

Unit 15  
Melbourne Business Park  
Model Farm Road  
Cork



T: 021 434 5366  
E: info@ocallaghanmoran.com  
www.ocallaghanmoran.com

**APPROPRIATE ASSESSMENT**

**STAGE 1 SCREENING**

**PROPOSED INCREASE IN WASTE ACCEPTANCE**

**MATERIALS RECOVERY FACILITY**

**SOLSBOROUGH**

**COUNTY TIPPERARY.**

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

**Prepared For: -**  
Advanced Environmental Services (Ireland) Ltd,  
Solsborough,  
Nenagh,  
County Tipperary.

**Prepared By: -**  
O' Callaghan Moran & Associates,  
Unit 15,  
Melbourne Business Park  
Model Farm Road,  
Cork.

**April 2018**

---

## TABLE OF CONTENTS

---

	<u>PAGE</u>
<b>1. INTRODUCTION.....</b>	<b>1</b>
1.1    METHODOLOGY.....	2
<b>2. DESCRIPTION OF PROJECT.....</b>	<b>3</b>
2.1    SITE LAYOUT .....	3
2.2    WASTE ACTIVITIES .....	3
2.3    SERVICES .....	3
2.3.1    Wastewater Drainage System.....	3
2.3.2    Surface Water Drainage.....	4
2.3.3    Oil & Chemical Storage.....	4
2.4    ENVIRONMENTAL MONITORING .....	4
2.5    HYDROLOGY .....	4
2.6    GEOLOGY & HYDROLOGY.....	4
<b>3. NATURA 2000 SITES .....</b>	<b>5</b>
3.1    NATURA 2000 SITES WITHIN 10KM OF THE DEVELOPMENT SITE.....	5
3.1.1    Lough Derg (Shannon) SPA.....	5
3.1.2    Slievefelim to Silvermines SPA.....	7
3.1.3    Silvermines Mountains West.....	7
<b>4. LIKELY EFFECTS .....</b>	<b>9</b>
4.1    PLAN OR PROJECT .....	9
4.2    DIRECT EFFECTS .....	9
4.3    INDIRECT EFFECTS .....	9
4.4    CUMULATIVE EFFECTS.....	9
<b>5. SCREENING CONCLUSION &amp; STATEMENT.....</b>	<b>10</b>
 <b>APPENDIX 1</b> -       Site Synopsis	
 <b>APPENDIX 2</b> -       Conservation Objectives	

---

# 1. INTRODUCTION

---

Advanced Environmental Solutions (Ireland) Ltd (AES) intends to apply to Tipperary County Council for planning permission to increase the amount of waste accepted at its Materials Recovery Facility at Solsborough, Nenagh from 24,750 tonnes to 30,000 tonnes annually.

The European Union (EU) Habitats Directive (92/43/EC) and the EU Birds Directive (2009/147/EC) identify designated areas (Special Areas of Conservation (SAC) and Special Protection Areas (SPA) respectively) that are collectively known as Natura 2000 Sites.

The Habitats Directive, which is implemented under the European Communities Birds and Natural Habitats) Regulations 2011 (S.I. No 477 of 2011), requires an “appropriate assessment” of the potential impacts any proposed development that may have an impact on the conservation objectives of any Natura 2000 site.

Article 6(3) of the Directive stipulates that *any plan or project not directly connected with or necessary to the management of a Natura 2000 site, but likely to have a significant effect thereon...shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives.*

Guidance documents issued by Department of Environment, Heritage and Local Government and the National Parks and Wildlife Services recommend that the assessment be completed in a series of Stages, which comprise:

## *Stage 1: Screening*

The purpose of this Stage is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in combination with other plans or projects, could have significant effects on a Natura 2000 site in respect of the site’s conservation objectives.

## *Stage 2: Appropriate Assessment*

This Stage is required if the Stage 1 Screening exercise identifies that the project is likely to have a significant impacts on a Natura 2000 site.

## *Stage 3: Assessment of Alternative Solutions*

If Stage 2 determines that the project will have an adverse impact upon the integrity of a Natura 2000 site, despite the implementation of mitigation measures, it must be objectively concluded that no alternative solutions exist before the plan can proceed.

## *Stage 4: Compensatory Measures*

Where no alternative solutions are feasible and where adverse impacts remain but imperative reasons of overriding public interest require the implementation of a project an assessment of compensatory measures that will effectively offset the damage to the Natura site 2000 is required.

AES commissioned O'Callaghan Moran & Associates (OCM) to complete a Stage 1 Screening to determine the effects of the proposed increase in the amount of waste accepted on the nearby Natura 2000 sites.

