



Ramsar Information Sheet

Published on 16 March 2022

Update version, previously published on : 30 May 1990

Ireland

Castlemaine Harbour



Designation date	30 May 1990
Site number	470
Coordinates	52°07'37"N 09°51'50"W
Area	2 973,00 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

Castlemaine Harbour Ramsar site is located within Dingle Bay in south west Ireland. The site is very sheltered due to the presence of three protruding sand spits on its seaward side. There are extensive intertidal habitats west of Cromane Point and within Rossbehy Creek together with areas of fringing saltmarsh. Saltmarshes, both of the Atlantic and Mediterranean types, are particularly well developed and extensive within the site and in the surrounding area. The site is important for wintering waterbirds, including internationally important numbers of Light-bellied Brent Geese and the extensive intertidal mud and sandflat habitats support Eelgrass, a key food resource for this species.

Castlemaine Harbour Ramsar site lies within the much more extensive Castlemaine Harbour Special Protection Area (SPA). The SPA has been designated for wintering waterbirds and provides good quality feeding and roosting habitats for an excellent diversity of waterbirds, including geese, waders, divers and seaduck. I-WeBS data (2010-2015) lists internationally important populations of the Light-bellied Brent Goose occurring at the site. A further 15 waterbird species occur at nationally important numbers. The site is also important for the Annex I species, Chough. These birds of the Crow family are regularly observed on the sand dunes adjacent to the site at Inch and Rosbehy where they feed and socialise.

The Ramsar site is also part of the extensive Castlemaine Harbour Special Area of Conservation (SAC). The SAC supports a number of species listed on Annex II of the Habitats Directive including: Sea Lamprey, Brook Lamprey, Salmon and Otter and a number of habitats listed on Annex I of the Habitats Directive including: intertidal mud and sand flat habitat, salt meadow, sand dune and sea cliff habitat types.

Castlemaine Harbour Ramsar site lies adjacent to Inch/Castlemaine Harbour Wildfowl Sanctuary. The Bay within which the Ramsar site lies is used extensively for the aquaculture of oysters, mussels and clams and holds the largest natural mussel bed in Ireland. The site is of outstanding aesthetic importance and has many properties that render it popular for recreational and tourism contexts.

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	7 Ely Place, Dublin D02TW98.

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	2004
To year	2019

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Castlemaine Harbour
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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 <input type="radio"/> No <input checked="" type="radio"/>
(Update) B. Changes to Site area	No change to area
(Update) For secretariat only. This update is an extension	<input type="checkbox"/>

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
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2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image
<2 file(s) uploaded>

Former maps	0
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Boundaries description

At designation in 1990 the Site extended across 923 ha, in 1999 the boundary of Castlemaine Harbour Ramsar site was extended and delineated as the same boundary as the original Special Protection Area in 1994 (but the latter was subsequently enlarged). The site lies within, and is integral to, the more extensive Castlemaine Harbour Special Area of Conservation and Special Protection Area (<https://www.npws.ie/protected-sites>). The SAC and SPA covers all of the intertidal and subtidal habitats within Castlemaine Harbour and include the sand dune spits of Inch and Rosbehy which form the entrance to Castlemaine. The SPA extends further west than the SAC to include the nearshore waters of Dingle Bay (within which Castlemaine Harbour lies). The Ramsar site is focused on the intertidal mudflats and sandflats of inner Castlemaine Harbour (west of Cromane Point) and within Rosbehy Creek which lies at the mouth of the harbour and is sheltered by the Rosbehy sand spit.

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 Mapping layers: Saltmarsh and 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 and variations in high and low water marks.

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

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	The complex of coastal, intertidal and estuarine habitats of Castlemaine Harbour are important for storm protection (mitigation of flooding and coastal erosion).
Other ecosystem services provided	Regulating The estuarine and intertidal habitats and the communities (plant and invertebrate) which they support are important for nutrient cycling, carbon sequestration and sediment trapping. With the cycling of carbon and nutrients estuarine systems have a role in climate regulation. 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. Cultural • Recreation and tourism (nature observation, nature-based tourism, recreation) Scientific and educational • Educational activities and opportunities (proximity to Tralee) • Important knowledge systems, importance for research • Long-term monitoring site (e.g. winter bird monitoring) Supporting Services: • Biodiversity (estuarine and coastal plant, invertebrate and animal communities)
Other reasons	The site contains representative and unique examples of near-natural wetland types within the Atlantic biogeographic region. These include extensive areas of intertidal sand flats and mudflats. Saltmarsh fringes the site and is extensive in the area surrounding it. Saltmarsh is protected under European legislation and is significant in the context of the Atlantic biogeographical area. The saltmarsh habitat provides characteristic examples of natural succession of this habitat from lower through to upper saltmarsh habitat and characteristic vegetation succession through these habitats. The intertidal habitats also supports beds of eelgrass (<i>Zostera noltii</i>).

