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Conservation Objectives Series

Carrowmore Point to Spanish Point and Islands SAC 001021

An Roinn
Ealaíon, Oidhreachta agus Gaeltachta

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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***

001021	Carrowmore Point to Spanish Point and Islands SAC
1150	Coastal lagoons*
1170	Reefs
1220	Perennial vegetation of stony banks
7220	Petrifying springs with tufa formation (Cratoneurion)*

Please note that this SAC overlaps with Mid-Clare Coast SPA (004182) and adjoins Carrowmore Dunes SAC (002250). 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, 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 :	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 :	2013
Title :	Conservation status assessment for petrifying springs
Author :	Lyons, M.D.; Kelly, D.L.
Series :	Unpublished report to NPWS
Year :	2014
Title :	Carrowmore Point to Spanish Point and Islands SAC (site code:1021) Conservation objectives supporting document- marine habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2014
Title :	Carrowmore Point to Spanish Point and Islands SAC (site code:1021) Conservation objectives supporting document- coastal habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2014
Title :	Carrowmore Point to Spanish Point and Islands SAC (site code:1021) Conservation objectives supporting document- coastal lagoons V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	1997
Title :	The BioMar biotope viewer: a guide to marine habitats, fauna and flora in Britain and Ireland
Author :	Picton, B.E.; Costello, M.J.
Series :	Environmental Science Unit, Trinity College Dublin
Year :	2007
Title :	Interpretation manual of European Union habitats
Author :	European Commission
Series :	DG Environment

Year :	2012
Title :	Subtidal reef survey of Carrowmore Point to Spanish Point and Islands SAC, Carrowmore Dunes SAC and Mid-Clare Coast SPA
Author :	MERC
Series :	Unpublished report to the Marine Institute and NPWS
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
Year :	2013
Title :	Intertidal benthic survey and intertidal reef survey of Carrowmore Point to Spanish Point and Islands SAC, Carrowmore Dunes SAC and Mid-Clare Coast SPA
Author :	MERC
Series :	Unpublished report to the Marine Institute and NPWS

Spatial data sources

Year :	Revision 2011
Title :	Inventory of Irish Coastal Lagoons. Version 3
GIS Operations :	Clipped to SAC boundary
Used For :	1150 (map 3)
Year :	Interpolated 2014
Title :	1996 BioMar Survey; 2011, 2012 intertidal and subtidal reef surveys
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 :	1170, 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 2012
Title :	National Shingle Beach Survey
GIS Operations :	Clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1220 (map 6)
Year :	2009
Title :	Coastal Monitoring Project 2004-2006. 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 :	1220 (map 6)
Year :	Derived 2014
Title :	Internal NPWS files
GIS Operations :	Dataset created from spatial reference contained in files
Used For :	7220 (map 6)

1150 Coastal lagoons

To restore the favourable conservation condition of Coastal lagoons in Carrowmore Point to Spanish Point and Islands 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. Favourable reference area 12.5ha. See map 3	Area calculated from spatial data derived from Oliver, 2007 for one site, Lough Donnell: code IL035. See lagoons supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 3	IL035 in Oliver, 2007. NB other, as yet unmapped lagoons may be present in the SAC. See lagoons supporting document for further details
Salinity regime	Practical salinity units (psu)	Median annual salinity and temporal variation within natural ranges	Lough Donell is regarded as being a low salinity lagoon. See lagoons supporting document for further details
Hydrological regime	Metres	Annual water level fluctuations and minima within natural ranges	Lough Donell is a shallow lagoon. 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 barrier at Lough Donell is a large cobble/shingle barrier. See lagoons supporting document for further details. See also the conservation objective for perennial vegetaion of stony banks (1220)
Water quality: Chlorophyll *a*	µg/L	Annual median chlorophyll *a* 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). See lagoons supporting document for further details
Depth of macrophyte colonisation	Metres	Macrophyte colonisation to maximum depth of lagoon	As this is a shallow lagoon, it is expected that macrophytes should extend to its deepest point. 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 lagoon 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 un-natural encroachment by reedbeds