### **1.1 Methodology**

The Stage 1 Screening was based on a site inspection and the scope of the proposed development. It was conducted in accordance with the guidance presented in the "Assessment of Plans and Projects significantly affecting Natura 2000 sites, Methodological Guidance on the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC" (2001); The Department of Environment, Heritage and Local Government (2009, revised February 2010) Appropriate Assessment of Plans and Projects in Ireland and the National Parks and Wildlife Services (2010) Circular NPW 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.

For inspection purposes only.  
Consent of copyright owner required for any reuse.

---

## 2. DESCRIPTION OF PROJECT

---

### 2.1 Site Layout

The facility encompasses 6,855m<sup>2</sup>. There are two entrances on the southern site boundary. The western one is for waste collection and transport vehicles, while the eastern one is for the civic amenity area and customer access to the service support offices. There are six operational areas – Main Processing Building, Garage, Administration Buildings, Quarantine Area Fuelling Station, Vehicle/Bin Wash, and Weighbridge. The entire site, including the floors of the buildings and the open yard areas, is paved with concrete.

### 2.2 Waste Activities

The operational hours are 7am to 8pm Monday to Saturday. The facility does not normally open on Sundays or Public Holidays, but can do so subject to EPA approval. All waste processing is carried out inside the Process Building and includes:

- Segregation of recyclable materials (paper, cardboards, plastic, wood, metals, glass);
- Bulking of Municipal Solid Waste (MSW);
- Transfer of recovered and residual materials to appropriately licensed recycling, recovery and disposal outlets.

### 2.3 Services

The facility obtains water from the mains supply provided by Irish Water. Electricity is supplied by a utility company.

#### 2.3.1 Wastewater Drainage System

Wash water from the Vehicle/Bin Wash areas passes through an oil interceptor/silt trap into an underground pump sump from where it is pumped via a rising main to the Irish Water foul sewer located outside the site entrance.

Some of the incoming wastes can contain small quantities of liquid and this is collected in a central drain in the floor of the Main Processing Building, which connects to the underground pump sump via an oil interceptor. Sanitary wastewater connects to the outfall from the central foul water silt trap/oil interceptor and enters the pump sump.

### 2.3.2 Surface Water Drainage

Rainwater run-off from the paved yards, weighbridge and building roofs is collected and directed through a silt trap and oil interceptor before being discharged to an open drain that starts at the northeast site boundary. This drain, which is seasonal, is a tributary of the Ardregane Stream that flows into Lough Derg, approximately 6km to the north-west of the facility.

### 2.3.3 Oil & Chemical Storage

Diesel for the waste collection trucks and the mobile plant used to handle the waste is stored in above ground tanks located at the rear of the Main Processing Building and in the Garage respectively. Engine and hydraulic oil are stored in above ground tanks in the Garage, with smaller containers on a bunded pallet also inside Garage.

Ad-blue is stored in the Quarantine Area. Detergents and disinfectants used in the Vehicle/Bin Wash are stored on a bund in the Garage. Waste oil is also stored in the Garage in an above ground tank.

## 2.4 Environmental Monitoring

The EPA Licence specifies emission limit values for the rain water run-off, dust and noise and requires regular surface water, dust and noise monitoring to confirm compliance with the emission limit values and if they are exceeded to ensure corrective actions are carried out.

## 2.5 Hydrology

The site is within the Ardregane, Trib of Shannon Lower Water Body, as designated in the Shannon International River (SIRBD) Basin District Management Plan. The overall status of this water body is 'Moderate' and 'At Risk' with an overall objective to 'Restore' by 2021.

## 2.6 Geology & Hydrology

The site is entirely covered by buildings and concrete paving. The subsoils in the locality are glacial tills that are between 0 and 3m thick. The underlying bedrock is a lime mudstone, which is classified as a locally important aquifer, which is only moderately productive in local zones. The aquifer vulnerability rating beneath the site is Extreme. The direction of groundwater flow is expected to be to the north-west towards the Ardregane Stream.

---

### 3. NATURA 2000 SITES

---

SACs are selected for the conservation and protection of habitats listed on Annex I and species (other than birds) listed on Annex II of the Habitats Directive, and their habitats. The habitats on Annex I require special conservation measures. SPAs are selected for the conservation and protection of bird species listed on Annex I of the Birds Directive and regularly occurring migratory species, and their habitats, particularly wetlands.

Favourable Conservation Status of a habitat, as defined in 2011 Birds and Natural Habitats Regulations, is 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.

Conservation Status of a species is when:

- the favourable 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,
- 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.

