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National Parks and Wildlife Service

Conservation Objectives Series

Ballysadare Bay SAC 000622

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Introduction

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***

000622	Ballysadare Bay SAC
1014	Narrow-mouthed whorl snail *Vertigo angustior*
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1365	Harbour seal *Phoca vitulina*
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)*
2190	Humid dune slacks

Please note that this SAC overlaps with Ballysadare Bay SPA (004129) and adjoins Unshin River SAC (001898). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping and adjacent sites as appropriate.

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

NPWS Documents

Year :	1990
Title :	1989 survey of breeding herds of common seal (*Phoca vitulina*) with reference to previous surveys
Author :	Harrington, R.
Series :	Unpublished report to Wildlife Service
Year :	2004
Title :	Harbour seal population assessment in the Republic of Ireland: August 2003
Author :	Cronin, M.; Duck, C.; O'Cadhla, O.; Nairn, R.; Strong, D.; O'Keeffe, C.
Series :	Irish Wildlife Manual No. 11
Year :	2004
Title :	Summary of National Parks & Wildlife Service surveys for common (harbour) seals (*Phoca vitulina*) and grey seals (*Halichoerus grypus*), 1978 to 2003
Author :	Lyons, D.O.
Series :	Irish Wildlife Manual No. 13
Year :	2007
Title :	A Survey of Intertidal Mudflats and Sandflats in Ireland
Author :	Aquatic Services Unit
Series :	Unpublished report to NPWS
Year :	2010
Title :	Harbour seal population monitoring 2009-2012: Report no. 1. Report on a pilot monitoring study carried out in southern and western Ireland, 2009
Author :	NPWS
Series :	Unpublished Report to NPWS
Year :	2011
Title :	Monitoring and condition assessment of populations of *Vertigo geyeri*, *Vertigo angustior* and *Vertigo moulinsiana* in Ireland
Author :	Moorkens, E.A.; Killeen, I.J.
Series :	Irish Wildlife Manual No. 55
Year :	2011
Title :	Harbour seal pilot monitoring project, 2010
Author :	NPWS
Series :	Unpublished Report to NPWS
Year :	2012
Title :	Harbour seal pilot monitoring project, 2011
Author :	NPWS
Series :	Unpublished Report to NPWS
Year :	2013
Title :	Ballysadare Bay SAC (site code 622) Conservation objectives supporting document- marine habitats and species V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2013
Title :	Monitoring survey of Annex I sand dune habitats in Ireland
Author :	Delaney, A.; Devaney, F.M.; Martin, J.M.; Barron, S.J.
Series :	Irish Wildlife Manual No. 75

Year :	2013
Title :	Ballysadare Bay SAC (site code 622) Conservation objectives supporting document- coastal habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	1980
Title :	An assessment of the status of the common seal (*Phoca vitulina vitulina*) in Ireland
Author :	Summers, C.F.; Warner, P.J.; Nairn, R.G.W.; Curry, M.G.; Flynn, J.
Series :	Biological Conservation 17: 115-123
Year :	2011
Title :	Subtidal benthic investigations Ballysadare Bay cSAC (site code IE000622) Co. Sligo
Author :	Aquafact
Series :	Unpublished report to the Marine Institute and NPWS
Year :	2011
Title :	A survey of mudflats and sandflats in Ireland. An intertidal soft sediment survey of Ballysadare Bay
Author :	Aquatic Services Unit
Series :	Unpublished report to the Marine Institute and NPWS

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 :	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 4)
Year :	Interpolated 2013
Title :	2007, 2010 intertidal surveys; 2010 subtidal survey
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 :	2013
Title :	Sand Dune Monitoring Project 2011. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary; overlapping regions with saltmarsh data investigated and resolved with expert opinion as necessary
Used For :	2110, 2120, 2130, 2190 (map 6)
Year :	2013
Title :	NPWS rare and threatened species database
GIS Operations :	Dataset created from spatial references in database records. Expert opinion used as necessary to resolve any issues arising
Used For :	1014, 1365 (maps 7 and 8)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	High Water Mark (HWM) polyline feature class converted into polygon feature class; clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1365 (map 8)

Conservation Objectives for : Ballysadare Bay SAC [000622]

