

National Parks and Wildlife Service

Conservation Objectives Series

Ballyteige Burrow SAC 000696



An Roinn
Ealaíon, Oidhreachta agus Gaeltachta

Department of
Arts, Heritage and the Gaeltacht



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The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

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

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

* indicates a priority habitat under the Habitats Directive

000696 Ballyteige Burrow SAC

- 1130 Estuaries
- 1140 Mudflats and sandflats not covered by seawater at low tide
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- 1220 Perennial vegetation of stony banks
- 1310 *Salicornia* and other annuals colonising mud and sand
- 1320 *Spartina* swards (*Spartinion maritimae*)
- 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
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- 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)
- 2110 Embryonic shifting dunes
- 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*
- 2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea**)

Please note that this SAC overlaps with Ballyteige Burrow SPA (004020). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping site as appropriate.

Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: www.npws.ie/Publications

NPWS Documents

Year :	1999
Title :	National Shingle Beach Survey of Ireland 1999
Author :	Moore, D.; Wilson, F.
Series :	Unpublished Report to NPWS
Year :	2006
Title :	A survey of intertidal mudflats and sandflats in Ireland
Author :	Aquafact
Series :	Unpublished report to NPWS
Year :	2007
Title :	Saltmarsh Monitoring Project 2006
Author :	McCorry, M.
Series :	Unpublished report to NPWS
Year :	2007
Title :	Inventory of Irish coastal lagoons (version 2)
Author :	Oliver, G.
Series :	Unpublished report to NPWS
Year :	2009
Title :	Coastal Monitoring Project 2004-2006
Author :	Ryle, T.; Murray, A.; Connolly, K.; Swann, M.
Series :	Unpublished report to NPWS
Year :	2009
Title :	Saltmarsh monitoring project 2007-2008
Author :	McCorry, M.; Ryle, T.
Series :	Unpublished report to NPWS
Year :	2013
Title :	Monitoring survey of Annex I sand dune habitats in Ireland
Author :	Delaney, A., Devaney, F.M, Martin, J.M. and Barron, S.J.
Series :	Irish Wildlife Manual No. 75
Year :	2014
Title :	Ballyteige Burrow SAC (site code: 696) Conservation objectives supporting document- coastal habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2014
Title :	Ballyteige Burrow SAC (site code: 696) Conservation objectives supporting document- coastal lagoons V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2014
Title :	Ballyteige Burrow SAC (site code: 696) Conservation objectives supporting document- marine habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	2003
Title :	<i>Spartina</i> in Ireland. In: Wetlands in Ireland
Author :	McCorry, M.J.; Curtis, T.G.F.; Otte, M.L.
Series :	UCD Press, Dublin
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Year :	2008
Title :	The phytosociology and conservation value of Irish sand dunes
Author :	Gaynor, K.
Series :	Unpublished PhD thesis, National University of Ireland, Dublin
<hr/>	
Year :	2012
Title :	Intertidal benthic survey of Ballyteige Burrow SAC and Ballyteigue Burrow SPA
Author :	MERC
Series :	Unpublished report to the Marine Institute and NPWS
<hr/>	
Year :	2012
Title :	Subtidal benthic survey of Ballyteige Burrow SAC and Ballyteigue Burrow SPA
Author :	MERC
Series :	Unpublished report to the Marine Institute and NPWS
<hr/>	
Year :	2013
Title :	Monitoring and assessment of Irish lagoons for the purposes of the EU Water Framework Directive, 2009-2011. Parts 1 and 2
Author :	Roden, C.M; Oliver, G.A.
Series :	Unpublished report to the Environmental Protection Agency
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Spatial data sources

Year :	2010
Title :	EPA WFD transitional waterbody data
GIS Operations :	Clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1130 (map 3)
Year :	Interpolated 2014
Title :	Intertidal surveys 2006, 2011; subtidal survey 2011
GIS Operations :	Polygon feature classes from marine community types base data sub-divided based on interpolation of marine survey data. Expert opinion used as necessary to resolve any issues arising
Used For :	1140, Marine community types (maps 4 and 5)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	High water mark (HWM) and low water mark (LWM) polyline feature classes converted into polygon feature classes and combined; EU Annex I Saltmarsh and Coastal data erased out if present
Used For :	Marine community types base data (map 5)
Year :	Revision 2011
Title :	Inventory of Irish Coastal Lagoons. Version 3
GIS Operations :	Clipped to SAC boundary
Used For :	1150 (map 6)
Year :	Revision 2010
Title :	Saltmarsh Monitoring Project 2007-2008. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary; overlapping regions with Coastal CO data investigated and resolved with expert opinion used
Used For :	1310, 1330, 1410, 1420 (map 7)
Year :	Revision 2012
Title :	National Shingle Beach Survey
GIS Operations :	Clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1210, 1220 (map 8)
Year :	2013
Title :	Sand Dune Monitoring Project 2011. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary; overlapping regions with Saltmarsh CO data investigated and resolved with expert opinion used
Used For :	1210, 2110, 2120, 2130, 2150 (map 8)

1130 Estuaries

To maintain the favourable conservation condition of Estuaries in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated as 237ha using OSi data and the defined Transitional Water Body area under the Water Framework Directive
Community distribution	Hectares	Conserve the following community types in a natural condition: Mixed sediment to sand with nematodes and <i>Tubificoides benedii</i> community complex; Sand with crustaceans and <i>Nephtys hombergii</i> community complex. See map 5	Based on intertidal and subtidal surveys undertaken in 2006 (Aquafact, 2007) and 2011 (MERC, 2012). See marine habitats supporting document for further information

Conservation Objectives for : Ballyteige Burrow SAC [000696]

1140 Mudflats and sandflats not covered by seawater at low tide

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 4	Habitat area was estimated using OSi data as 201ha
Community distribution	Hectares	Conserve the following community type in a natural condition: Mixed sediment to sand with nematodes and <i>Tubificoides benedii</i> community complex. See map 5	Based on intertidal surveys undertaken in 2006 (Aquafact, 2007) and 2011 (Merc, 2012). See marine supporting document for further information

Conservation Objectives for : Ballyteige Burrow SAC [000696]