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification	The assemblage of wintering birds including those of high (Red Listed in Ireland, Vulnerable in Europe and/or Globally) and medium (Amber Listed species in Ireland) conservation status contribute to biodiversity within the biogeographical region. The site supports a small bed of Eel grass and a significant stand is present in the wider site (within the SAC and SPA). (<i>Zostera noltii</i>) is known to be declining internationally, and is important in maintaining the biological diversity within the Atlantic biogeographic region and is an important foraging resource for wintering birds.
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- Criterion 4 : Support during critical life cycle stage or in adverse conditions

- Criterion 6 : >1% waterbird population

- Criterion 8 : Fish spawning grounds, etc.

Justification	This site is essential for the migration of Salmon into the Laune and Castlemaine Rivers and for access to spawning grounds. The species is protected in the freshwater environment under Annex II and Annex V of the EU Habitats Directive; considered to be Vulnerable in Europe (IUCN). The site is also a source of food for other fish species. The Irish Red Listed migratory European Eel along with River and Sea Lamprey migrate through the estuary to reach spawning grounds in the wider river catchment.
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3.2 - Plant species whose presence relates to the international importance of the site

Petalwort (*Petalophyllum ralfsii*) a thallose liverwort listed on Annex II of the EU Habitats Directive is present on the sand dunes at Inch. The sand dunes are not within the Ramsar site but are within the Castlemaine Harbour SAC and SPA. Petalwort is a Flora Protection Order species and is a Red Listed Species in Ireland (Least Concern).

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								
Others																	
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 species of the Habitats Directive	Annex II species of Habitats Directive, Appendix I of CITES, maintaining biodiversity
Fish, Mollusc and Crustacea																	
CHORDATA / CEPHALASPIDOMORPHI	<i>Lampetra fluviatilis</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 of Habitats Directive	Annex II of Habitats Directive, site provides migration path, maintaining 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 of Habitats Directive	Annex II of Habitats Directive, site provides migration path, maintaining biodiversity
CHORDATA / ACTINOPTERYGII	<i>Salmo salar</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"/>					<input type="checkbox"/>	<input type="checkbox"/>	Annex II of Habitats Directive, Red Listed in Ireland with Vulnerable Status.	Threatened species in Ireland, Annex II species in Europe, site provides migration path, maintaining biodiversity
Birds																	
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"/>	90	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Red Listed in Birds of Conservation Concern in Ireland.	Red Listed in Ireland, 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"/>	159	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland	Part of wintering assemblage, maintaining biological diversity.
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"/>	3110	2011-2015			<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland.	Red Listed in Ireland, part of wintering assemblage.
CHORDATA / AVES	<i>Aythya ferina</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		VU	<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland.	Red Listed in Ireland, part of wintering assemblage.
CHORDATA / AVES	<i>Aythya fuligula</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"/>	4	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland	Part of wintering assemblage, maintaining biological diversity.
CHORDATA / AVES	<i>Aythya marila</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"/>	9	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable classification IUCN Europe region, Amber listed bird of conservation concern in Ireland	Vulnerable classification IUCN Europe region, wintering bird assemblage.
CHORDATA / AVES	<i>Branta bernicla hrota</i>	<input 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"/>	1125	2011-2015	2.8		<input type="checkbox"/>	<input type="checkbox"/>	Amber listed bird of conservation concern in Ireland.	Internationally significant population (hrota, Canada & Greenland/Ireland) winters at this site. Part of wintering assemblage.
CHORDATA / AVES	<i>Calidris alpina 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"/>	1098	2011-2015			<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland.	Red Listed in Ireland, part of wintering assemblage.
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"/>	245	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland	Part of wintering assemblage, maintaining biological diversity.
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"/>	10	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland	Part of wintering assemblage, maintaining biological diversity.
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"/>	37	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive)	Annex I of Birds Directive
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	Part of wintering assemblage, maintaining biological diversity.