1170 Reefs

To maintain the favourable conservation condition of Reefs in Carrowmore Point to Spanish Point and Islands 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 estimated as 2,829ha from a 1996 BioMar survey and 2011 and 2012 intertidal and subtidal reef surveys (MERC, 2012, 2013)
Distribution	Occurrence	The distribution of reefs remains stable, subject to natural processes. See map 4 for mapped distribution	Based on information froma 1996 BioMar survey and 2011 and 2012 intertidal and subtidal reef surveys (MERC, 2012, 2013). See marine supporting document for further details
Community structure	Biological composition	Conserve the following community types in a natural condition: Intertidal reef community complex; *Laminaria*-dominated community complex. See map 5	Reef mapping based on information from a 1996 BioMar survey and 2011 and 2012 intertidal and subtidal reef surveys (MERC, 2012, 2013). See marine supporting document for further details

1220 Perennial vegetation of stony banks

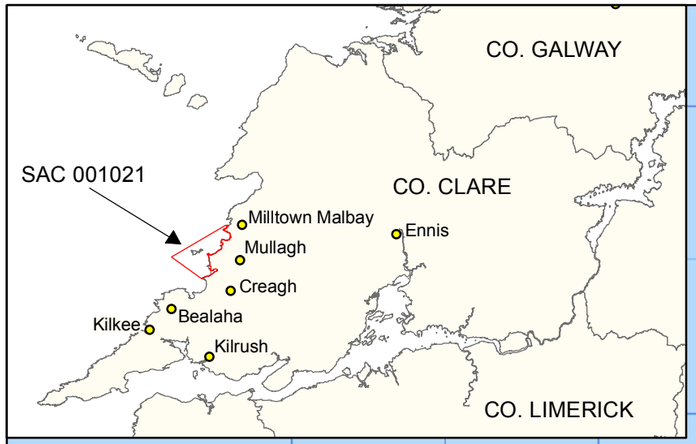
To maintain the favourable conservation condition of Perennial vegetation of stony banks in Carrowmore Point to Spanish Point and Islands SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession	Current area unknown. It was recorded as being present but extent was not mapped from four sub-sites during the National Shingle Beach Survey (NSBS) (Moore and Wilson, 1999): Caherrush, Spanish Point and Travaun Bay, Lough Donnell, Carricknola/Tromcastle Strand and Quilty. An area of 0.18ha of vegetated shingle was recorded and mapped (site 083) during the Coastal Monitoring Project (CMP) (Ryle et al., 2009). 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, unless it is the result of natural processes including erosion and succession. See map 6 for recorded locations	Full distribution unknown at present, although the habitat has been recorded at four sub-sites by Moore and Wilson (1999) and one site by Ryle et al. (2009). Habitat likely to be more widespread. 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	Moore and Wilson (1999) recorded the presence of erosion protection measures at Quilty in the form of rock armour, concrete pilings under construction and boulders dumped on the beach. These structures may be compromising the supply and natural circulation of sediment. 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 shingle, lagoons, bedrock shore and cliff habitats are known to occur. At the Caherrush, Spanish Point and Travaun Bay site there are actively eroding cliffs and sand dunes behind the vegetated shingle ridge. See coastal habitats supporting document for further details and the conservation objective for Coastal lagoons (1150)
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	All four sub-sites visited during the NSBS support a typical vegetated shingle flora, albeit a species-poor one in places owing to the exposed location. Lichens were recorded at the Lough Donnell site indicating a degree of stability. 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. The NSBS recorded thistle (*Cirsium* species) at both the Caherrush, Spanish Point and Travaun Bay site and the Lough Donnell site. See coastal habitats supporting document for further details