1150 Coastal lagoons

To restore the favourable conservation condition of Coastal lagoons in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable, subject to slight natural variation. Favourable reference area 12.5ha. See map 6	Area calculated from spatial data derived from Oliver, 2007. Site code IL008 (Ballyteige channels). See lagoons supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 6	Site IL008 in Oliver, 2007. See lagoons supporting document for further details
Salinity regime	Practical salinity units (psu)	Median annual salinity and temporal variation within natural range	A range of salinities from 34psu near seepage streams to freshwater can be found. See lagoons supporting document for further details
Hydrological regime	Metres	Annual water level fluctuations and minima within natural range	Maximum depth of Ballyteige channels is recorded as less than 3m. See lagoons supporting document for further details
Barrier: connectivity between lagoon and sea	Permeability	Appropriate hydrological connections between lagoon and sea, including where necessary, appropriate management	The Ballyteige channels are artificial; water is pumped westward into the Cull and south eastwards into the sea west of Kilmore Quay. See lagoons supporting document for further details
Water quality: Chlorophyll <i>a</i>	µg/L	Annual median chlorophyll <i>a</i> within natural range and less than 5µg/L	Target based on Roden and Oliver (2013). See lagoons supporting document for further details
Water quality: Molybdate Reactive Phosphorus (MRP)	mg/L	Annual median MRP within natural range and less than 0.1mg/L	Target based on Roden and Oliver (2013). See lagoons supporting document for further details
Water quality: Dissolved Inorganic Nitrogen (DIN)	mg/L	Annual median DIN within natural range and less than 0.15mg/L	Target based on Roden and Oliver (2013)
Depth of macrophyte colonisation	Metres	Macrophyte colonisation to at least 2m depth	Increased depth of colonisation increases both the extent and diversity of submergent macrophytes. Where the lagoon is less than 2m deep, it is expected that macrophyte colonisation would extend to the full depth. See lagoons supporting document for further details
Typical plant species	Number and m ²	Maintain number and extent of listed lagoonal specialists, subject to natural variation	Species listed in Oliver, 2007. See lagoons supporting document for further details
Typical animal species	Number	Maintain listed lagoon specialists, subject to natural variation	Species listed in Oliver, 2007. See lagoons supporting document for further details
Negative indicator species	Number and % cover	Negative indicator species absent or under control	Low salinity, shallow water and elevated nutrient levels increase the threat of unnatural encroachment by reedbeds. See lagoons supporting document for further details

1210 Annual vegetation of drift lines

To maintain the favourable conservation condition of Annual vegetation of drift lines in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. Ballyteige - 0.66ha. See map 8	Based on data from the Sand Dunes Monitoring Project (Delaney et al., 2013). One sub-site were mapped giving a total estimated area of 0.66ha. NB further unsurveyed areas maybe present within the site. Habitat is very difficult to measure in view of its dynamic nature which means that it can appear and disappear within a site from year to year. This habitat is very much reduced at Ballyteige due to effects of tidal currents. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 8	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Accumulation of organic matter in tidal litter is essential for trapping sand and initiating dune formation. The coastal spit at Ballyteige Burrow is dynamic and strongly influenced by tidal currents. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Delaney et al. (2013). At Ballyteige there are transistions between dune habitats as well as zonations to saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sea rocket (<i>Cakile maritima</i>), sea sandwort (<i>Honckenya peploides</i>), prickly saltwort (<i>Salsola kali</i>) and orache (<i>Atriplex</i> spp.)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details

Conservation Objectives for : Ballyteige Burrow SAC [000696]

1220 Perennial vegetation of stony banks

To maintain the favourable conservation condition of Perennial vegetation of stony banks in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession	Total area unknown. The Coastal Monitoring Project (CMP) mapped a narrow band of shingle vegetation along the strand at Ballyteige Burrow (0.506ha) (Ryle et al., 2009). See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 8 for mapped locations	Current distribution unknown. Shingle known to occur at Ballyteige. The National Shingle Beach Survey noted a number of shingle based grasslands between the dunes (Moore and Wilson, 1999). See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Based on data from Moore and Wilson (1999). Shingle features are relatively stable in the long term. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Moore and Wilson (1999). Transitions to intertidal, saltmarsh and sand dune habitats occur at this site. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the typical vegetated shingle flora including the range of sub-communities within the different zones	Based on data from Moore and Wilson (1999). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Moore and Wilson (1999). Negative indicators include non-native species indicative of changes in nutrient status and species not considered characteristic of the habitat. See coastal habitats supporting document for further details

Conservation Objectives for : Ballyteige Burrow SAC [000696]

1310 *Salicornia* and other annuals colonising mud and sand

To maintain the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Ballyteige - 3.13ha. See map 7	Based on data from Saltmarsh Monitoring Project (SMP) (McCorry, 2007). Habitat recorded at one of the two sub-sites surveyed and mapped, giving a total estimated area of 3.13ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 7 for known distribution	Based on data from McCorry (2007). <i>Salicornia</i> is an annual species, so its distribution can vary significantly from year to year. See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain, or where necessary restore, natural circulation of sediments and organic matter, without any physical obstructions	Sediment supply is particularly important for pioneer saltmarsh communities, as the distribution of this habitat depends on accretion rates. See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). Creeks deliver sediment throughout saltmarsh system. At Ballyteige, the topography is not as well-developed as at other sites. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	This pioneer saltmarsh community requires regular tidal inundation. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Ballyteige there is a natural transition from ASM communities to <i>Salicornia</i> flats to intertidal flats. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry (2007). See coastal habitats supporting document for details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for details
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities with typical species listed in SMP (McCorry and Ryle, 2009)	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>). No new sites for this species and an annual spread of less than 1% where it is already known to occur	Based on data from McCorry (2007). See coastal habitats supporting document for further details

Conservation Objectives for : Ballyteige Burrow SAC [000696]

1320 Spartina swards (Spartinion maritimae)

Spartina swards (Spartinion maritimae) was originally listed as a qualifying Annex I habitat for Ballyteige Burrow SAC. However, all stands of cordgrass in Ireland are now regarded as common cordgrass (*S. anglica*) (McCorry et al., 2003; McCorry and Ryle, 2009), an alien invasive species. Thus, no conservation objective has been prepared for this habitat. It will therefore not be necessary to assess the likely effects of plans or projects against this Annex I habitat.