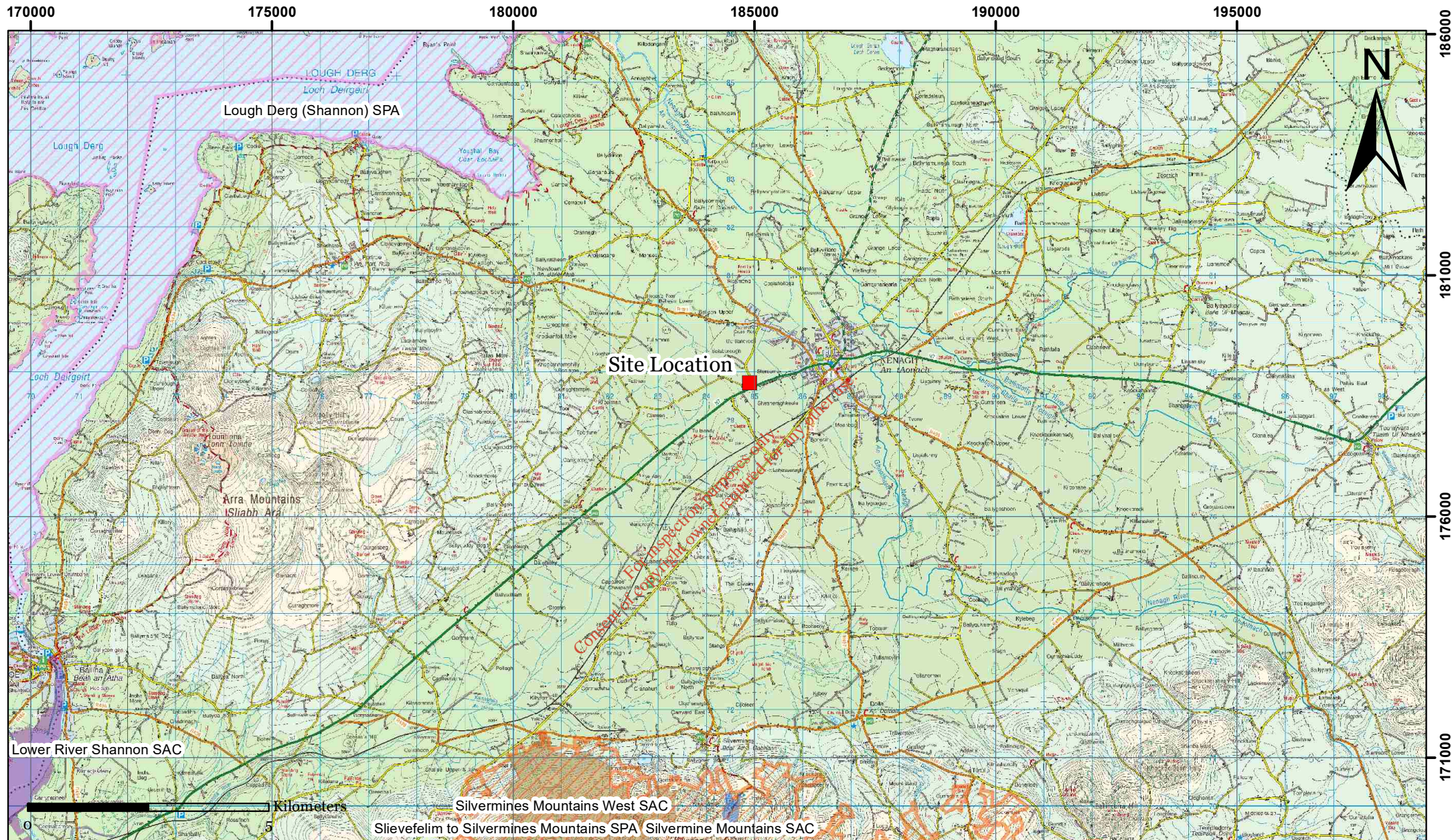
#### 3.1 Natura 2000 Sites within 10km of the Development Site.

The proposed development area is neither in nor adjacent to a Natura 2000 Site. The Natura sites within 10km of the site are the Lough Derg (Shannon) SPA (004058), 6m to the east; Slievefelim to Silvermines Mountains SPA 8.5km to the south and Silver Mountains West SAC (002258) 8.5km to the south, as shown on Figure 3.1. The full site synopsis and conservation objectives for the sites are in Appendix 1 and summarised below:

##### 3.1.1 Lough Derg (Shannon) SPA

The generic conservation objective for Lough Derg is to maintain or restore the favourable conservation condition of the following bird species:

Bird Code	Common Name	Scientific Name
A017	Cormorant	<i>Phalacrocorax carbo</i>
A061	Tufted Duck	<i>Aythya fuligula</i>



O'Callaghan Moran & Associates,  
 Unit 15 Melbourne Business Park,  
 Model Farm Road, Cork.  
 Tel. (021) 4345366  
 email: info@ocallaghanmoran.com

CLIENT

AES Nenagh

Details:

- Site Location
- Lough Derg (Shannon) SPA
- Silvermine Mountains SAC
- Slievefelim to Silvermines Mountains SPA
- Lower River Shannon SAC
- Silvermines Mountains West SAC

TITLE

Natura 2000 Sites

Figure 3.1

This drawing is the property of O'Callaghan Moran & Associates and shall not be used, produced or disclosed to anyone without the prior written permission at O'Callaghan Moran & Associates and shall be returned upon request.