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>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"/>	10	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive), Amber-listed in Birds of Conservation Concern in Ireland and Vulnerable classification IUCN Europe region.	National and European threat status, part of wintering assemblage.
CHORDATA/AVES	<i>Gavia stellata</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	Annex I of Birds Directive, part of wintering assemblage.
CHORDATA/AVES	<i>Haematopus ostralegus</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"/>	638	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Amber Listed in Birds of Conservation Concern in Ireland.	Part of wintering assemblage, maintaining biological diversity
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"/>	315	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive), Amber-listed in Birds of Conservation Concern in Ireland	Annex I of Birds Directive, part of wintering assemblage.
CHORDATA/AVES	<i>Limosa limosa</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"/>	132	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable IUCN classification for Europe region. Amber-listed in Birds of Conservation Concern in Ireland	Vulnerable status in Europe, part of wintering 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"/>	486	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland and Vulnerable classification IUCN Europe region.	Vulnerable in Europe, Red Listed in Ireland, part of wintering assemblage.
CHORDATA/AVES	<i>Phalacrocorax carbo</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"/>	50	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber Listed in Birds of Conservation Concern in Ireland	Part of wintering assemblage, maintaining biological diversity
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"/>	242	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Listed on Annex I (Birds Directive), Red-listed in Birds of Conservation Concern in Ireland.	Annex I listing, part of wintering 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"/>	95	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Amber-listed in Birds of Conservation Concern in Ireland	Part of wintering assemblage, maintaining biological diversity.
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"/>	766	2011-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	Red Listed in Birds of Conservation Concern in Ireland	Red Listed in Ireland, part of wintering 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"/>	506	2011-2015		NT	<input type="checkbox"/>	<input type="checkbox"/>	Red-listed in Birds of Conservation Concern in Ireland	Red Listed in Ireland, part of wintering 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. Castlemaine Harbour 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

IWeBS data (from the period 2006/07 to 2015/16) shows the site supports important populations of an assemblage of wintering birds including internationally important populations of the Light-bellied Brent Goose. Light-bellied Brent Goose is an Amber-listed species in Ireland. The European population is assessed as Vulnerable as several important populations have declined.

Castlemaine Harbour is a designated 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: Red-throated Diver (*Gavia stellata*), Cormorant (*Phalacrocorax carbo*), Light-bellied Brent Goose (*Branta bernicla hrota*), Wigeon (*Anas penelope*), Mallard (*Anas platyrhynchos*), Pintail (*Anas acuta*), Scaup (*Aythya marila*), Common Scoter (*Melanitta nigra*), Oystercatcher (*Haematopus ostralegus*), Ringed Plover (*Charadrius hiaticula*), Sanderling (*Calidris alba*), Bar-tailed Godwit (*Limosa lapponica*), Redshank (*Tringa totanus*), Greenshank (*Tringa nebularia*), Turnstone (*Arenaria interpres*). Under this SPA designation the wetland habitat is also protected as a resource for the regularly-occurring migratory waterbirds that utilise it. It is also important for the Annex I species, Chough (*Pyrrhocorax pyrrhocorax*).

The site is important for Sea Lamprey (*Petromyzon marinus*), a scarce, though probably under-recorded species listed on Annex II of the E.U. Habitats Directive. River Lamprey (*Lampetra fluviatilis*) also listed on Annex II, occur within the site. While spending their adult life in estuaries and/or further out to sea, these Lamprey species like Atlantic Salmon (*Salmo salar*) rely on the rivers connected to Castlemaine Harbour to spawn. Atlantic salmon is protected in the freshwater environment under Annex II and Annex V of the EU Habitats Directive; considered to be Vulnerable in Europe (IUCN). River and Sea Lamprey and Atlantic Salmon are Red Listed species in Ireland; the two Lamprey species are classified as Least Concern, while Atlantic Salmon is Vulnerable (King et al., 2011). The Otter is widely distributed throughout Castlemaine and its catchment and has been protected in Ireland under national legislation since 1976 (Wildlife Act 1976) and is listed on Annex II and Annex IV of the EU Habitats Directive. According to Marnell et al., (2009) the Otter is deemed Near Threatened within Ireland as this species has shown a decline of 20-25% between 1980 and 2006, with most of that occurring in the first decade (i.e. 1980-1990), the cause of this decline is unclear. The IUCN deem the Eurasian Otter to be Near Threatened within Europe and globally.