Attribute	Measure	Target	Notes
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Conservation Objectives for : Ballyteige Burrow SAC [000696]

1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

To restore the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Ballyteige - 20.62ha; Duncormick - 6.11ha. See map 7	Based on data from Saltmarsh monitoring Project (SMP) (McCorry, 2007). Two sub-sites that supported Atlantic salt meadows (ASM) were mapped, giving a total estimated area of 26.73ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 7 for known distribution	Based on data from McCorry (2007). At Ballyteige there are signs that the saltmarsh is increasing in extent along the inner part of the intertidal and estuarine area. At Duncormick there are some signs of natural erosion along the edge of the saltmarsh in the small bay. See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). The eastern portion of the intertidal system at Duncormick was reclaimed in the last century by the construction of the Cull Bank and is now polder land. The drains and pumping station of the polder are maintained by the Drainage Department of the Office of Public Works (OPW). See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). At Ballyteige the main part of the ASM has few salt pans and minor creeks. At Duncormick the saltmarsh has been disturbed by reclamation works in the past. Drainage has affected the creek and salt pan structure and this is still having a residual impact. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Ballyteige there is a gradient from saltmarsh to intertidal flats. Also at Ballyteige there is a natural transition along the landward boundary from ASM to fixed dune vegetation, which is a rare feature on Irish saltmarsh/dune systems. Mosaics of ASM and MSM occur at Duncormick. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry (2007). At Ballyteige, the saltmarsh vegetation is heavily grazed by rabbits (<i>Oryctolagus cuniculus</i>). At Duncormick, signs of recent grazing are absent. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% area outside creeks vegetated	Based on data from McCorry (2007). At Ballyteige, some of the saltmarsh is damaged by vehicle use. At Duncormick some light poaching was noted (though no signs of recent grazing). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details

Vegetation structure: negative indicator species - <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1% where it is known to occur	Based on data from McCorry (2007). At Duncormick, <i>Spartina</i> occurs only occasionally. At Ballyteige, <i>Spartina</i> has mainly colonised intertidal mudflats as well as the mid-lower zone of the ASM and most of the ASM west of the Cull Bank. See coastal habitats supporting document for further details
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Conservation Objectives for : Ballyteige Burrow SAC [000696]

1410 Mediterranean salt meadows (*Juncetalia maritimi*)

To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Ballyteige - 2.92ha; Duncormick - 0.11ha. See map 7	Based on data from the Saltmarsh Monitoring Project (SMP) (McCorry, 2007). Two sub-sites that support Mediterranean salt meadows (MSM) were mapped, giving a total estimated area of 3.03ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 7 for known distribution	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). The eastern portion of the intertidal system at Duncormick was reclaimed in the last century by the construction of the Cull Bank and is now polder land. The drains and pumping station of the polder are maintained by the Drainage Department of the Office of Public Works (OPW). See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). At Ballyteige the topography is not well-developed. At Duncormick the saltmarsh has been disturbed by reclamation works in the past. Drainage has affected the creek and salt pan structure and this is still having a residual impact. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Mediterranean salt meadows is found high up in the saltmarsh but requires occasional tidal inundation. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Ballyteige there is a gradient from saltmarsh to intertidal flats. Also at Ballyteige there is a natural transition along the landward boundary from ASM to fixed dune vegetation, which is a rare feature on Irish saltmarsh/dune systems. Mosaics of ASM and MSM occur at Duncormick. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation in the sward	Based on data from McCorry (2007). At Ballyteige, the saltmarsh vegetation is heavily grazed by rabbits (<i>Oryctolagus cuniculus</i>). At Duncormick, signs of recent grazing are absent. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry (2007). At Ballyteige, some of the saltmarsh is damaged by vehicle use. At Duncormick some light poaching was noted (though no signs of recent grazing). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with characteristic species listed in SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1% where it is already known to occur.	Based on data from McCorry (2007). At Duncormick, <i>Spartina</i> occurs only occasionally. At Ballyteige, <i>Spartina</i> has mainly colonised intertidal mudflats as well as the mid-lower zone of the ASM and most of the ASM west of the Cull Bank. See coastal habitats supporting document for further details

Conservation Objectives for : Ballyteige Burrow SAC [000696]

1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

To restore the favourable conservation condition of Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Ballyteige - 0.73ha. See map 7	Based on data from the Saltmarsh Monitoring Project (SMP) (McCorry, 2007). One sub-site that supports Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) was mapped giving a total estimated area of 0.73ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 7 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). Halophilous scrub occurs in mosaic with ASM at Ballyteige, as well as amongst lower zone vegetation. It also was recorded by the SMP in sheltered areas in bands along the edge of the sand dunes. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within the sward	Based on data from McCorry (2007). Saltmarsh along the western part of Ballyteige Burrow is havily grazed by rabbits (<i>Oryctolagus cuniculus</i>). See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry (2007). Some of the saltmarsh at Ballyteige is damaged by vehicle use. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009)	Halophilous scrub is characterised by the precence of perennial glasswort (<i>Sarcocornia perennis</i>). See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - <i>Spartina angelica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with annual spread of less than 1%.	Based on data from McCorry (2007). <i>Spartina</i> swards were recorded frequently at Ballyteige. <i>Spartina</i> seems to provide new habitat for colonisation by perennial glasswort (<i>Sarcocornia perennis</i>). See coastal habitats supporting document for further details

2110 Embryonic shifting dunes

To maintain the favourable conservation condition of Embryonic shifting dunes in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Ballyteige Burrow - 0.43ha. See map 8	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat mapped at one sub-site to give a total estimated area of 0.43ha. Habitat is very difficult to measure in view of its dynamic nature. The embryo dunes at Ballyteige are limited in extent. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 8 for known distribution	Based on data from Delaney et al. (2013). The coastal spit at Ballyteige Burrow is dynamic and strongly influenced by tidal currents. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Delaney et al. (2013). At Ballyteige there are transitions between dune habitats as well as zonations to saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation composition: plant health of foredune grasses	Percentage cover	More than 95% of sand couch grass (<i>Elytrigia juncea</i>) and/or lyme grass (<i>Leymus arenarius</i>) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sand couch grass (<i>Elytrigia juncea</i>) and/or lyme grass (<i>Leymus arenarius</i>)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-native species) to represent less than 5% cover	Based on data from Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (<i>Hippophae rhamnoides</i>) should be absent or effectively controlled. See coastal habitats supporting document for further details