7220 Petrifying springs with tufa formation (Cratoneurion)

To maintain the favourable conservation condition of Petrifying springs with tufa formation (*Cratoneurion*) in Carrowmore Point to Spanish Point and Islands SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Square metres	Area stable or increasing, subject to natural processes and not less than c.1100m²	Two springs have been recorded in the site, one as 100m² and the second larger one as 1000m² (internal NPWS files). NB further areas of the habitat may occur within this SAC
Habitat distribution	Occurrence	No decline. See map 6 for recorded locations	This habitat has been recorded at two points within the SAC, just south of Spanish Point (internal NPWS files); one seeping from low clay cliffs forming heavily petrified tufa cascades, while the other is recorded on rocky coast. Lyons and Kelly (2013) recognise three main subtypes of spring. The springs in this SAC fall into the coastal springs subtype (the other two subtypes being woodland springs and inland non-wooded springs) NB further areas of the habitat may occur within this SAC
Hydrological regime: height of water table; water flow	Metres; metres per second	Maintain appropriate hydrological regimes	The hydrological regimes of the springs are currently unknown. Petrifying springs rely on permanent irrigation, usually from upwelling groundwater sources or seepage sources
Water quality	Water chemistry measures	Maintain oligotrophic and calcareous conditions	Water chemistry is currently unknown for the springs in this site. Characteristically, petrifying spring water has high values for pH, alkalinity and dissolved calcium and is oligotrophic (Lyons and Kelly, 2013)
Vegetation composition: typical species	Occurrence	Maintain typical species	The bryophytes *Palustriella commutata* (*Cratoneuron commutatum*), *Cratoneuron filicinum* and *Eucladium verticillatum* are diagnostic of this habitat (EC, 2007). All three are found at this habitat in the SAC (internal NPWS files). Other bryophyte species listed at this site include *Leiocolea turbinata*, *Pellia endiviifolia*, *Didymon fallax*, *Scorpidium revolvens* and *Aneura pinguis* (internal NPWS files). *Chroothece* sp., a red alga, has been recently recorded from springs in this site (as well as in Skerries, Co. Dublin). This genus is new to Ireland (Lyons and Kelly, 2013)



Legend

Carrowmore Point to Spanish Point and Islands SAC 001021

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Department of Arts, Heritage and the Gaeltacht

MAP 1:
CARROWMORE POINT TO SPANISH POINT AND ISLANDS SAC CONSERVATION OBJECTIVES SAC DESIGNATION

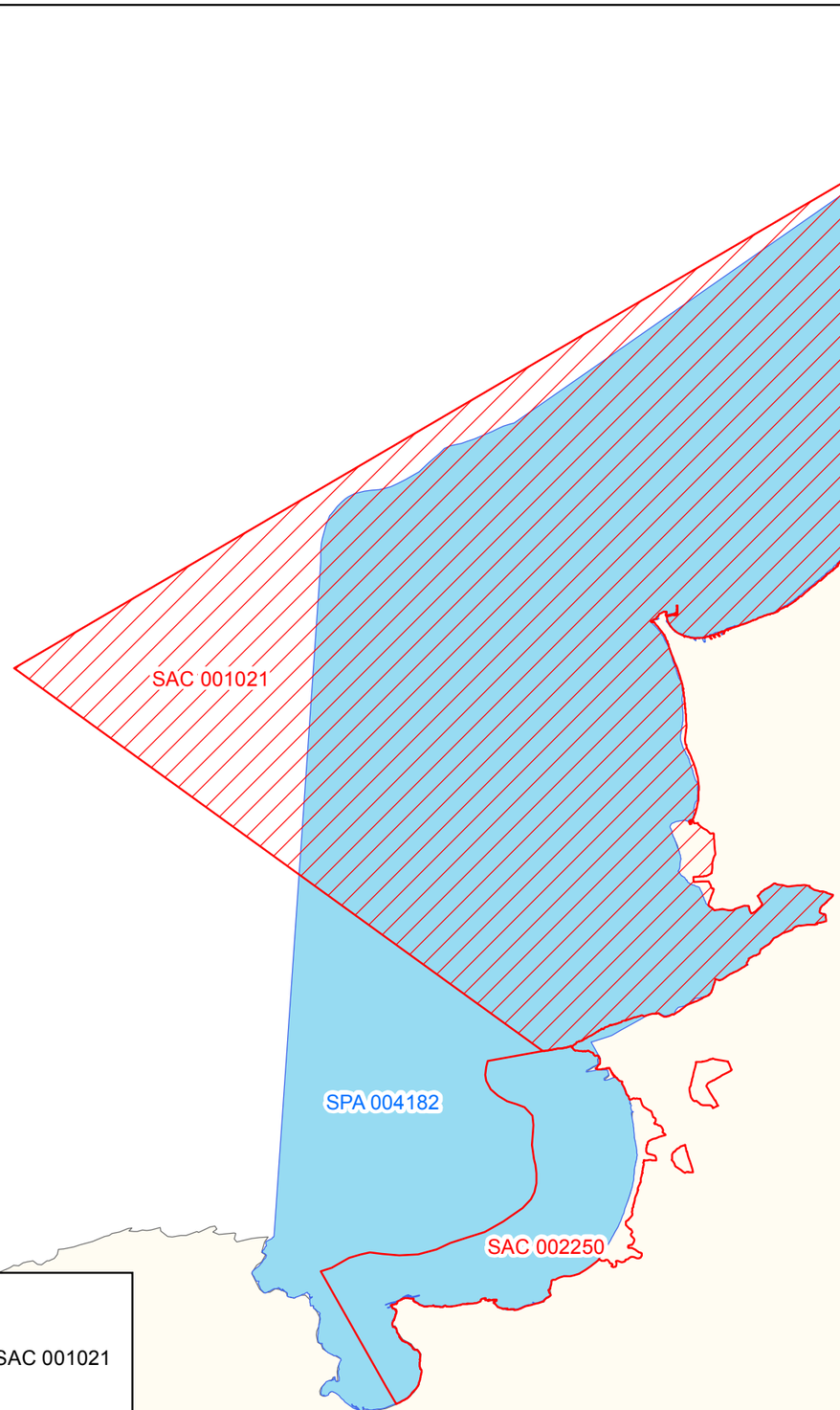
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 001021; version 3.01. CO. CLARE