A067	Goldeneye	<i>Bucephala clangula</i>
A193	Common Tern	<i>Sterna hirundo</i>

To acknowledge the importance of Ireland's wetlands to wintering waterbirds, "Wetland and Waterbirds" may be included as a Special Conservation Interest for some SPAs that have been designated for wintering waterbirds and that contain a wetland site of significant importance to one or more of the species of Special Conservation Interest.

Therefore it is an objective is to maintain or restore the favourable conservation condition of the wetland habitat at Lough Derg SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

Lough Derg (Shannon) SPA is of high ornithological importance as it supports nationally important breeding populations of Cormorant and Common Tern. In winter, it has nationally important populations of Tufted Duck and Goldeneye, as well as a range of other species including Whooper Swan. The presence of Whooper Swan, Greenland White-fronted Goose, Hen Harrier and Common Tern is of particular note as these are listed on Annex I of the EU Birds Directive.

### 3.1.2 Slievefelim to Silvermines SPA

The conservation objective for this SPA is to maintain or restore the favourable conservation condition of the following bird species:

Bird Code	Common Name	Scientific Name
A082	Hen Harrier	<i>Circus cyaneus</i>

The Slievefelim to Silvermines Mountains SPA is of ornithological importance because it provides excellent nesting and foraging habitat for breeding Hen Harrier and is one of the top sites in the country for the species. The presence of three species, Hen Harrier, Merlin and Peregrine, which are listed on Annex I of the EU Birds Directive is of note.

### 3.1.3 Silvermines Mountains West

Silvermines Mountains West SAC was selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (numbers in brackets are Natura 2000 codes):

- 4010 Northern Atlantic wet heaths with *Erica tetralix*
- 4030 European dry heaths
- 6130 Calaminarian grasslands of the *Violetalia calaminariae*

This SAC overlaps with Slievefelim to Silvermines Mountain SPA (004165) and is adjacent to Lower River Shannon SAC (002165). The conservation objectives for this site should be used in conjunction with those for the overlapping and adjacent sites as appropriate.

The site is of conservation importance for its heath and grassland vegetation, and as a foraging area for Hen Harrier, and is one of the only extensive unplanted uplands remaining in north Tipperary.

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

---

## 4. LIKELY EFFECTS

---

### 4.1 Plan or Project

The proposed development will not give rise to any emission to surface water, groundwater or atmosphere. The construction stage will be a source of noise emissions, but there will be no noise emissions in the operational phase.

### 4.2 Direct Effects

The facility is not located within any designated Natura 2000 Site and therefore the operation does not result in any direct habitat loss or fragmentation of a Natura 2000 Site.

The closest Natura 2000 Sites are 6 km to the north-west (Lough Derg (Shannon) SPA) and more 8km to the south (Sleivefelim to Silvermines SPA and Silvermines Mountains West SAC) Bog SAC.

There are no environmental pathways (e.g. surface water course, groundwater movement) between the development site and Natura 2000 Sites to the south. There is a potential pathway between the development site and the Lough Derg SPA, which is the drain into which rain water run-off from the building roofs and yards discharges.

The run-off passes through a silt trap and oil interceptor before entering the drain. AES monitors the site in accordance with the requirements of the EPA licence. The results of monitoring carried out in 2017 are tabulated in Appendix 2. The Table includes for comparative purposes the warning and action trigger levels agreed with the EPA. The results indicate the quality of the discharge is generally good and does not present any risk of a direct adverse effect on the species for which the site was selected.

### 4.3 Indirect Effects

Based on the distance between the development site and the Natura 2000 Site and the species for which the Sites were selected, the construction phase will have no effect on these designated areas.

### 4.4 Cumulative Effects

The development will not contribute to cumulative effects on the SAC and the SPAs.

---

## 5. SCREENING CONCLUSION & STATEMENT

---

The proposed increase in the annual waste throughput will not result in any new or additional emission/disturbance that could present a significant risk to the Conservation Objectives of any of the Natura 2000 Sites within 10km of the MRF. Therefore a Natura Impact Statement is not required.