Conservation Objectives for : Ballyteige Burrow SAC [000696]

2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)

To maintain the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes including erosion and succession. For sub-site mapped: Ballyteige Burrow - 8.11ha. See map 8	Habitat was mapped during the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat mapped at one sub-site to give a total estimated area of 8.11ha. Habitat is very difficult to measure in view of its dynamic nature. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 8 for known distribution	Based on data from Delaney et al. (2013). This habitat occurs along the length of the beach at Ballyteige. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Based on data from Delaney et al. (2013). Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Marram grass (<i>Ammophila arenaria</i>) reproduces vegetatively and requires constant accretion of fresh sand to maintain active growth encouraging further accretion. The coastal spit at Ballyteige is dynamic and strongly influenced by tidal currents. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al.(2013). At Ballyteige there are transitions between dune habitats as well as excellent zonation to saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation composition: plant health of dune grasses	Percentage cover	More than 95% of marram grass (<i>Ammophila arenaria</i>) and/or lyme grass (<i>Leymus arenarius</i>) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities dominated by marram grass (<i>Ammophila arenaria</i>) and/or lyme-grass (<i>Leymus arenarius</i>)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Delaney et al. (2013). Negative indicators include non-native species; species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (<i>Hippophae rhamnoides</i>) should be absent or effectively controlled. See coastal habitats supporting document for further details

Conservation Objectives for : Ballyteige Burrow SAC [000696]

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes including erosion and succession. For sub-site mapped: Ballyteige Burrow - 225.65ha. See map 8	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). One sub-site was mapped, giving a total estimated area of 225.65ha. Ballyteige has one of the most significant areas of fixed dune habitat in the country. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 8 for known distribution	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Based on data from Delaney et al. (2013). Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. Ballyteige Burrow is a dynamic system that is strongly influenced by tidal currents. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Delaney et al. (2013). At Ballyteige there are transitions between dune habitats as well as zonations to saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes	Based on data from Gaynor (2008) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). There is limited grazing at Ballyteige Burrow as part of the management regime within the Nature Reserve which maintains the dwarf grassland sward mosaic. In contrast, the land under private ownership is undergrazed and dominated by marram (<i>Ammophila arenaria</i>) with large patches of bracken (<i>Pteridium aquilinum</i>) and bramble (<i>Rubus fruticosus</i>) present. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et al. (2013)	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). The presence of the Red Data Book species asparagus (<i>Asparagus officinalis</i> var. <i>prostratus</i>) is an indicator of local distinctiveness. See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (<i>Hippophae rhamnoides</i>) should be absent or effectively controlled. Large patches of bracken (<i>Pteridium aquilinum</i>) and bramble (<i>Rubus fruticosus</i>) were recorded in the eastern section of Ballyteige Burrow. See coastal habitats supporting document for further details
Vegetation composition: scrub/trees	Percentage cover	No more than 5% cover or under control	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details

Conservation Objectives for : Ballyteige Burrow SAC [000696]


2150 Atlantic decalcified fixed dunes (Calluno-Ulicetea)


To maintain the favourable conservation condition of Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) in Ballyteige Burrow SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes including erosion and succession	Current extent and status of habitat at this SAC unknown. The Coastal Monitoring Project (CMP) (Ryle et al., 2009) recorded the presence of the habitat in a mosaic with fixed dunes. However, the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013) did not record its presence. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes	Current distribution unknown but likely to occur in a mosaic with the fixed dunes in the landward older parts of the site. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. Ballyteige Burrow is a dynamic system that is strongly influenced by tidal currents. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Delaney et al. (2013). At Ballyteige there are transitions between dune habitats as well as zonations to saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes	Based on data from Gaynor (2008) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: sward height	Centimeters	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). There is limited grazing at Ballyteige Burrow as part of the management regime within the Nature Reserve which maintains the dwarf grassland sward mosaic. In contrast, the land under private ownership is undergrazed and dominated by marram (<i>Ammophila arenaria</i>) with large patches of bracken (<i>Pteridium aquilinum</i>) and bramble (<i>Rubus fruticosus</i>) present. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et al. (2013)	See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (<i>Hippophae rhamnoides</i>) should be absent or effectively controlled. Large patches of bracken (<i>Pteridium aquilinum</i>) and bramble (<i>Rubus fruticosus</i>) were recorded in the eastern section of Ballyteige Burrow. See coastal habitats supporting document for further details
Vegetation composition: scrub/trees	Percentage cover	No more than 5% cover or under control	See coastal habitats supporting document for further details



Legend

 Ballyteige Burrow SAC 000696

 *An Roinn Ealaíon, Oidhreacht agus Gaeltachta*
 Department of Arts, Heritage and the Gaeltacht

**MAP 1:
 BALLYTEIGE BURROW SAC
 CONSERVATION OBJECTIVES
 SAC DESIGNATION**

Map to be read in conjunction with the NPWS Conservation Objectives Document.