1130 Estuaries

To maintain the favourable conservation condition of Estuaries in Ballysadare Bay 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 1703ha using OSi data and the defined Transitional Water Body area under the Water Framework Directive
Community extent	Hectares	Maintain the extent of the *Zostera*-dominated community, subject to natural processes. See map 5	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2011). See marine supporting document for further information
Community structure: *Zostera* density	Shoots/m²	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2011). See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Intertidal sand with *Angulus tenuis* community complex; Muddy sand to sand with *Hediste diversicolor*, *Corophium volutator* and *Peringia ulvae* community complex; Fine sand with polychaetes community complex; Sand with bivalves, nematodes and crustaceans community complex; Intertidal reef community complex; Subtidal reef community complex. See map 5	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2011) and a subtidal survey in 2010 (Aquafact, 2011). See marine habitats supporting document for further information

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 Ballysadare Bay 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 1345ha
Community extent	Hectares	Maintain the extent of the *Zostera*-dominated community, subject to natural processes. See map 5	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2011). See marine supporting document for further information
Community structure: *Zostera* density	Shoots/m²	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2011). See marine supporting document for further information
Community distribution	Hectares	Conserve the following community types in a natural condition: Intertidal sand with *Angulus tenuis* community complex; Muddy sand to sand with *Hediste diversicolor*, *Corophium volutator* and *Peringia ulvae* community complex. See map 5	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2011). See marine supporting document for further information

2110 Embryonic shifting dunes

To maintain the favourable conservation condition of Embryonic shifting dunes in Ballysadare Bay 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: Strandhill - 1.08ha. See map 6	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Embryo dunes were surveyed and mapped at one sub-site, giving a total estimated area of 1.08ha. 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 6 for known distribution	Based on data from Delaney et al. (2013). Embryo dunes are concentrated around the growing tip of Strandhill dunes. 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. Coastal protection works in the form of rock armour have been installed on the seaward edge of the carpark and golf course. 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). Transitional communities occur between a range of sand dune habitats and some 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 (*Elytrigia juncea*) and/or lyme-grass (*Leymus arenarius*) 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 (*Elytrigia juncea*) and/or lyme-grass (*Leymus arenarius*)	Based on data from Delaney et al. (2013). Embryo dunes at Strandhill support a typical flora. 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 (*Hippophae rhamnoides*) should be absent or effectively controlled. See coastal habitats supporting document for further details

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

To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in Ballysadare Bay 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: Strandhill-5.47ha. See map 6	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Marram dunes were surveyed and mapped at one sub-site, giving a total estimated area of 5.47ha. 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 6 for known distribution	Based on data from Delaney et al. (2013). Mobile dunes occur the seaward side of the spit in the southern part of Strandhill and are particularly well developed at the growing tip. 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 (*Ammophila arenaria*) reproduces vegetatively and requires constant accretion of fresh sand to maintain active growth encouraging further accretion. There are coastal protection works in place at Strandhill. 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) and Delaney et al. (2013). Transitional communities occur between a range of sand dune habitats and some saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation composition: plant health of dune grasses	Percentage cover	95% of marram grass (*Ammophila arenaria*) and/or lyme-grass (*Leymus arenarius*) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Delaney et al. (2013). The mobile dune habitat at the tip of the spit is in good condition and is actively accreting. 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 (*Ammophila arenaria*) and/or lyme-grass (*Leymus arenarius*)	Based on data from Delaney et al. (2013). The mobile dunes at Strandhill support a characteristic dune flora. 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 (*Hippophae rhamnoides*) should be absent or effectively controlled. See coastal habitats supporting document for further details

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 Ballysadare Bay 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: Strandhill - 56.07ha. See map 6	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Fixed dunes were surveyed and mapped at one sub-site, giving a total estimated area of 56.07ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 6 for known distribution	Based on data from Delaney et al. (2013). Fixed dune habitat covers an extensive area at Strandhill. 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. There are coastal protection works at Strandhill. 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). Transitional communities occur between a range of sand dune habitats and some 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). There is a large blowout in Strandhill dunes known locally as Shelly Valley, which covers 5.4ha. Trampling has created tracks in the vicinity of this blowout. See coastal habitats supporting document for further details
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008) and Delaney et al. (2013). The fixed dunes at Strandhill are subject to low level grazing by rabbits (*Oryctolagus cuniculus*). Grazing by cattle or sheep is absent. This has led to the reduction in species richness of the site as well as a potential problem of the spread of sycamore (*Acer pseudoplatanus*) and wild clematis (*Clematis vitalba*). 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 Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species (including *Hippophae rhamnoides*)	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 (*Hippophae rhamnoides*) should be absent or effectively controlled. At Strandhill, negative indicator species common ragwort (*Senecio jacobaea*) and creeping thistle (*Cirsium arvense*) occur occasionally. Sycamore (*Acer pseudoplatanus*) and wild clematis (*Clematis vitalba*) have also been noted from the fixed dunes. 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). Creeping willow (*Salix repens*) is abundant within the fixed dunes at Strandhill. Sycamore (*Acer pseudoplatanus*) has also been noted. See coastal habitats supporting document for further details