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

**APPENDIX 1**  
**SITE SYNOPSIS**

For inspection purposes only. Consent of copyright owner required for any other use.

## SITE SYNOPSIS

**SITE NAME: LOUGH DERG (SHANNON) SPA**

**SITE CODE: 004058**

Lough Derg lies within counties Tipperary, Galway and Clare and is the largest of the River Shannon Lakes, being some 40 km long. Its maximum breadth across the Scarriff Bay -Youghal Bay transect is 13 km but for most of its length it is less than 5 km wide. The lake is relatively shallow at the northern end being mostly 6 m in depth but in the middle region it has an axial trench and descends to over 25 m in places. The narrow southern end of the lake has the greatest average depth, with a maximum of 34 m. The greater part of the lake lies on Carboniferous limestone but the narrow southern section is underlain by Silurian strata. Most of the lower part of the lake is enclosed by hills on both sides, the Slieve Aughty Mountains to the west and the Arra Mountains to the east. The northern end is bordered by relatively flat, agricultural country. The lake shows the high hardness levels and alkaline pH to be expected from its mainly limestone catchment basin, and it has most recently been classified as a mesotrophic system. The lake has many small islands, especially on its western and northern sides. The shoreline is often fringed with swamp vegetation. Aquatic vegetation includes a range of charophyte species, including the Red Data Book species, *Chara tomentosa*. The shoreline is often fringed by swamp vegetation, comprised of such species as Common Reed (*Phragmites australis*), Great Fen-sedge (*Cladium mariscus*) and Bottle Sedge (*Carex rostrata*).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Cormorant, Tufted Duck, Goldeneye and Common Tern. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Lough Derg is of importance for both breeding and wintering birds. The site supports a nationally important breeding colony of Common Tern (55 pairs recorded in 1995). Management of one of the islands used for nesting has increased the area of suitable habitat available and prevented nests being destroyed by fluctuating water levels. Large numbers of Black-headed Gull have traditionally bred on the many islands (2,176 pairs in 1985) but the recent status of this species is not known. The islands in the lake also support a nationally important Cormorant colony - 167 pairs were recorded in 1995; a partial survey of the lake in 2010 recorded 113 pairs. Lough Derg is also a noted breeding site for Great Crested Grebe (47 pairs in 1995) and Tufted Duck (169 pairs in May 1995).

In winter, the lake is important for a range of waterfowl species, including nationally important populations of Tufted Duck (776) and Goldeneye (157) – all figures are mean peaks for 4 of the 5 seasons between 1995/96 and 1999/2000. Other species which occur in winter include Mute Swan (164), Whooper Swan (18), Wigeon (249), Teal (301), Mallard (376), Little Grebe (14), Cormorant (90), Coot (173), Lapwing

(922), Curlew (66) and Black-headed Gull (732). Areas to north and south west of Lough Derg have been utilised in the past by small numbers of Greenland White-fronted Goose – 19 geese were recorded on callowland near Portumna in 1996/97. A relatively small flock based in the Lough Derg-Lough Graney area and possibly further afield have been recorded in the Scarriff Bay area – 20 geese recorded in 2004. Few sightings, at either location have been made in recent years.

Hen Harrier are also known to roost in the reedbeds on the margins of the site during the winter.

Lough Derg (Shannon) SPA is of high ornithological importance as it supports nationally important breeding populations of Cormorant and Common Tern. In winter, it has nationally important populations of Tufted Duck and Goldeneye, as well as a range of other species including Whooper Swan. The presence of Whooper Swan, Greenland White-fronted Goose, Hen Harrier and Common Tern is of particular note as these are listed on Annex I of the E.U. Birds Directive. Parts of Lough Derg (Shannon) SPA are a Wildfowl Sanctuary.

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

8.7.2014



**Site Name: Silvermines Mountains West SAC**

**Site Code: 002258**

Silvermines Mountains West SAC is situated to the north of Keeper Hill, about 10 km south of Nenagh in Co. Tipperary. Reaching an altitude of 489 m, this rather steep ridge of Old Red Sandstone is visibly very prominent in the landscape when viewed from the Nenagh to Limerick road. The site includes the summit and slopes, mostly above 200 m, to the west of an extensively afforested area south of the town of Silvermines.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (\* = priority; numbers in brackets are Natura 2000 codes):