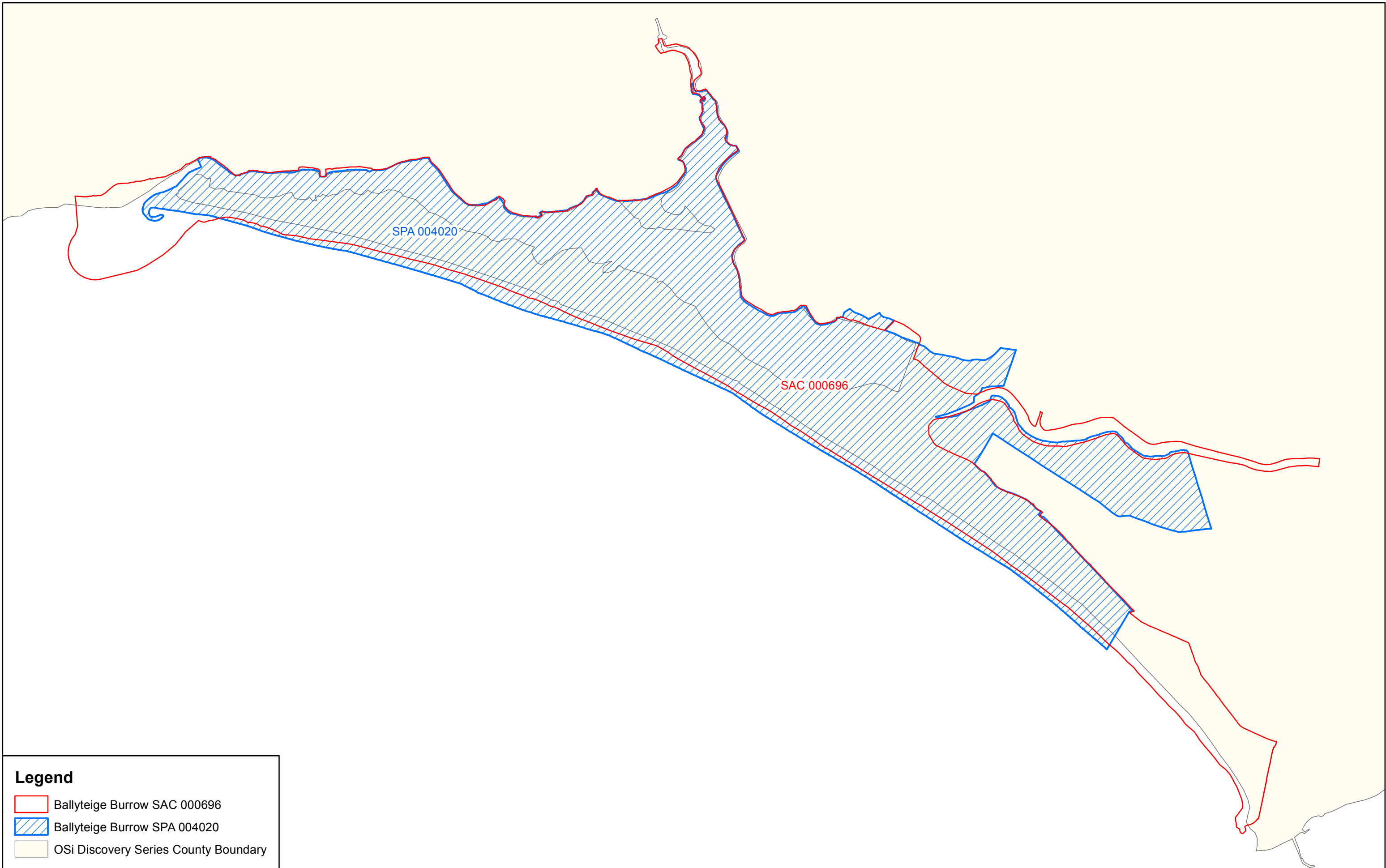
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 SAC 000696; version 3. CO. WEXFORD**

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The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
 Ordnance Survey of Ireland Licence No EN 0059214. © Ordnance Survey of Ireland Government of Ireland

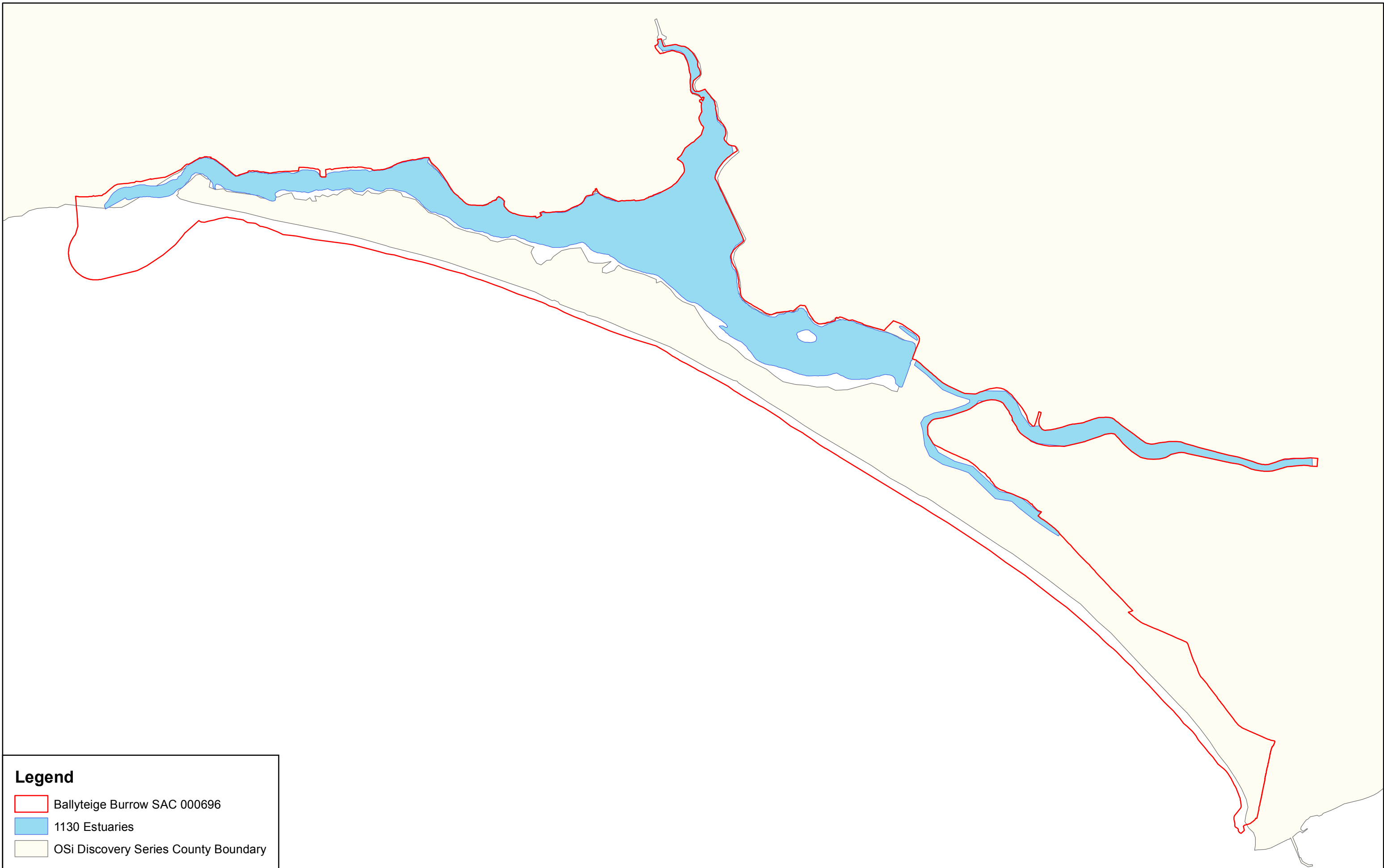
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Map Version 1
Date: June 2014