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
Zostera noltii community	<input checked="" type="checkbox"/>	The site supports a small bed of eelgrass.	This habitat has a restricted distribution in Ireland. It is considered threatened on the Oskar list of threatened or declining habitats

[Optional text box to provide further information](#)

The most significant zostera beds occur outside of the Ramsar site, due east of Inch Strand. Subtidal natural mussel beds form part of the mixed sediment community complex which lies adjacent to the Ramsar Site (outside of the Ramsar site but within the Castlemaine Harbour SAC). There are no natural mussel beds within the Ramsar site.

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

4.1 - Ecological character

Castlemaine Harbour Ramsar site lies at the head of Dingle Bay in South West Ireland. The site is a sheltered complex of intertidal sand and mud flats fringed by saltmarsh. It is protected from the sea by three extensive sand bars which themselves support a complex of dune and saltmarsh habitats. The two sand bars, which form a barrier to the inner bay, are separated by a gap of 1.5km. The tidal regime within the site has caused a complex of shifting sands and muds largely comprised of fine to muddy fine sand dominated by polychaetes. The intertidal flats provide good quality feeding habitat for an excellent diversity of waterbirds. The site also supports a number of species listed on Annex II of the Habitats Directive i.e. Sea Lamprey, Brook Lamprey, Atlantic Salmon and Otter. The site is estuarine and two substantial river networks drain into Castlemaine Harbour at its western end: the River Maine and the River Laune. Castlemaine Harbour is used extensively for aquaculture (oysters, mussels and clams). Natural mussel beds lie outside of the Ramsar site and shellfish cultivation exists within the Ramsar site.

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	0		
E: Sand, shingle or pebble shores		4		
F: Estuarine waters	Estuarine waters	2	696	Representative
G: Intertidal mud, sand or salt flats	Intertidal mudflats and sandflats	1	2247	Representative
H: Intertidal marshes	Saltmarsh	3	27	Representative

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

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

Invasive alien plant species

Phylum	Scientific name	Impacts	Changes at RIS update
TRACHEOPHYTALILIOPSIDA	<i>Spartina anglica</i>	Actual (minor impacts)	No change

Optional text box to provide further information

The most extensive bed of Eelgrass lies on the inland side of Inch Strand and is not within the Ramsar Site.

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>Anas platyrhynchos</i>				
CHORDATA/AVES	<i>Ardea cinerea</i>				
CHORDATA/AVES	<i>Arenaria interpres</i>				
CHORDATA/AVES	<i>Calidris alba</i>				
CHORDATA/AVES	<i>Charadrius hiaticula</i>				
CHORDATA/AVES	<i>Chroicocephalus ridibundus</i>				
CHORDATA/AVES	<i>Larus argentatus</i>				
CHORDATA/AVES	<i>Larus canus</i>				
CHORDATA/AVES	<i>Larus marinus</i>				
CHORDATA/AVES	<i>Melanitta nigra</i>				
CHORDATA/AVES	<i>Mergus serrator</i>				
MOLLUSCA/BIVALVIA	<i>Mytilus edulis</i>				
CHORDATA/AVES	<i>Phalacrocorax aristotelis</i>				
CHORDATA/MAMMALIA	<i>Phoca vitulina</i>				
CHORDATA/AVES	<i>Pluvialis squatarola</i>				
CHORDATA/AVES	<i>Pyrhhorax pyrrhcorax</i>				
CHORDATA/AVES	<i>Tringa nebularia</i>				

Optional text box to provide further information

The site supports a range of wintering birds which do not meet the Ramsar criteria but which are of importance as part of the wintering bird assemblage and for biodiversity.
 The Annex I Birds Directive species, Chough use the sand dune habitats (which lie outside the Ramsar site) for foraging and socialising.
 Harbour seal (*Phoca vitulina*) occurs in small numbers within the site and is protected under national and European legislation.
 Subtidal natural mussel beds (*Mytilus edulis*) form part of the mixed sediment community complex which lies adjacent to the Ramsar Site (outside of the Ramsar site but within the Castlemaine Harbour 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.

Atlantic Ocean

4.4.3 - Soil

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.