2190 Humid dune slacks

To restore the favourable conservation condition of Humid dune slacks in Ballysadare Bay 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: Strandhill - 1.83ha. See map 6	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Dune slacks were surveyed and mapped at one sub-site, giving a total estimated area of 1.83ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 6 for known distribution	Based on data from Delaney et al. (2013). One large slack and one small slack have been recorded from the southern part of Strandhill dunes. 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. There are coastal protection works at Strandhill. See coastal habitats supporting document for further details
Physical structure: hydrological and flooding regime	Water table levels; groundwater fluctuations (metres)	Maintain natural hydrological regime	Based on data from Gaynor (2008) and Delaney et al. (2013). The slacks are showing some signs of drying out, which may be accelerated by human interference with the local hydrology. 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) and Delaney et al. (2013). Transitional communities occur between a range of sand dune habitats and some saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground	Based on data from Gaynor (2008) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008) and Delaney et al. (2013). The dunes at Strandhill are subject to low level grazing by rabbits (*Oryctolagus cuniculus*). Grazing by cattle or sheep is absent. This has led to the reduction in species richness of the site as well as a potential problem of the spread of sycamore (*Acer pseudoplatanus*) and wild clematis (*Clematis vitalba*). 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) and Delaney et al. (2013). At Strandhill, typical pioneer bryophyte species are frequent, and the locally important marsh helleborine (*Epipactis palustris*) also occurs. See coastal habitats supporting document for further details
Vegetation composition: cover of *Salix repens*	Percentage cover; centimetres	Maintain less than 40% cover of creeping willow (*Salix repens*)	Based on data from Delaney et al. (2013). Cover of Creeping willow (*Salix repens*) needs to be controlled (e.g. through an appropriate grazing regime) to prevent the development of a coarse, rank vegetation cover. It is abundant within the fixed dunes at Strandhill but is notably absent from the dune slacks. 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 (*Hippophae rhamnoides*) should be absent or effectively controlled. 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