Legend

- Ballyteige Burrow SAC 000696
- Ballyteige Burrow SPA 004020
- OSi Discovery Series County Boundary



Legend

- Ballyteige Burrow SAC 000696
- 1130 Estuaries
- OSi Discovery Series County Boundary



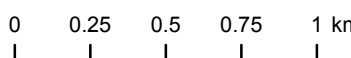
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Department of
Arts, Heritage and the Gaeltacht*

**MAP 3:
BALLYTEIGE BURROW SAC
CONSERVATION OBJECTIVES
ESTUARIES**

Map to be read in conjunction with the NPWS Conservation Objectives Document.

**SITE CODE:
SAC 000696; version 3. CO. WEXFORD**

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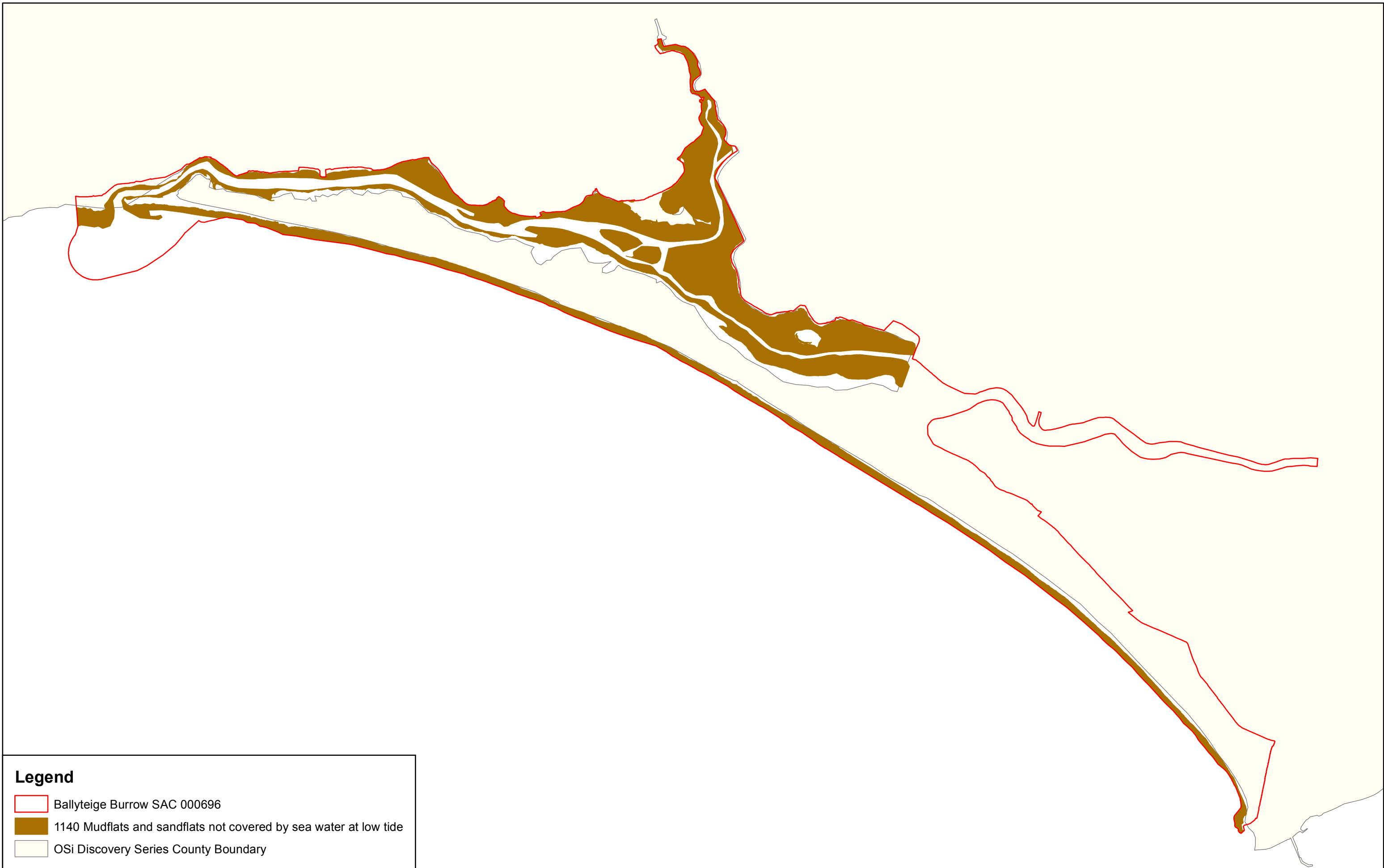


The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbheithníthe a déanamh ar theorainneacha na gceantar comharthaíthe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059214. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