Castlemaine Harbour Ramsar site includes the estuaries of the River Laune, Maine, Caragh, Emlagh and Behy Rivers. These rivers flow into the vast shallow enclosed bay which is comprised of extensive areas of intertidal and shallow sublittoral sand and mud flats. The site is subject to considerable tidal variation (up to 4.5m) which in combination with winds and freshwater discharge from the rivers gives rise to highly mobile sediment patterns and many banks of shifting sand. Wave exposure within the site is limited by the protection afforded by the spits at Rosbehy and Inch, and ranges from sheltered to very sheltered. The inflow from the various rivers, all of which arise from one of the wettest parts of Ireland, brings with it large amounts of sediment, nutrients and detritus. This input is an essential component of the productivity of the site for wintering waterfowl and aquaculture production.

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

Significant transportation of sediments occurs on or through the site

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

Sediment regime is highly variable, either seasonally or inter-annually

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

Sediment regime unknown

Please provide further information on sediment (optional):

Saltmarshes occur within the site, accretion and erosion are natural elements of Saltmarsh systems. According to McCorry & Ryle (2009) there is a significant erosional trend acting on the saltmarsh and shoreline of Cromane and this means that the saltmarsh will continue to be vulnerable both by erosion and from damage caused by coastal protection to protect farmland and dwellings built on low-lying land behind berms. The outer (western) faces of the Inch and Rosbehy spits are subject to full exposure from Atlantic swells and the prevailing south westerly winds. These conditions give rise to the annual erosion and recharge cycles of the dune systems which form the spits which form a barrier to the west of the 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

Mixohaline (brackish)/Mixosaline (0.5-30 g/l)

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

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

Unknown

Please provide further information on dissolved or suspended nutrients (optional):

Transitional Waterbody WFD Status 2010-2015 for Castlemaine Harbour is "unpolluted"; the water body is deemed "Not at Risk"

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 area surrounding the site is largely comprised of areas of open marine water to the west of the site and low lying agricultural grassland. Agriculture is the main activity within the surrounding area and this is typically cattle and silage production in the low lying areas, with limited sheep grazing. There is also limited commercial forestry adjacent to the site. A lot of dispersed housing occurs in the surrounding area. There are a number of towns in the areas surrounding the site i.e. Killorglin and Castlemaine.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Medium

Regulating Services

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

Cultural Services

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

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	Carbon storage/sequestration	not relevant for site
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	not relevant for 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 checked="" 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 surrounding area is largely under multiple private ownership.

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.
 Kerry County Council.
 Environmental Protection Agency (EPA).
 Department of Communications, Climate Action and Environment.
 Marine Institute.
 Western Regional Fisheries Board.

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	Medium impact	High impact	<input checked="" type="checkbox"/>	No change	<input checked="" 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	Medium impact		<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change
Marine and freshwater aquaculture	High impact	unknown 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	High impact		<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Unspecified/others			<input checked="" type="checkbox"/>		<input type="checkbox"/>	

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	Medium impact	High impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Unspecified			<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Agricultural and forestry effluents	Medium impact		<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Climate change and severe weather

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

Please describe any other threats (optional):

According to McCorry & Ryle (2009) there is a significant erosional trend acting on the saltmarsh and shoreline of Cromane and this means that the saltmarsh will continue to be vulnerable both by erosion and from damage caused by coastal protection to protect farmland and dwellings built on low-lying land behind berms.
 Bait digging occurs on the mudflats at low tide. This activity may be resulting in disturbance to feeding and roosting bird species and to beds of *Zostera noltii*.
 Recreational activities: horse riding, car driving and dog walking in the Rosbehy area may have a negative impact on the birds there.
 Colonisation of the sandflats by *Spartina anglica* is a threat to this ecosystem.
 Silage production in the surrounding area has the potential to lead to nutrient run-off into the site.
 Threats listed above are taken from NPWS (2015b, 2015c) and McCorry & Ryle (2009).