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Feb 2014



Legend

- Carrowmore Point to Spanish Point and Islands SAC 001021
- Carrowmore Dunes SAC 002250
- Mid-Clare Coast SPA 004182
- OSi Discovery Series County Boundary

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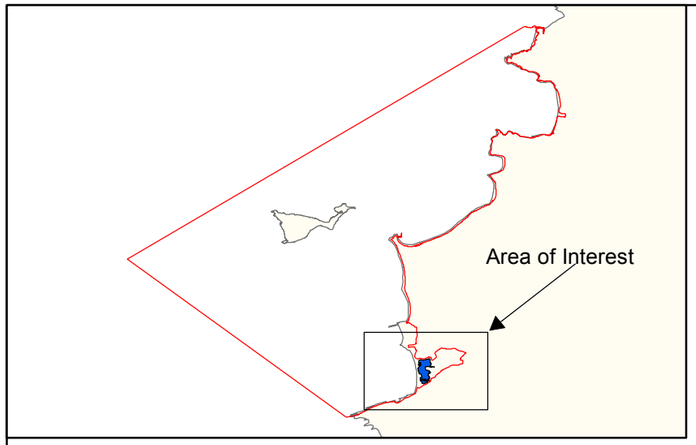
MAP 2:
CARROWMORE POINT TO SPANISH POINT AND ISLANDS SAC
CONSERVATION OBJECTIVES
ADJOINING & OVERLAPPING DESIGNATIONS
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 001021; version 3.01, SAC 002250; version 3.01.
SPA 004182; version 2. CO. CLARE

0 1 2 3 4 km

N

Map Version 1
Date: Feb 2014



Lough Donnell IL035

Legend

- Carrowmore Point to Spanish Point and Islands SAC 001021
- 1150 *Coastal lagoons
- OSi Discovery Series County Boundary

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MAP 3:
CARROWMORE POINT TO SPANISH POINT AND ISLANDS SAC
CONSERVATION OBJECTIVES
COASTAL LAGOONS

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

SITE CODE:
SAC 001021; version 3.01. CO. CLARE

0 100 200 300 400 500 m

N

Map Version 1
Date: Feb 2014

Legend

- Carrowmore Point to Spanish Point and Islands SAC 001021
- 1170 Reefs
- OSi Discovery Series County Boundary

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MAP 4:
CARROWMORE POINT TO SPANISH POINT AND ISLANDS SAC
CONSERVATION OBJECTIVES
REEFS