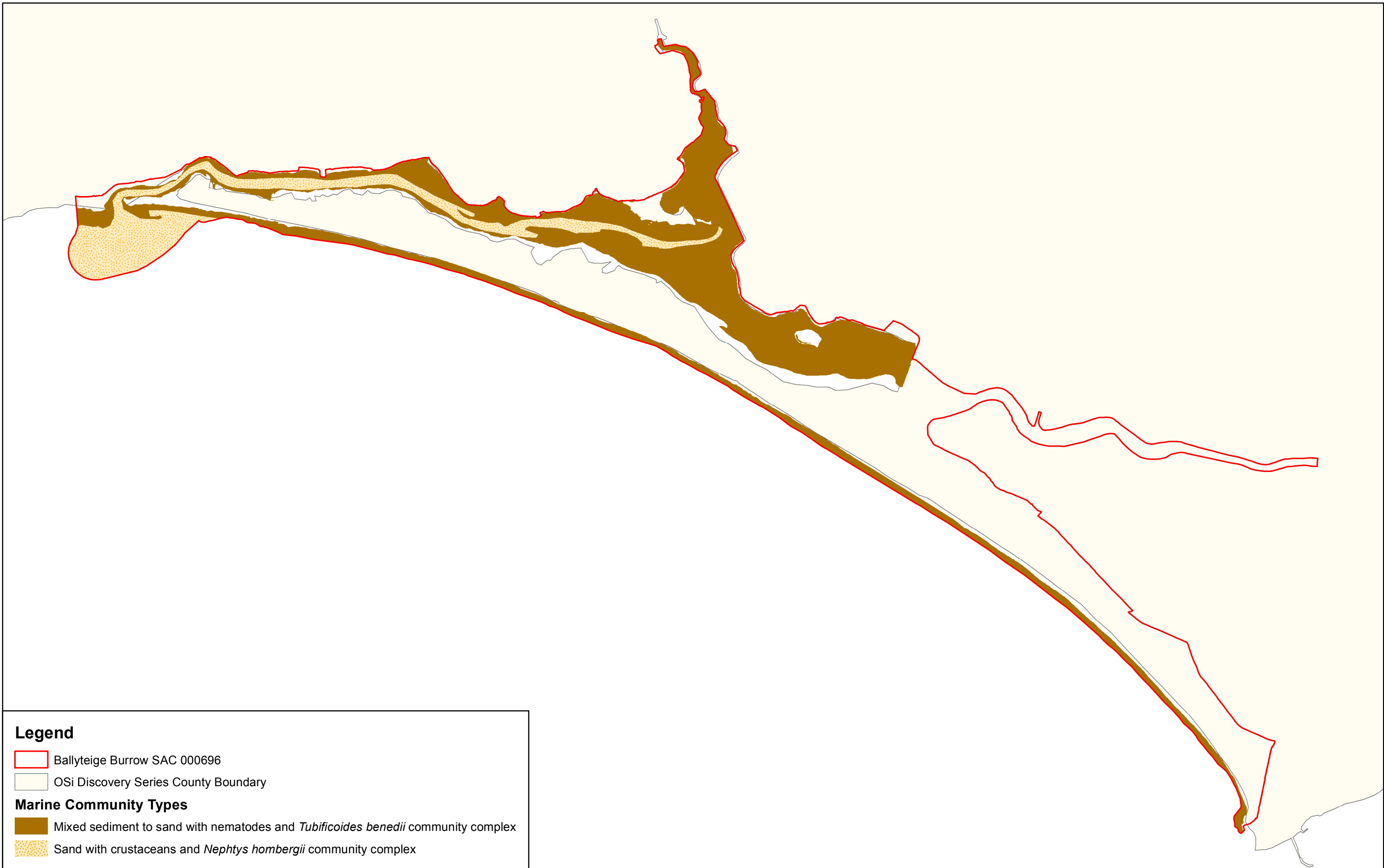


**Map Version 1
Date: June 2014**



Legend

- Ballyteige Burrow SAC 000696
- 1140 Mudflats and sandflats not covered by sea water at low tide
- OSi Discovery Series County Boundary