1014 Marsh Snail *Vertigo angustior*

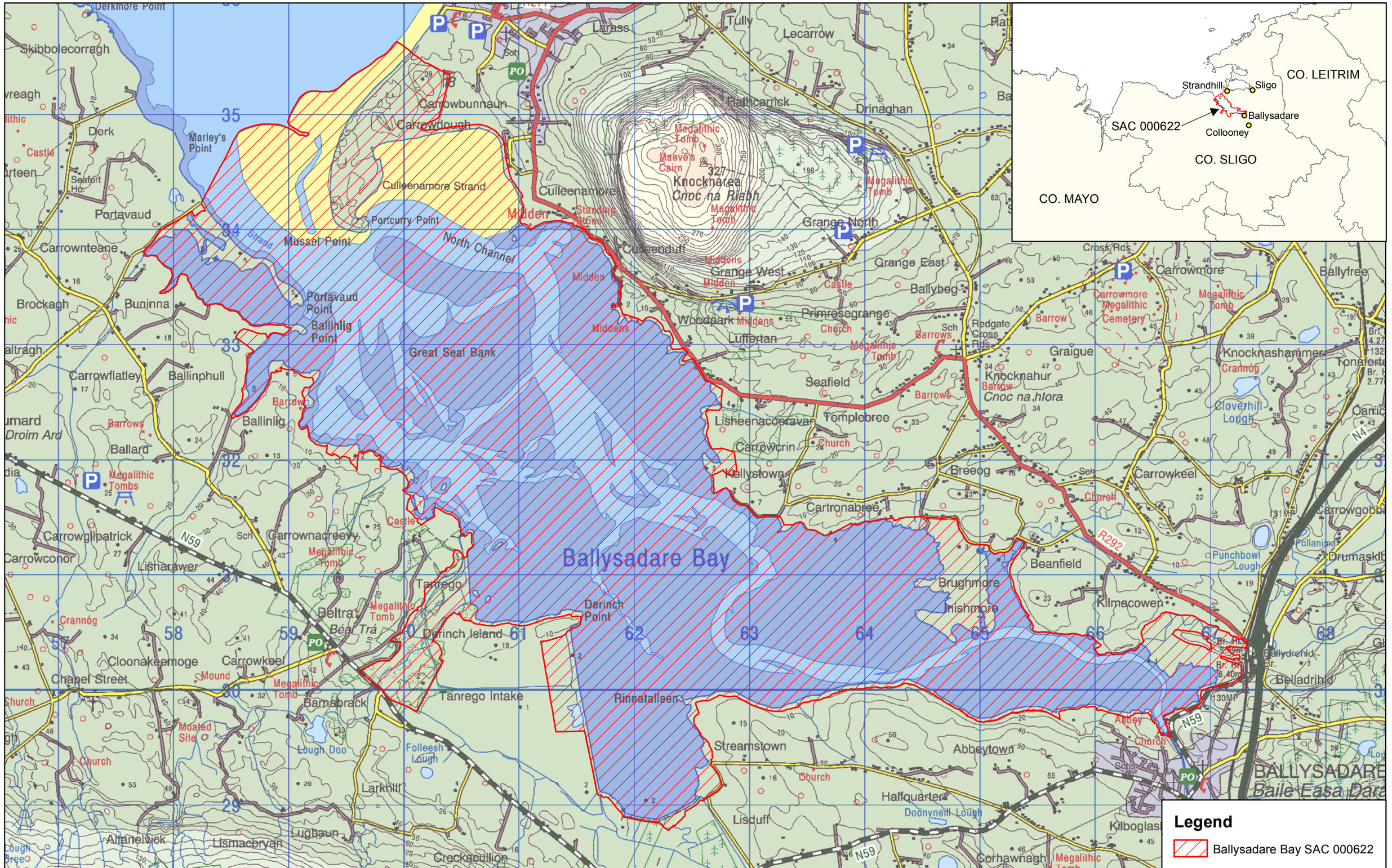
To maintain the favourable conservation condition of Narrow-mouthed Whorl Snail in Ballysadare Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: occupied sites	Number	No decline. There is one known location for this species in this SAC (which overlaps two 1km squares). See map 7	From Moorkens and Killeen (2011) (site code Va CAM20)
Presence on transect	Occurrence	Adult or sub-adult snails are present in all three of the habitat zones on the transect (minimum four samples)	Transect established as part of condition assessment monitoring at this site (Moorkens and Killeen, 2011). See habitat area target below for definition of optimal and suboptimal habitat
Presence	Occurrence	Adult or sub-adult snails are present in at least six other places at the site with a wide geographical spread (minimum of eight sites sampled)	From Moorkens and Killeen (2011)
Transect habitat quality	Metres	At least 50m of habitat along the transect is classed as optimal and the remainder as at least sub-optimal	From Moorkens and Killeen (2011). See habitat extent target below for definition of optimal and sub-optimal habitat. See habitat area target below for definition of optimal and suboptimal habitat
Transect optimal wetness	Metres	Soils, at time of sampling, are damp (optimal wetness) and covered with a layer of humid thatch for at least 50m along the transect	From Moorkens and Killeen (2011)
Habitat extent	Hectares	At least 45ha of the site in at least optimal/sub-optimal condition. Optimal habitat is defined as fixed dune, species-rich grassland dominated by red fescue (*Festuca rubra*) and marram (*Ammophila arenaria*), with sparse oxeye daisy (*Leucanthemum vulgare*), dandelion (*Taraxacum* sp.), ribwort plantain (*Plantago lanceolata*) and other low growing herbs. Vegetation height 20-50cm. Habitat growing on damp, friable soil covered with a layer of humid, open structured thatch. Sub-optimal habitat is defined as above but either vegetation height is less than 10cm or above 50cm; or the soil is dry and sandy; or the thatch is wetter with a denser structure	From Moorkens and Killeen (2011). See also the conservation objective for fixed dunes (2130)

