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Conservation Objectives Series

Glengarriff Harbour and Woodland SAC 000090

An Roinn
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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***

000090	Glengarriff Harbour and Woodland SAC
1024	Kerry Slug *Geomalacus maculosus*
1303	Lesser Horseshoe Bat *Rhinolophus hipposideros*
1355	Otter *Lutra lutra*
1365	Common Seal *Phoca vitulina*
91A0	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)*

Please note that this SAC adjoins Caha Mountains SAC (000093). See map 2. The conservation objectives for this site should be used in conjunction with those for the adjacent site 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 and 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 :	2006
Title :	Otter survey of Ireland 2004/2005
Author :	Bailey, M.; Rochford, J.
Series :	Irish Wildlife Manual No. 23
Year :	2006
Title :	Bat mitigation guidelines for Ireland
Author :	Kelleher, C.; Marnell, F.
Series :	Irish Wildlife Manual No. 25
Year :	2007
Title :	Supporting documentation for the Habitats Directive Conservation Status Assessment - backing documents. Article 17 forms and supporting maps
Author :	NPWS
Series :	Unpublished report to NPWS
Year :	2008
Title :	National survey of native woodlands 2003-2008
Author :	Perrin, P.M.; Martin, J.; Barron, S.; O'Neill, F.H.; McNutt, K.E.; Delaney, A.
Series :	Unpublished Report to NPWS
Year :	2010
Title :	A provisional inventory of ancient and long-established woodland in Ireland
Author :	Perrin, P.M.; Daly, O.H.
Series :	Irish Wildlife Manual No. 46
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 :	Distribution and population dynamics of the Kerry Slug, *Geomalacus maculosus* (Arionidae)
Author :	Mc Donnell, R.J.; Gormally, M.J.
Series :	Irish Wildlife Manual No. 54

Year :	2011
Title :	Harbour seal pilot monitoring project, 2010
Author :	NPWS
Series :	Unpublished Report to NPWS
Year :	2012
Title :	An assessment of the use of conifer plantations by the Kerry Slug *Geomalacus maculosus* with reference to the potential impacts of forestry operations
Author :	Reich, I.; O'Meara, K.; Mc Donnell, R.J.; Gormally, M.J.
Series :	Irish Wildlife Manual No. 64
Year :	2012
Title :	The beetles of decaying wood in Ireland. A provisional annotated checklist of saproxylic Coleoptera
Author :	Alexander, K.N.A.; Anderson, R.
Series :	Irish Wildlife Manual No. 65
Year :	2012
Title :	Harbour seal pilot monitoring project, 2011
Author :	NPWS
Series :	Unpublished Report to NPWS
Year :	2013
Title :	National otter survey of Ireland 2010/12
Author :	Reid, N.; Hayden, B.; Lundy, M.G.; Pietravalle, S.; McDonald, R.A.; Montgomery, W.I.
Series :	Irish Wildlife Manual No. 76
Year :	2013
Title :	An aerial survey of harbour seals in Ireland: part 2: Galway Bay to Carlingford Lough. August-September 2012.
Author :	Duck, C.; Morris, C.
Series :	Unpublished report to NPWS
Year :	2015
Title :	Glengarriff Harbour and Woodland SAC (site code: 90) Conservation objectives supporting document- marine species 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 :	1982
Title :	Otter survey of Ireland
Author :	Chapman, P.J.; Chapman, L.L.
Series :	Unpublished report to Vincent Wildlife Trust
Year :	1983
Title :	An assessment of the breeding populations of common seals (*Phoca vitulina vitulina* L.) in the Republic of Ireland during 1979
Author :	Warner, P.J.
Series :	Irish Naturalists' Journal 21: 24-26