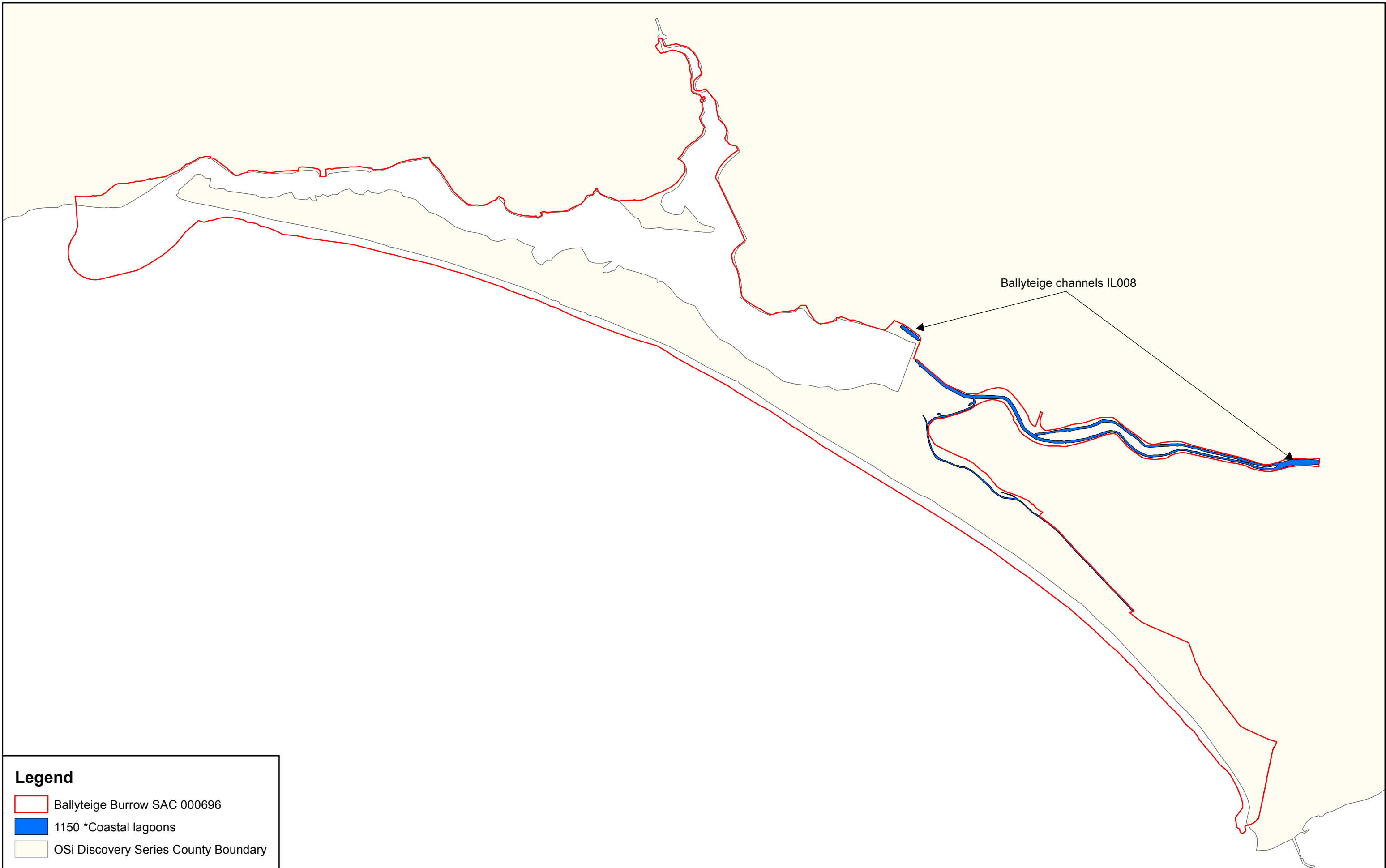


Legend

- Ballyteige Burrow SAC 000696
- OSi Discovery Series County Boundary

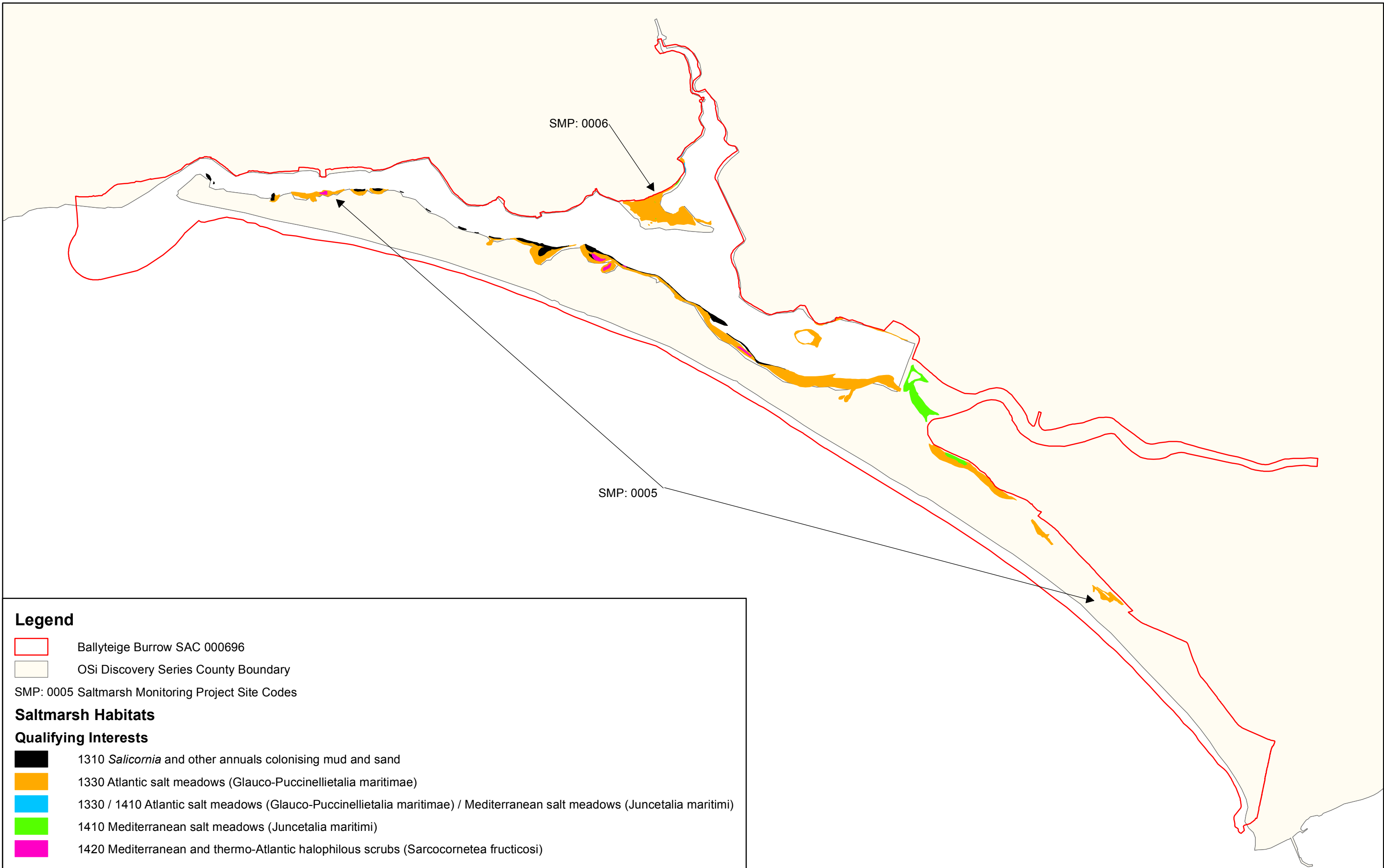
Marine Community Types

- Mixed sediment to sand with nematodes and *Tubificoides benedii* community complex
- Sand with crustaceans and *Nephtys hombergii* community complex



Legend

- Ballyteige Burrow SAC 000696
- 1150 *Coastal lagoons
- OSi Discovery Series County Boundary



Legend

- Ballyteige Burrow SAC 000696
 - OSi Discovery Series County Boundary
- SMP: 0005 Saltmarsh Monitoring Project Site Codes

Saltmarsh Habitats

Qualifying Interests

- 1310 *Salicornia* and other annuals colonising mud and sand
- 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- 1330 / 1410 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) / Mediterranean salt meadows (*Juncetalia maritimi*)
- 1410 Mediterranean salt meadows (*Juncetalia maritimi*)
- 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