1365 Harbour seal *Phoca vitulina*

To maintain the favourable conservation condition of Harbour Seal in Ballysadare Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use. See map 8	See marine supporting document for further details
Breeding behaviour	Breeding sites	Conserve the breeding sites in a natural condition. See map 8	Attribute and target based on background knowledge of Irish breeding populations, review of data summarised by Summers et al. (1980); Harrington (1990); Lyons (2004) and unpublished NPWS records. See marine supporting document for further details
Moulting behaviour	Moult haul-out sites	Conserve the moult haul-out sites in a natural condition. See map 8	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004); Cronin et al. (2004); NPWS (2010); NPWS (2011); NPWS (2012) and unpublished NPWS records. See marine supporting document for further details
Resting behaviour	Resting haul-out sites	Conserve the resting haul-out sites in a natural condition. See map 8	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004) and unpublished NPWS records. See marine supporting document for further details
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the harbour seal population at the site	See marine supporting document for further details



Legend

Ballysadare Bay SAC 000622

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

MAP 1: BALLYSADARE BAY SAC CONSERVATION OBJECTIVES SAC DESIGNATION

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

SITE CODE:
SAC 000622; version 3. CO. SLIGO

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Sept 2013

SAC 000622

SPA 004129

SAC 001898

Legend

- Ballysadare Bay SAC 000622
- Unshin River SAC 001898
- Ballysadare Bay SPA 004129
- OSi Discovery Series County Boundary

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MAP 2:
BALLYSADARE BAY SAC CONSERVATION OBJECTIVES ADJOINING / OVERLAPPING DESIGNATIONS

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

SITE CODE: SAC 000622; version 3,
SAC 001898; version 3.
SPA 004129; version 1.03. CO. SLIGO

0 1 2 3 4 5 km

N

Map Version 1
Date: Sept 2013

Legend

- Ballysadare Bay SAC 000622
- 1130 Estuaries
- OSi Discovery Series County Boundary

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MAP 3:
BALLYSADARE BAY SAC
CONSERVATION OBJECTIVES
ESTUARIES

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

SITE CODE:
SAC 000622; version 3. CO. SLIGO

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Sept 2013

Legend

- Ballysadare Bay SAC 000622
- 1140 Mudflats and sandflats not covered by sea water at low tide
- OSi Discovery Series County Boundary

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MAP 4:
BALLYSADARE BAY SAC
CONSERVATION OBJECTIVES
TIDAL MUDFLATS AND SANDFLATS

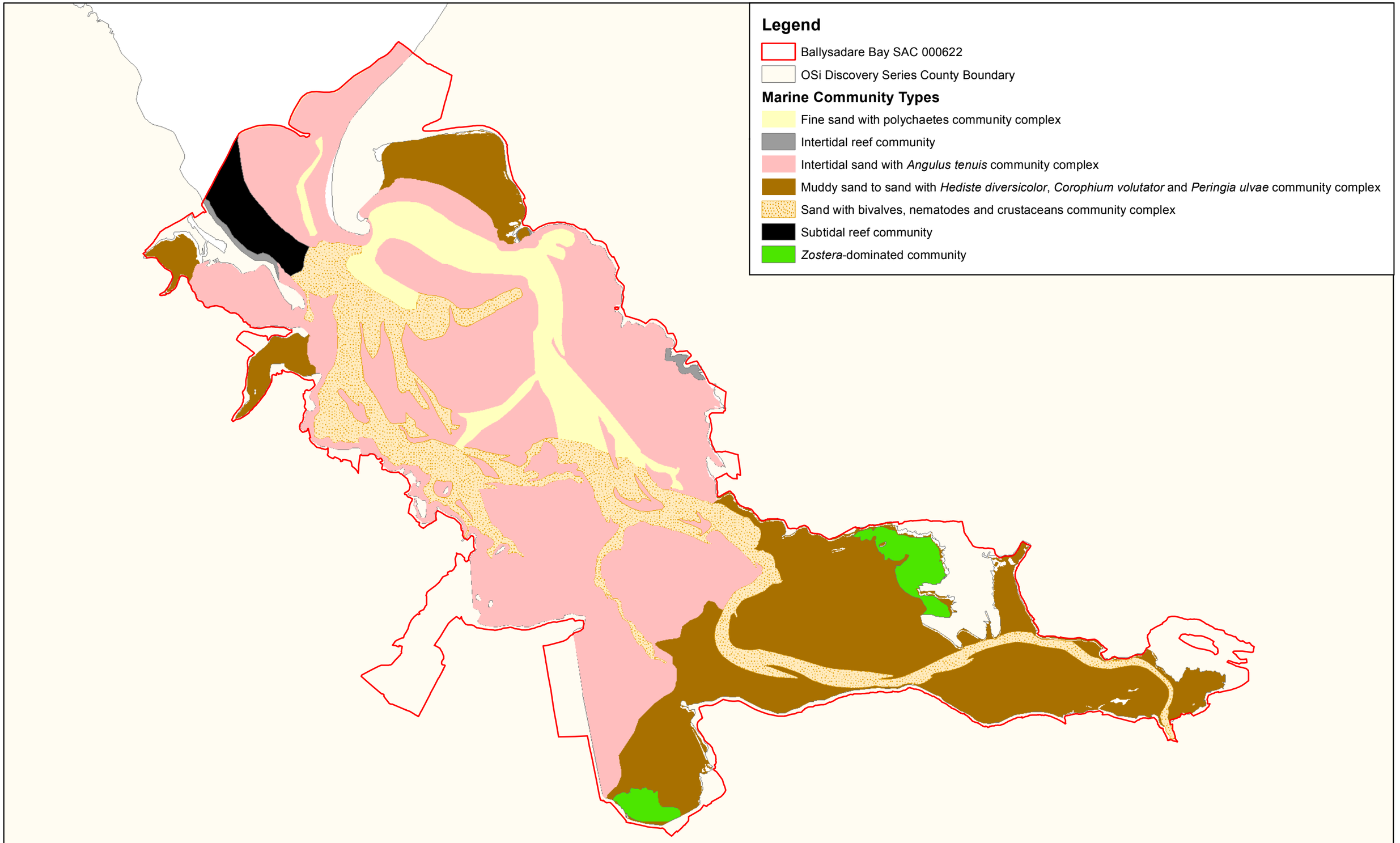
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 000622; version 3. CO. SLIGO