Year :	1991
Title :	The spatial organization of otters (*Lutra lutra*) in Shetland
Author :	Kruuk, H.; Moorhouse, A.
Series :	J. Zool, 224: 41-57
Year :	1997
Title :	Irish wetland woods: the plant communities and their ecology
Author :	Kelly, D.L; Iremonger, S.F.
Series :	Biology and Environment: Proceedings of the Royal Irish Academy, 97B: 1-32
Year :	1999
Title :	Diet of otters (*Lutra lutra*) on Inishmore, Aran Islands, west coast of Ireland
Author :	Kingston, S.; O'Connell, M.; Fairley, J.S.
Series :	Biol & Environ Proc R Ir Acad B 99B:173-182
Year :	2002
Title :	Reversing the habitat fragmentation of British woodlands
Author :	Peterken, G.
Series :	WWF-UK, London
Year :	2006
Title :	Otters - ecology, behaviour and conservation
Author :	Kruuk, H.
Series :	Oxford University Press
Year :	2006
Title :	The status of the harbour seal *Phoca vitulina L.* in inner Bantry Bay, Co. Cork and inner Kenmare River, Co. Kerry, 1964 - 2004
Author :	Heardman, C.; O'Donnell, D.; McMahon, D.
Series :	Irish Naturalist's Journal 28(5): 181-191
Year :	2007
Title :	The abundance, habitat use and haul-out behaviour of harbour seals (*Phoca vitulina vitulina*) in southwest Ireland
Author :	Cronin, M.A.
Series :	Unpublished PhD thesis, University College Cork
Year :	2007
Title :	Protecting and managing underground sites for bats
Author :	Mitchell-Jones, A.J.; Bihari, Z.; Masing, M.; Rodrigues, L.
Series :	EUROBATS Publication Series No. 2
Year :	2008
Title :	The foraging ecology of the harbour seal (*Phoca vitulina vitulina*) in Ireland
Author :	Cronin, M.A.; Kavanagh, A.; Rogan, E.
Series :	Report to the Marine Institute
Year :	2008
Title :	The lesser horseshoe bat conservation handbook
Author :	Schofield, H.W.
Series :	The Vincent Wildlife Trust
Year :	2010
Title :	Otter tracking study of Roaringwater Bay
Author :	De Jongh, A.; O'Neill, L.
Series :	Unpublished draft report to NPWS

Spatial data sources

Year :	Revision 2010
Title :	National Survey of Native Woodlands 2003-2008. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	91A0 (map 3)
Year :	2015
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 :	1024, 1365 (maps 4 and 7)
Year :	2012
Title :	NPWS lesser horseshoe bat database
GIS Operations :	Roosts identified. Expert opinion used as necessary to resolve any issues arising
Used For :	1303 (map 5)
Year :	2007
Title :	Forest Inventory and Planning System, (FIPS)
GIS Operations :	Dataset clipped to 2.5km buffer centred on roost location
Used For :	1303 (map 5)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	Creation of 80m buffer on marine side of high water mark (HWM); creation of 10m buffer on terrestrial side of HWM; combination of 80m and 10m HWM buffer datasets; creation of 10m buffer on terrestrial side of river banks data; creation of 20m buffer applied to canal centreline data. Datasets combined with derived EPA WFD Waterbodies data for 1355 CO. Overlapping regions investigated and resolved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising. Creation of 250m buffer on marine side of HWM to highlight potential commuting points
Used For :	1355 (map 6)
Year :	2010
Title :	EPA WFD Waterbodies data
GIS Operations :	Creation of 20m buffer applied to river and stream centreline data; creation of 80m buffer on aquatic side of lake data; creation of 10m buffer on terrestrial side of lake data. Datasets combined with derived OSi data for 1355 CO. Overlapping regions investigated and resloved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1355 (map 6)
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 7)

91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles

To maintain the favourable conservation condition of Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles in Glengarriff Harbour and Woodland 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. See map 3 for surveyed areas	This SAC encompasses a substantial area of this Annex I woodland type. The National Survey of Native Woodlands (NSNW) (Perrin et al., 2008) surveyed and mapped the area within the Glengarriff Woods Nature Reserve (site no. 1316) as 127.5ha. NB there are other areas of this habitat within the SAC
Habitat distribution	Occurrence	No decline. See map 3 for surveyed location	See note for area above
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	The sizes of at least some of the existing woodlands need to be increased in order to reduce habitat fragmentation and benefit those species requiring 'deep' woodland conditions (Peterken, 2002). Topographical and land ownership constraints may restrict expansion. Constraints may also be imposed by the ecological needs of some species that require open conditions close to woodland habitat, such as some saproxylic species (Alexander and Anderson, 2012)
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi-mature trees and shrubs; and well-developed herb layer	Described in Perrin et al (2008)
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	Described in Perrin et al. (2008)
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	Perrin et al. (2008) report notable regeneration of sessile oak (*Quercus petraea*), birch (*Betula pubescens*), holly (*Ilex aquifolium*), rowan (*Sorbus aucuparia*), yew (*Taxus baccata*) and arbutus (*Arbutus unedo*)
Woodland structure: dead wood	m^3 per hectare; number per hectare	At least 30m^3/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Woodland structure: veteran trees	Number per hectare	No decline	Mature and veteran trees are important habitats for bryophytes, lichens, Kerry slug (*Geomalacus maculosus*), saproxylic organisms and some bird species. Glengarriff woodlands are known as some of the richest for saproxylic insects (Alexander and Anderson, 2012). The retention of such trees is important to ensure continuity of habitats/niches and propagule sources
Woodland structure: indicators of local disctinctiveness	Occurrence	No decline	Includes ancient or long-established woodlands, archaeological and geological features as well as red-data and other rare or localised species including those listed in Alexander and Anderson (2012). See also the conservation objective for Kerry slug (*Geomalacus maculosus*) (1024). Glengarriff is listed as an ancient woodland by Perrin and Daly (2010)

Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	Species reported in Perrin et al. (2008)
Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including oak (*Quercus petraea*) and birch (*Betula pubescens*)	Species reported in Perrin et al. (2008)
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	The following are the most common non-native invasive species in this woodland type: beech (*Fagus sylvatica*), sycamore (*Acer pseudoplatanus*) and rhododendron (*Rhododendron ponticum*). There is an ongoing rhododendron eradication and management programme within the nature reserve

91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)

To maintain the favourable conservation condition of Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) in Glengarriff Harbour and Woodland 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	The extent of this habitat within the SAC has not been calculated. It is described as being present in the vicinity of the confluence of the Canrooska and Glengarriff rivers and along a stretch of the Coomarkane River (NPWS internal files)
Habitat distribution	Occurrence	No decline	See note for area above
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size.	The target areas for individual woodlands aim to reduce habitat fragmentation and benefit those species requiring 'deep' woodland conditions (Peterken, 2002). In some cases, topographical constraints may restrict expansion
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi-mature trees and shrubs; and well-developed herb layer	Described in Perrin et al. (2008)
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	Kelly and Iremonger (1997) list Glengarriff in the Carci remotae-Fraxinetum group, with characters of the Salicetum albo-fragilis group (NPWS internal files)
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	Alder (*Alnus glutinosa*) tends to regenerate poorly. Ash (*Fraxinus excelsior*) often regenerates in large numbers although few seedlings reach pole size
Hydrological regime: Flooding depth/ height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	Periodic flooding is essential to maintain alluvial woodlands along river flood plains but not for woodland around springs/seepage areas
Woodland structure: dead wood	m^3 per hectare; number per hectare	At least $30m^3$/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder)	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Woodland structure: veteran trees	Number per hectare	No decline	Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources
Woodland structure: indicators of local disctinctiveness	Occurrence	No decline	Includes ancient or long-established woodlands, archaeological and geological features as well as red-data and other rare or localised species. Glengarriff is listed as an ancient woodland by Perrin and Daly (2010)
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	Attribute and target based on Perrin et al. (2008)

Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including alder (*Alnus glutinosa*), willows (*Salix* spp.), ash (*Fraxinus excelsior*) and birch (*Betula pubescens*)	Species reported in Kelly and Iremonger (1997) and internal NPWS files
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	The following are the most common invasive species in this woodland type: beech (*Fagus sylvatica*), sycamore (*Acer pseudoplatanus*) and rhododendron (*Rhododendron ponticum*). There is an ongoing rhododendron eradication and management programme within the Glengarriff Wood Nature Reserve

1024 Kerry Slug *Geomalacus maculosus*

To maintain the favourable conservation condition of Kerry Slug in Glengarriff Harbour and Woodland SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: occupied 1km grid squares	Number	Number of occupied 1km squares at least stable. See map 4	The distribution of Kerry slug is not known in detail. Mc Donnell and Gormally (2011) compiled distribution records for the species. There have been positive records from the following 1km squares that overlap with this SAC: V9057, V9156, V9256, V9257
Habitat extent: woodland area	Hectares	Stable or increasing, subject to natural processes	Kerry slug is found in areas of woodland supporting its preferred foodplants- species of epiphytic lichens and mosses especially *Platismatia glauca, Usnea cornuta, Cladonia uncialis, Paromtrema perlatum* and *Lepraria incana* (Reich et al., 2012). The preferred trees are those with rough bark such as sessile oak (*Quercus petraea*) but also conifers (Reich et al., 2012)
Habitat quality: woodland	Proportion of oak trees	Proportion of sessile oak (*Quercus petraea*) in canopy at least stable	Oak is the preferred tree for this species within native broadleaved woodland. See also the conservation objective for Old sessile oakwoods with *Ilex* and *Blechnum* in the British Isles (91A0)
Habitat quality: non-native invasive species	Occurrence	Rhododendron (*Rhododendron ponticum*) in woodland absent or under control	Kerry slug is negatively impacted by the presence of Rhododendron (*Rhododendron ponticum*), which creates excessive shade and reduces cover of its epiphytic foodplants (Mc Donnell and Gormally, 2011). See also the conservation objective for Old sessile oakwoods with *Ilex* and *Blechnum* in the British Isles (91A0)