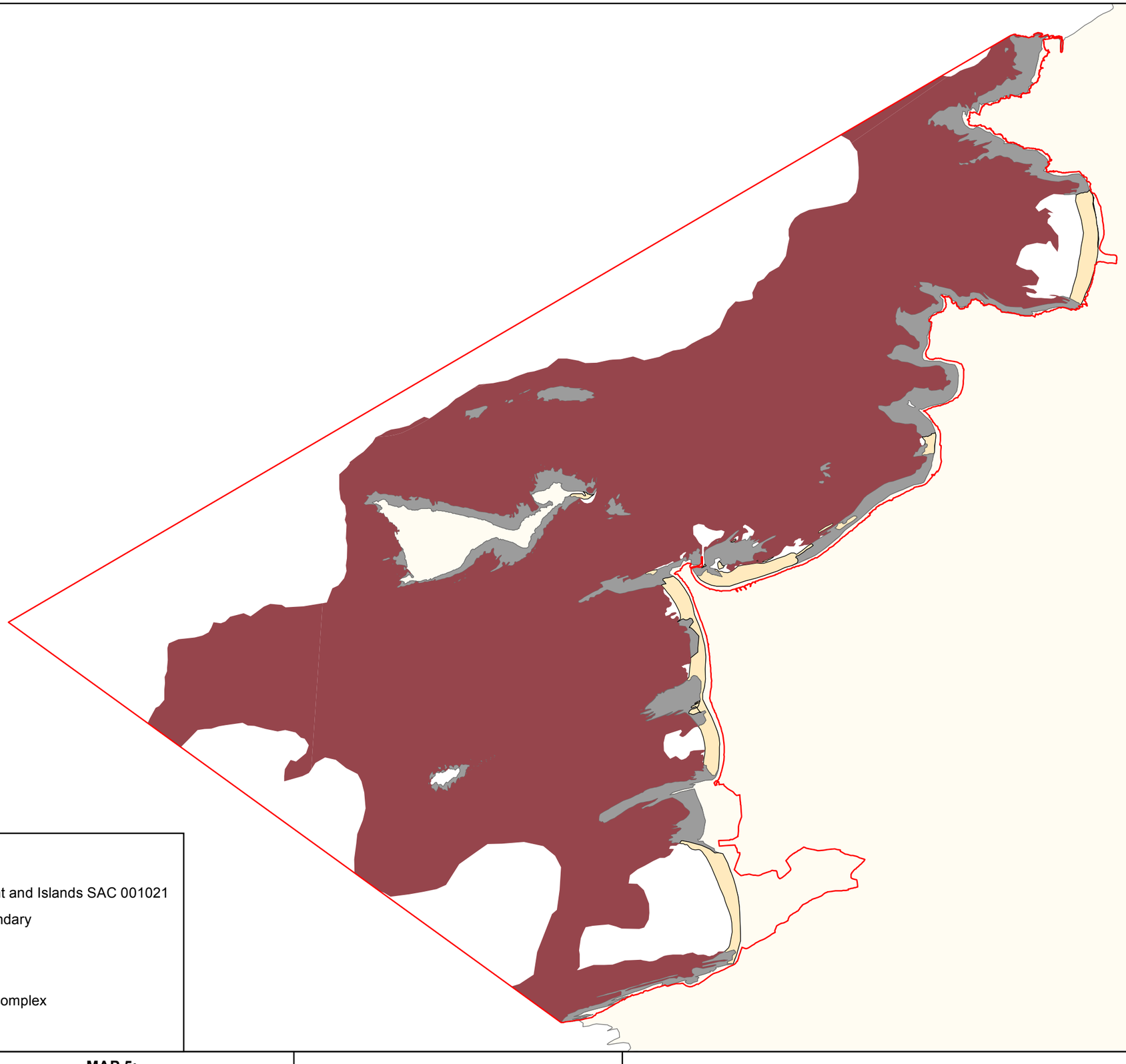
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 001021; version 3.01. CO. CLARE

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Feb 2014



Legend

- Carrowmore Point to Spanish Point and Islands SAC 001021
- OSi Discovery Series County Boundary

Marine Community Types

- Intertidal reef community complex
- *Laminaria*-dominated community complex
- Mobile sand community complex

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MAP 5:
CARROWMORE POINT TO SPANISH POINT AND ISLANDS SAC
CONSERVATION OBJECTIVES
MARINE COMMUNITY TYPES

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

SITE CODE:
SAC 001021; version 3.01. CO. CLARE

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Feb 2014

Caherrush,
Spanish Point and Travaun Bay

Quilty

Carricknola/Tromcastle Strand

CMP: 083

Lough Donnell

Legend

- Carrowmore Point to Spanish Point and Islands SAC 001021

National Shingle Beach Survey sub-sites

- 1220 Perennial vegetation of stony banks

Coastal Monitoring Project sites

- 1220 Perennial vegetation of stony banks
- CMP: 083 Coastal Monitoring Project Site Codes
- 7220 *Petrifying springs with tufa formation (Cratoneurion)
- OSi Discovery Series County Boundary

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MAP 6:
CARROWMORE POINT TO SPANISH POINT AND ISLANDS SAC
CONSERVATION OBJECTIVES
PERENNIAL VEGETATION OF STONY BANKS & PETRIFYING SPRINGS

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

SITE CODE:
SAC 001021; version 3.01. CO. CLARE

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Feb 2014