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Sept 2013



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MAP 5:
BALLYSADARE BAY SAC
CONSERVATION OBJECTIVES
MARINE COMMUNITY TYPES

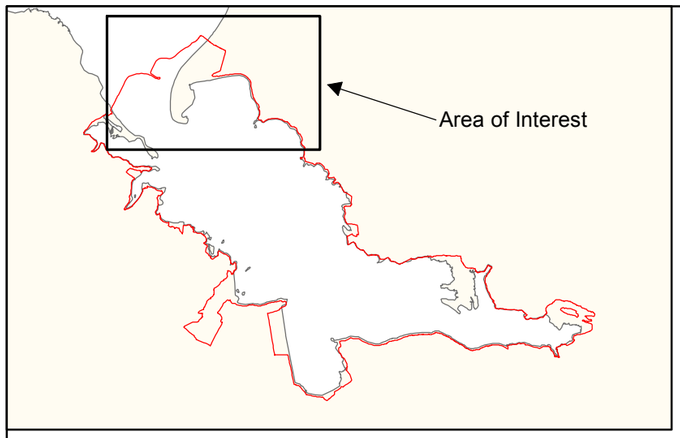
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 000622; version 3. CO. SLIGO

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Sept 2013



Legend

Ballysadare Bay SAC 000622

OSi Discovery Series County Boundary

SDM: 133 Sand Dune Monitoring Project Site Codes

Sand Dune Habitats

Qualifying Interests

2110 Embryonic shifting dunes

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

2130 *Fixed coastal dunes with herbaceous vegetation ('grey dunes')

2190 Humid dune slacks

Non-Qualifying Interests

1220 Perennial vegetation of stony banks

2170 Dunes with *Salix repens* ssp. *argentea* (Salicion arenariae)

SDM: 133

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MAP 6:
BALLYSADARE BAY SAC
CONSERVATION OBJECTIVES
SAND DUNE HABITATS