1303 Lesser Horseshoe Bat *Rhinolophus hipposideros*

To maintain the favourable conservation condition of Lesser Horseshoe Bat in Glengarriff Harbour and Woodland SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population per roost	Number	Minimum number of 252 bats for the summer roost (roost id. 194 in NPWS database); minimum number of 266 for the artificial hibernaculum (roost id. 204) and minimum number of 111 for the paired winter roosts (roost ids. 200 and 205)	A figure of 100 bats for summer roosts and 50 bats for winter roosts was set as a minimum qualifying standard (MQS) when SACs were being selected for lesser horseshoe bats. NPWS conduct annual counts at each qualifying roost. Qualified means from the 2011-2014 data have been calculated whereby the year with the highest maximum count and the year with the lowest maximum count were removed and the mean of the remaining years was calculated. This mean is set as the target figure for the roost. Roosts 200 and 205 are considered paired (the same bats move between them) and a total combined count is used for these sites
Winter roosts	Condition	No decline	This SAC has been selected for lesser horseshoe bats because of the presence of one internationally important winter roost (204) and another pair of winter roosts (200 and 205) that together constitute an internationally important site. Damage or disturbance to these roosts or to the habitat immediately surrounding them will lead to a decline in their condition (Mitchell Jones et al., 2007)
Summer roosts	Condition	No decline	This SAC has been selected for lesser horseshoe bats because of the presence of one important summer roost (194). Damage or disturbance to the roost or to the habitat immediately surrounding the roost will lead to a decline in its condition (Kelleher and Marnell, 2006)
Number of auxillary roosts	Number and condition	No decline	Lesser horseshoe bat populations will use a variety of roosts during the year besides the main roosts listed above. Such additional roosts within the SAC may be important as night roosts / satellite roosts etc. A database of all known lesser horseshoe roosts is available on the National Biodiversity Data Centre website. NB further unrecorded roosts may also be present within this SAC
Extent of potential foraging habitat	Hectares	No significant decline	Lesser horseshoe bats normally forage in woodlands/scrub within 2.5km of their roosts (Schofield, 2008). See map 5 which shows a 2.5km zone around the above roosts and identifies potential foraging grounds
Linear features	Kilometres	No significant loss, within 2.5km of qualifying roosts. See map 5	This species follows commuting routes from its roost to its foraging grounds. Lesser horseshoe bats will not cross open ground. Consequently, linear features such as hedgerows, treelines and stone walls provide vital connectivity for this species, most importantly within 2.5km around each roost (Schofield, 2008)
Light pollution	Lux	No significant increase in artificial light intensity adjacent to named roosts or along commuting routes within 2.5km of those roosts. See map 5	Lesser horseshoes are very sensitive to light pollution and will avoid brightly lit areas. Inappropriate lighting around roosts may cause abandonment; lighting along commuting routes may cause preferred foraging areas to be abandoned, thus increasing energetic costs for bats (Schofield, 2008)

1355 Otter *Lutra lutra*

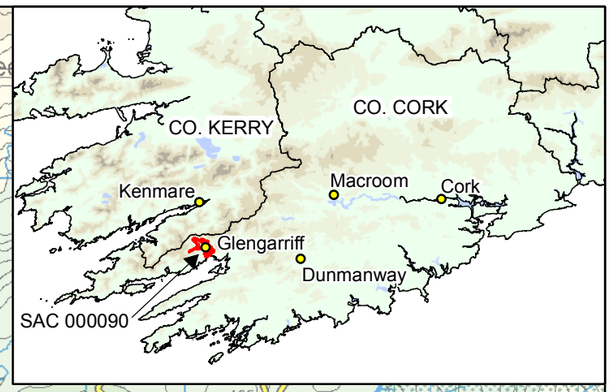
To maintain the favourable conservation condition of Otter in Glengarriff Harbour and Woodland SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. FCS target, based on 1980/81 survey findings, is 88% in SACs. Current range estimated at 93.6% (Reid et al., 2013)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 56ha	No field survey. Areas mapped to include 10m terrestrial buffer along shoreline (above HWM and along river banks) identified as critical for otters (NPWS, 2007)
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 137ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (HWM) (NPWS, 2007; Kruuk, 2006)
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 23.5km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Extent of freshwater (lake/lagoon) habitat	Hectares	No significant decline. Area mapped and calculated as 2ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk, 2006; Kruuk and Moorhouse, 1991)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006; Reid et al., 2013) and wrasse and rockling in coastal waters (Kingston et al., 1999)
Barriers to connectivity	Number	No significant increase. For guidance, see map 6	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed

1365 Common Seal *Phoca vitulina*

To maintain the favourable conservation condition of Harbour Seal in Glengarriff Harbour and Woodland 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 SAC should not be restricted by artificial barriers to site use. See map 6	See marine supporting document for further details
Breeding behaviour	Breeding sites	Conserve the breeding sites in a natural condition. See map 6	Attribute and target based on background knowledge of Irish breeding populations, review of data summarised by Summers et al. (1980), Warner (1983), Harrington (1990), Lyons (2004), Heardman et al. (2006), Cronin (2007) 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 6	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004), Cronin et al. (2004), Heardman et al. (2006), Cronin (2007), NPWS (2010, 2011, 2012), Duck & Morris (2013) 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 6	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004), Heardman et al. (2006), Cronin (2007), Cronin et al. (2008) 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 SAC	See marine supporting document for further details



Legend

Glengarriff Harbour and Woodland SAC 000090

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

MAP 1:
GLENGARRIFF HARBOUR AND WOODLAND SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION

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

SITE CODE:
SAC 000090; version 3.02. CO. CORK

0 0.25 0.5 0.75 1 km

N

Map Version 1
Date: April 2015

SAC 000090

SAC 000093

Legend

- Glengarriff Harbour and Woodland SAC 000090
- Caha Mountains SAC 000093
- OSi Discovery Series County Boundary

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Department of Arts, Heritage and the Gaeltacht

MAP 2:
GLENGARRIFF HARBOUR AND WOODLAND SAC
CONSERVATION OBJECTIVES
ADJOINING / OVERLAPPING DESIGNATIONS

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

SITE CODE:
SAC 000090; version 3.02,
SAC 000093; version 3. CO. CORK / KERRY

0 0.5 1 1.5 2 km

N

Map Version 1
Date: April 2015

Legend

Glengarriff Harbour and Woodland SAC 000090

OSi Discovery Series County Boundary

Woodland Habitats

91AO Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

WN7 Bog woodland

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MAP 3:
GLENGARRIFF HARBOUR AND WOODLAND SAC
CONSERVATION OBJECTIVES
WOODLAND HABITATS

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

SITE CODE:
SAC 000090; version 3.02. CO. CORK

0 0.25 0.5 0.75 1 km

N

Map Version 1
Date: April 2015

V9057

V9257

V9156

V9256

Legend

- Glengarriff Harbour and Woodland SAC 000090
- 1024 Kerry Slug - *Geomalacus maculosus*
- OSi Discovery Series County Boundary

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MAP 4:
GLENGARRIFF HARBOUR AND WOODLAND SAC
CONSERVATION OBJECTIVES
KERY SLUG - *GEOMALACUS MACULOSUS*

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

SITE CODE:
SAC 000090; version 3.02. CO. CORK

0 0.25 0.5 0.75 1 km

N

Map Version 1
Date: April 2015

Legend

- Glengarriff Harbour and Woodland SAC 000090
- 1303 Lesser Horseshoe Bat - *Rhinolophus hipposideros* 2.5km buffer
- 1303 Lesser Horseshoe Bat - *Rhinolophus hipposideros* Potential Foraging Grounds
- OSi Discovery Series County Boundaries

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MAP 5:
GLENGARRIFF HARBOUR AND WOODLAND SAC
CONSERVATION OBJECTIVES
LESSER HORSESHOE BAT

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

SITE CODE:
SAC 000090; version 3.02. CO. CORK

0 0.5 1 1.5 2 km

N

Map Version 1
Date: April 2015

Legend

- Glengarriff Harbour and Woodland SAC 000090
- 1355 Otter-*Lutra lutra* Commuting 250m HWM buffer
- OSi Discovery Series County Boundary

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MAP 6:
GLENGARRIFF HARBOUR AND WOODLAND SAC
CONSERVATION OBJECTIVES
OTTER COMMUTING

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

SITE CODE:
SAC 000090; version 3.02. CO. CORK

0 0.25 0.5 0.75 1 km

N

Map Version 1
Date: April 2015

Legend

- Glengarriff Harbour and Woodland SAC 000090
- 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 7:
GLENGARRIFF HARBOUR AND WOODLAND SAC
CONSERVATION OBJECTIVES
HARBOUR SEAL

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

SITE CODE:
SAC 000090; version 3.02. CO. CORK

0 0.25 0.5 0.75 1 km

N

Map Version 1
Date: April 2015