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	Castlemaine Harbour SAC Site Code 0003436	https://www.npws.ie/protected-sites/sac/000343	whole
EU Natura 2000	Castlemaine Harbour SPA Site Code 0004029	https://www.npws.ie/protected-sites/spa/0004029	whole

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Nature Reserve	Castlemaine Harbour	NPWS.ie	partly
Wildfowl Sanctuary	Inch and Rosbehy	https://www.npws.ie/protected-sites/wildfowl-sanctuaries	partly

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
Improvement of water quality	Implemented
Catchment management initiatives/controls	Implemented
Habitat manipulation/enhancement	Implemented
Land conversion controls	Implemented

Species

Measures	Status
Threatened/rare species management programmes	Implemented
Control of invasive alien plants	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
Communication, education, and participation and awareness activities	Implemented

Other:

The Castlemaine Harbour Ramsar site lies within the Castlemaine Harbour SAC (003436) and Castlemaine Harbour SPA (004029). Under European and national legislation, Ireland must maintain at favourable conservation status areas designated as Special 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 have been set for this SAC and SPA. They are listed below and can be accessed on NPWS.ie.

- To maintain or restore the favourable conservation condition of the Annex I habitat(s) for which the SAC has been selected: 1130 Estuaries, 1140 Mudflats and sandflats not covered by seawater at low tide, 1210 Annual vegetation of drift lines, 1220 Perennial vegetation of stony banks, 1310 Salicornia and other annuals colonizing mud and sand, 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritima*), 1395 Petalwort *Petalophyllum ralfsii*, 1410 Mediterranean salt meadows (*Juncetalia maritimi*), 2110 Embryonic shifting dunes, 2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"), 2130 *Fixed coastal dunes with herbaceous vegetation ("grey dunes"), 2170 Dunes with *Salix repens* ssp. *argentea* (*Salix arenariae*) 2190 Humid dune slacks, 91E0* Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)
- To maintain or restore the favourable conservation condition of the Annex II species(s) for which the SAC has been selected: 1095 Sea lamprey (*Petromyzon marinus*), 1099 River lamprey (*Lampetra fluviatilis*), 1106 Atlantic salmon (*Salmo salar*) (only in fresh water), 1355 Otter (*Lutra lutra*)
- 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. Castlemaine Harbour 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
Water quality	Implemented
Plant species	Implemented
Plant community	Implemented
Animal community	Implemented
Birds	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 site is sampled and monitored under this programme. As a EU Natura 2000 site, it is required under Article 12 and 17 of the EU Birds and Habitats Directives respectively, that the status and trends of the conservation objectives within the site are monitored and reported on every 6 years. 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

King, J.L., Marnell, F., Kingston, N., Rosell, R., Boylan, P., Caffrey, J.M., FitzPatrick, Ú., Gargan, P.G., Kelly, F.L., O'Grady, M.F., Poole, R., Roche, W.K. & Cassidy, D. (2011) Ireland Red List No. 5: Amphibians, Reptiles & Freshwater Fish. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Lewis, L. J., Burke, B., Fitzgerald, N., Tierney, T. D. & Kelly, S. 2019. Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10-2015/16. Irish Wildlife Manuals, No. 106. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

McCorry, M. & Ryle, T. (2009). Saltmarsh Monitoring Project 2007-2008. Volume 2. Unpublished report to the National Parks and Wildlife Service, Dublin.

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.

Trewby, M., Gray, N., Cummins, S., Thomas, G., & Newton, S. 2007. 'The status and ecology of the Chough *Pyrrhocorax pyrrhocorax* in the Republic of Ireland, 2002-2005.' Unpublished report to BirdWatch Ireland.

NPWS (2011) Conservation Objectives: Castlemaine Harbour SAC 000343 and Castlemaine Harbour SPA 004029. Version 2.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015a) Site Synopsis for Castlemaine Harbour SAC 000343. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015b) Natura 2000 Form for Castlemaine Harbour SAC 000343. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014) Site Synopsis for Castlemaine Harbour SPA 004029. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015c) Natura 2000 Form for Castlemaine Harbour SPA 004029. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

IUCN 2017. The IUCN Red List of Threatened Species. Version 2017-2. <http://www.iucnredlist.org>. Downloaded on 14 October 2017.

Birdwatchireland.ie

<http://eunis.eea.europa.eu>

<http://www.gis.epa.ie>

The Irish Wetland Bird Survey (I-WeBS).

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:



Castlemaine Harbour (NPWS, May 2013)



Castlemaine Harbour (NPWS, May 2013)



Castlemaine Harbour (NPWS, May 2013)



Castlemaine Harbour (NPWS, May 2013)



Castlemaine Harbour (NPWS, May 2013)

6.1.4 - Designation letter and related data

Designation letter

<2 file(s) uploaded>

Date of Designation