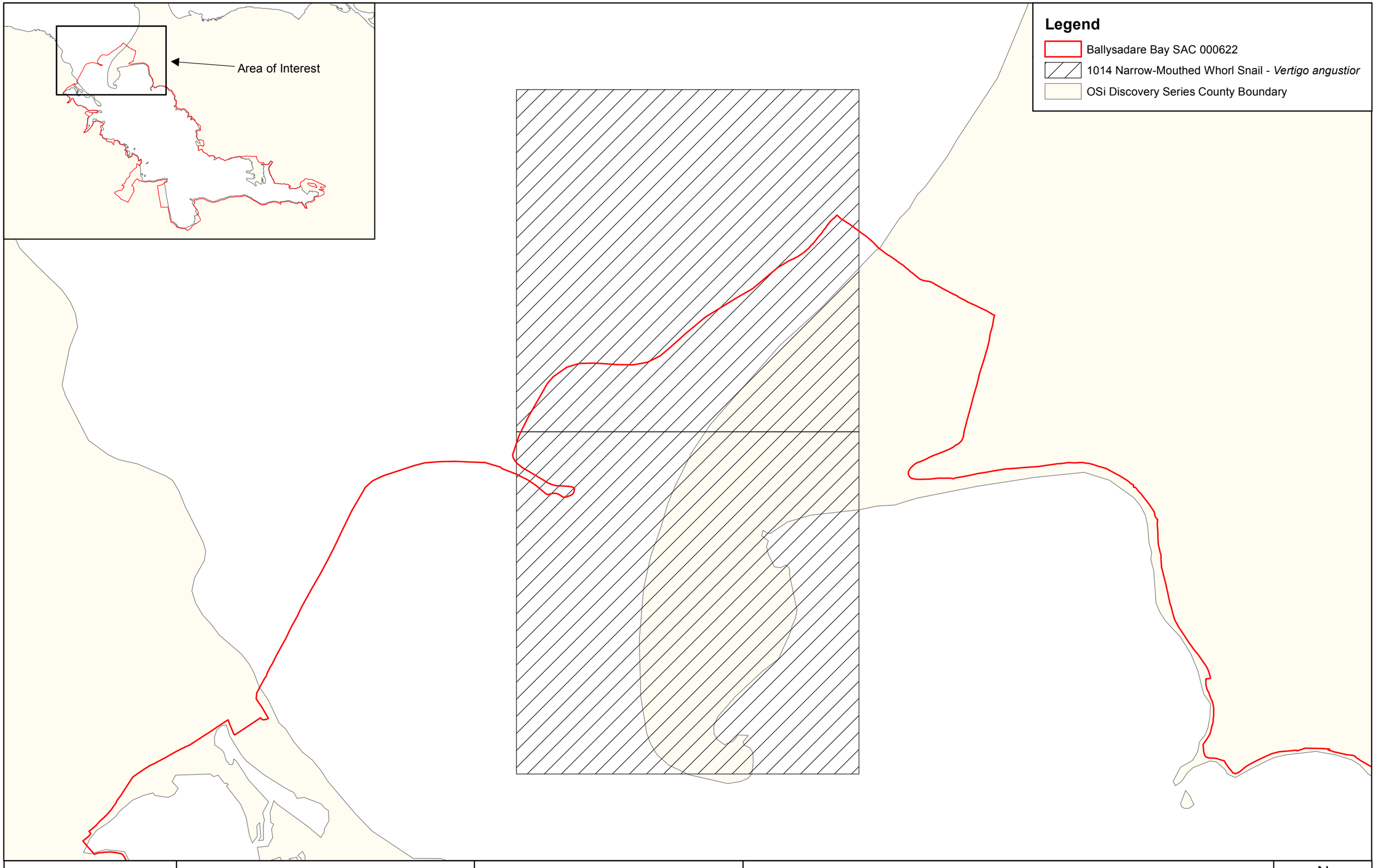
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 000622; version 3. CO. SLIGO

0 100 200 300 400 500 m

N

Map Version 1
Date: Sept 2013



Legend

- Ballysadare Bay SAC 000622
- 1014 Narrow-Mouthed Whorl Snail - *Vertigo angustior*
- OSi Discovery Series County Boundary

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MAP 7:
BALLYSADARE BAY SAC
CONSERVATION OBJECTIVES
NARROW-MOUTHED WHORL SNAIL

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

SITE CODE:
SAC 000622; version 3. CO. SLIGO

0 100 200 300 400 500 m

N

Map Version 1
Date: Sept 2013

Legend

- Ballysadare Bay SAC 000622
- 1365 Harbour Seal - *Phoca vitulina* breeding sites
- 1365 Harbour Seal - *Phoca vitulina* moulting sites
- 1365 Harbour Seal - *Phoca vitulina* resting sites
- 1365 Harbour Seal - *Phoca vitulina* habitat
- OSi Discovery Series County Boundary

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MAP 8:
BALLYSADARE BAY SAC
CONSERVATION OBJECTIVES
HARBOUR SEAL

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

SITE CODE:
SAC 000622; version 3. CO. SLIGO

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Sept 2013