[4010] Wet Heath
[4030] Dry Heath
[6130] Calaminarian Grassland

The main habitats that occur within Silvermines Mountains West SAC are heath (mostly wet heath but some dry heath) and unimproved upland grassland. The wet heath is particularly well developed with tall stands of Heather (*Calluna vulgaris*) and a high cover of bog mosses (*Sphagnum* spp.). Other species of wet heath include Deergrass (*Scirpus cespitosus*), cottongrasses (*Eriophorum angustifolium* and *E. vaginatum*), Purple Moor-grass (*Molinia caerulea*), Cross-leaved Heath (*Erica tetralix*), Tormentil (*Potentilla erecta*) and Heath Rush (*Juncus squarrosus*). Smaller areas of more species-rich wet heath with Hard Fern (*Blechnum spicant*), Mat-grass (*Nardus stricta*) and Great Wood-rush (*Luzula sylvatica*) also occur. From east to west there is a gradation from wet to dry heath, and from peaty to mineral soil. Dry heath, characterised by Western Gorse (*Ulex gallii*) and Bell Heather (*Erica cinerea*), is also found on the more steeply sloping ground below the summit ridge and on outcropping rock exposures. Gorse (*Ulex europaeus*) has invaded dry heath areas on the sides of some of the streams. Patchy remnants of blanket bog occur on the summit plateau in places and there is evidence of extensive former peat-cutting here.

Calaminarian Grassland vegetation is extensive (0.9 ha) and well developed at Shallee, an extensive old lead mine on the northern side of the site, with much the largest of the four Irish populations of the rare moss *Ditrichum plumbicola* and a tiny amount of the rare liverwort *Cephaloziella nicholsonii*. Threats are obvious from ongoing restoration work on an engine house ruin, and existence of large areas of derelict land with rusting oil drums, cables and dangerous open adits and workings.



Upland grassland is widespread on the lower mountain slopes, in many of the upper fields and on the steep south-facing slopes. Grassland also extends up onto the ridge at the western end of the site. Common species that characterise this acid grassland vegetation include Sheep's-fescue (*Festuca ovina*), Mat-grass, Common Bent (*Agrostis capillaris*), Crested Dog's-tail (*Cynosurus cristatus*), Germander Speedwell (*Veronica chamaedrys*), Tormentil, Heath Bedstraw (*Galium saxatile*) and a range of mosses such as *Rhytidiadelphus squarrosus*, *Hylocomium splendens* and *Brachythecium rutabulum*. Parts of the lower southern slopes are covered with dense Bracken (*Pteridium aquilinum*).

A number of small streams and flushes descend the slopes. These sometimes support a richer vegetation, with plants such as rushes (*Juncus effusus* and *J. articulatus*), sedges (*Carex nigra*, *C. panicea*, *C. lepidocarpa*, *C. echinata*, *C. ovalis* and *C. pulicaris*) and a variety of herbs, including Meadowsweet (*Filipendula ulmaria*), Ragged-Robin (*Lychnis flos-cuculi*), Bog Pimpernel (*Anagallis tenella*), Water Mint (*Mentha aquatica*) and Marsh Violet (*Viola palustris*).

The site is also important for birds. Up to 11 pairs of Hen Harriers are known to use these uplands as part of a wider range between Silvermines and Slieve Felim to the south. Hen Harriers are uncommon birds, and are listed under Annex I of the E.U. Birds Directive. The Silvermines provide useful foraging habitat for some of these birds.

The vegetation at this site is in good condition, with low grazing pressure throughout and no signs of over-grazing. One fifth of the site was burned in 2003 and there is evidence of former burning in another fifth. Former peat-cutting has occurred on the summit plateau and parts of the northern slopes. Afforestation, which is widespread to the east of the site, remains the greatest threat.

The site is of conservation importance for its heath and grassland vegetation, and as a foraging area for Hen Harrier, and is one of the only extensive unplanted uplands remaining in north Tipperary.

## SITE SYNOPSIS

**SITE NAME: SLIEVEFELIM TO SILVERMINES MOUNTAINS SPA**

**SITE CODE: 004165**

The Slievefelim to Silvermines Mountains SPA is an extensive upland site located in Counties Tipperary and Limerick. Much of the site is over 200 m in altitude and rises to 694 m at Keeper Hill. Other peaks included in the site are Slieve Felim, Knockstanna, Knockappul, Mother Mountain, Knockteige, Cooneen Hill and Silvermine Mountain. The site is underlain mainly by sandstones of Silurian age. Several important rivers rise within the site, including the Mulkear, Bilboa and Clare.

