impact		<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Invasive non-native/ alien species	Low impact	Low impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Household sewage, urban waste water	High impact		<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Agricultural and forestry effluents	Medium impact		<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Please describe any other threats (optional):

The release of raw untreated sewage into this site is likely to be one of the biggest threats to its conservation status.

5.2.2 - Legal conservation status

Regional (international) legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
EU Natura 2000	Blackwater Estuary Special Protection Area. Site Code:004028	<a href="https://www.npws.ie/protected-sites/spa/004028">https://www.npws.ie/protected-sites/spa/004028</a>	partly
EU Natura 2000	Blackwater River Special Area of Conservation. Site Code:0002170	<a href="https://www.npws.ie/protected-sites/sac/002170">https://www.npws.ie/protected-sites/sac/002170</a>	partly

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Important Bird Area	Blackwater Estuary	<a href="http://datazone.birdlife.org/site/factsheet/blackwater-estuary-iba-ireland">http://datazone.birdlife.org/site/factsheet/blackwater-estuary-iba-ireland</a>	whole

5.2.3 - IUCN protected areas categories (2008)

- Ia Strict Nature Reserve
- Ib Wilderness Area: protected area managed mainly for wilderness protection
- II National Park: protected area managed mainly for ecosystem protection and recreation
- III Natural Monument: protected area managed mainly for conservation of specific natural features
- IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
- V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Habitat

Measures	Status
Catchment management initiatives/controls	Implemented
Land conversion controls	Implemented

Species

Measures	Status
Threatened/rare species management programmes	Implemented

Human Activities

Measures	Status
Regulation/management of wastes	Implemented
Regulation/management of recreational activities	Implemented
Research	Implemented
Fisheries management/regulation	Implemented
Harvest controls/poaching enforcement	Implemented

Other:

The Blackwater Estuary Ramsar site lies within the Blackwater Estuary SPA (004028) and is part of the Blackwater River SAC (002170). Under European and national legislation, Ireland must maintain at favourable conservation status areas designated as Scientific Areas of Conservation and Special Protection Areas. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites. Conservation objectives of this site have been set for the SAC and SPA and are listed below; these can be accessed on NPWS.ie. It should be noted that only the habitat types that occur within the Ramsar site are listed here, other habitat types occur within the SAC but these are outside of the Ramsar site boundary,

- To maintain or restore the favourable conservation condition of the Annex I habitat(s) for which the SAC has been selected: estuaries [1130], Mudflats and sandflats not covered by seawater at low tide [1140], Salicornia and other annuals colonising mud and sand [1310], Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330], Mediterranean salt meadows (*Juncetalia maritimi*) [1410].
- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and Wetlands [A999].

Legislation in the Republic of Ireland affords protection to bird species outside of designated sites e.g. all wild bird species are afforded protection by The Wildlife Act 1976. Waterfowl shooting is under license only, managed by the National Parks & Wildlife Service. Blackwater Estuary is routinely surveyed as part of I-WeBS which provides comprehensive counts of the bird species using the site.

5.2.5 - Management planning

Is there a site-specific management plan for the site? No

Has a management effectiveness assessment been undertaken for the site? Yes  No

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes  No

URL of site-related webpage (if relevant):

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No need identified

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Water regime monitoring	Implemented
Birds	Implemented
Animal community	Implemented
Water quality	Implemented

A requirement of the Water Framework Directive is that benthic macro-invertebrates must be sampled from coastal and transitional waters at least twice within a river basin cycle (6 years) in order to classify these water bodies. The Blackwater estuary is sampled and monitored under this programme.

A significant section of this site is also a Special Area of Conservation. In this regard sampling and analysis of the marine Annex I habitats within the site are monitored and reported on under Article 17 of the EU Habitats Directive.

The site is monitored under the I-WEBS scheme.

The site is regularly inspected by the National Parks and Wildlife Service Conservation Rangers for the area.



## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

Colhoun, K. and Cummins, S. 2013. Birds of conservation concern in Ireland 2014-2019. Irish Birds 9: 523-544

ICES (2002) Draft OSPAR List of threatened and declining species and habitats. Report of the ICES Advisory Committee on Ecosystems 2002. p42-46 and Annex 1.

King J. J. and Linnane S. M. (2004) The status and distribution of lamprey and shad in the Slaney and Munster Blackwater SACs. Irish Wildlife Manuals, No. 14. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

King, J., Marnell, F., Kingston, N., Rosell, R., Roche, W.K. & Cassidy, D. (2011) Ireland Red List No. 5: Fish, Amphibians & Reptiles. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

Marnell, F., Kingston, N. & Looney, D. (2009) Ireland Red List No. 3: Terrestrial Mammals, National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

McCorry, M. & Ryle, T. (2009). Saltmarsh Monitoring Project 2007-2008. Unpublished report to the National Parks and Wildlife Service, Dublin.

Reid, N., Hayden, B., Lundy, M.G., Pietravalle, S., McDonald, R.A. & Montgomery, W.I. (2013) National Otter Survey of Ireland 2010/12. Irish Wildlife Manuals No. 76. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

NPWS (2012a) Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2012b) Blackwater River (Cork/Waterford) SAC (site code 2170) Conservation objectives supporting document -coastal habitats. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2012c) Conservation Objectives: Blackwater Estuary SPA 004028. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015) Blackwater Estuary SPA 004028. Natura 2000 Form. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

IUCN 2014. IUCN Red List of Threatened Species. Version 2014.2. . Downloaded on August 2017.

BirdwatchIreland.ie  
<http://www.ramsar.org>  
<http://eunis.eea.europa.eu>  
 The Irish Wetland Bird Survey (IWeBS).

#### 6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

<no file available>

vi. other published literature

<no file available>

<no data available>

#### 6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Blackwater estuary ( National Parks and Wildlife Service, 2/6/2017 )



Blackwater estuary ( National Parks and Wildlife Service, 2/6/2017 )



Blackwater estuary ( National Parks and Wildlife Service, 2/6/2017 )



Blackwater estuary ( National Parks and Wildlife Service, 2/6/2017 )



Blackwater estuary ( National Parks and Wildlife Service, 2/6/2017 )



Blackwater estuary ( National Parks and Wildlife Service, 2/6/2017 )

#### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation 1996-06-07