The site consists of a variety of upland habitats, though approximately half is afforested. The coniferous forests include first and second rotation plantations, with both pre-thicket and post-thicket stands present. Substantial areas of clear-fell are also present at any one time. The principal tree species present are Sitka Spruce (*Picea sitchensis*) and Lodgepole Pine (*Pinus contorta*). Roughly one-quarter of the site is unplanted blanket bog and heath, with both wet and dry heath present. The bog and heath vegetation includes such typical species as Ling Heather (*Calluna vulgaris*), Bilberry (*Vaccinium myrtillus*), Bell Heather (*Erica cinerea*), Common Cottongrass (*Eriophorum angustifolium*), Hare-tail Cottongrass (*Eriophorum vaginatum*), Deergass (*Scirpus cespitosus*) and Purple Moor-grass (*Molinia caerulea*). The remainder of the site is mostly rough grassland that is used for hill farming. This varies in composition and includes some wet areas with rushes (*Juncus* spp.) and some areas subject to scrub encroachment. Some stands of deciduous woodland also occur, especially within the river valleys.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Hen Harrier.

The site is one of the strongholds for Hen Harrier in the country. A survey in 2005 recorded five breeding pairs in the SPA, while nine pairs had been recorded in the 1998-2000 period. These numbers recorded in 2005 represent 3.7 % of the all-Ireland total. The mix of forestry and open areas provides optimum habitat conditions for this rare bird, which is listed on Annex I of the E.U. Birds Directive. The early stages of new and second-rotation conifer plantations are the most frequently used nesting sites, though some pairs may still nest in tall heather of unplanted bogs and heath. Hen Harriers will forage up to c. 5 km from the nest site, utilising open bog and moorland, young conifer plantations and hill farmland that is not too rank. Birds will often forage in openings and gaps within forests. In Ireland, small birds and small mammals appear to be the most frequently taken prey.

The site is also a traditional breeding site for a pair of Peregrine. Merlin has been recorded within the site but further survey is required to determine its status. Red Grouse is found on some of the unplanted areas of bog and heath – this is a species that has declined in Ireland and is now Red-listed.

The Slievefelim to Silvermines Mountains SPA is of ornithological importance because it provides excellent nesting and foraging habitat for breeding Hen Harrier and is one of the top sites in the country for the species. The presence of three species, Hen Harrier, Merlin and Peregrine, which are listed on Annex I of the E.U. Birds Directive is of note.

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

20.1.2015

For inspection purposes only.  
Consent of copyright owner required for any other use.

# APPENDIX 2 CONSERVATION OBJECTIVES



## Conservation objectives for Lough Derg (Shannon) SPA [004058]

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.

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.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

Bird Code	Common Name	Scientific Name
A017	Cormorant	<i>Phalacrocorax carbo</i>
A061	Tufted Duck	<i>Aythya fuligula</i>
A067	Goldeneye	<i>Bucephala clangula</i>
A193	Common Tern	<i>Sterna hirundo</i>

To acknowledge the importance of Ireland's wetlands to wintering waterbirds, "Wetland and Waterbirds" may be included as a Special Conservation Interest for some SPAs that have been



designated for wintering waterbirds and that contain a wetland site of significant importance to one or more of the species of Special Conservation Interest. Thus, a second objective is included as follows:

**Objective:** To maintain or restore the favourable conservation condition of the wetland habitat at Lough Derg (Shannon) SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

**Citation:** NPWS (2018) Conservation objectives for Lough Derg (Shannon) SPA [004058]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

For inspection purposes only.  
Consent of copyright owner required for any other use.

# National Parks and Wildlife Service

## *Conservation Objectives Series*

### Silvermines Mountains West SAC 002258



An Roinn  
Cultúir, Oidhreachta agus Gaeltachta  
Department of  
Culture, Heritage and the Gaeltacht

For inspection purposes only.  
Consent of copyright owner required for any other use.



**National Parks and Wildlife Service,  
Department of Culture, Heritage and the Gaeltacht,  
7 Ely Place, Dublin 2, Ireland.  
Web: [www.npws.ie](http://www.npws.ie)  
E-mail: [nature.conservation@ahg.gov.ie](mailto:nature.conservation@ahg.gov.ie)**

**Citation:**

**NPWS (2017) Conservation Objectives: Silvermines Mountains West SAC  
002258. Version 1. National Parks and Wildlife Service, Department of Culture,  
Heritage and the Gaeltacht.**

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

**Series Editor: Rebecca Jeffrey  
ISSN 2009-4086**



## 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*

---

002258	Silvermines Mountains West SAC
4010	Northern Atlantic wet heaths with <i>Calluna vulgaris</i>
4030	European dry heaths
6130	Calaminarian grasslands of the <i>Violetalia calaminariae</i>

---

**Please note that this SAC overlaps with Slievefelim to Silvermines Mountain SPA (004165) and is adjacent to Lower River Shannon SAC (002165). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping and adjacent sites as appropriate.**

For inspection purposes only.  
Consent of copyright owner required for any other use.

## Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: [www.npws.ie/Publications](http://www.npws.ie/Publications)

### NPWS Documents

<b>Year :</b>	2009
<b>Title :</b>	Bryophytes and metallophyte vegetation on metalliferous mine-waste in Ireland
<b>Author :</b>	Holyoak, D.T.
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2012
<b>Title :</b>	Ireland Red List No. 8: Bryophytes
<b>Author :</b>	Lockhart, N.; Hodgetts, N.; Holyoak, D.
<b>Series :</b>	Ireland Red List series, NPWS
<b>Year :</b>	2013
<b>Title :</b>	The status of EU protected habitats and species in Ireland. Volume 2. Habitats assessments
<b>Author :</b>	NPWS
<b>Series :</b>	Conservation assessments
<b>Year :</b>	2014
<b>Title :</b>	Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland, Version 2.0
<b>Author :</b>	Perrin, P.M.; Barron, S.J.; Roche, J.R.; O'Hanrahan, B.
<b>Series :</b>	Irish Wildlife Manual No. 79
<b>Year :</b>	2016
<b>Title :</b>	Ireland Red List No. 10: Vascular Plants
<b>Author :</b>	Wyse Jackson, M.; FitzPatrick, Ú.; Cole, E.; Jebb, M.; McFerran, D.; Sheehy Skeffington, M.; Wright, M.
<b>Series :</b>	Ireland Red Lists series, NPWS

### Other References

<b>Year :</b>	2000
<b>Title :</b>	Appendix 2. Notes on the status and ecology of <i>Ditrichum cornubicum</i>
<b>Author :</b>	Holyoak, D.T.; Clements, R.; Coleman, M.R.J.; MacPherson, K.S.
<b>Series :</b>	English Nature Research Reports, No. 328: 40-50
<b>Year :</b>	2001
<b>Title :</b>	Heavy metal concentrations in the soil substrates associated with rare bryophytes at former metalliferous mining sites in East Cornwall
<b>Author :</b>	Walsh, L.
<b>Series :</b>	Unpublished B.Sc. Thesis, University of Hertfordshire
<b>Year :</b>	2009
<b>Title :</b>	Common Standards Monitoring guidance for upland habitats
<b>Author :</b>	JNCC
<b>Series :</b>	Joint Nature Conservation Committee, Peterborough
<b>Year :</b>	2012
<b>Title :</b>	Rare and threatened bryophytes of Ireland
<b>Author :</b>	Lockhart, N.; Hodgetts, N.; Holyoak, D.
<b>Series :</b>	National Museums Northern Ireland

**Year :** 2013  
**Title :** Conservation of selected legally protected and Red Listed bryophytes in Ireland  
**Author :** Campbell, C.  
**Series :** Unpublished Ph.D. Thesis, Trinity College Dublin

---

**Year :** 2013  
**Title :** Interpretation manual of European Union habitats- Eur 28  
**Author :** European Commission- DG Environment  
**Series :** European Commission

---

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

## Spatial data sources

**Year :** 2012  
**Title :** Bryophytes and Metallophyte Vegetation on Metalliferous Mine-waste in Ireland  
**GIS Operations :** Sites identified; clipped to SAC boundary  
**Used For :** 6130 (map 3)

---

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

**4010 Northern Atlantic wet heaths with *Erica tetralix***

**To maintain the favourable conservation condition of Northern Atlantic wet heaths with *Erica tetralix* in Silvermines Mountains West 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	Northern Atlantic wet heaths with <i>Erica tetralix</i> has not been mapped in detail for Silvermines Mountains West SAC and thus the total area of the qualifying habitat in the SAC is unknown. Wet heath is the main habitat in Silvermines Mountains West SAC. The habitat is well-developed and shows good transitions to European dry heaths (4030), blanket bog and upland grassland in the SAC (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See the notes on Habitat area above
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil nutrient status within natural range	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat (NPWS, 2013)
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	The entire diversity of wet heath vegetation communities within this SAC is unknown. Further information on vegetation communities associated with this habitat is presented in Perrin et al. (2014)
Vegetation composition: cross-leaved heath	Occurrence within 20m of a representative number of monitoring stops	Cross-leaved heath ( <i>Erica tetralix</i> ) present within a 20m radius of each monitoring stop	Attribute and target based on Perrin et al. (2014). Cross-leaved heath is the only characteristic species of the habitat listed in European Commission (2013). Whilst it is seldom abundant in wet heaths, its presence at high frequencies is considered one of the few characteristics common between the varied communities of this habitat (JNCC, 2009)
Vegetation composition: positive indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of positive indicator species at least 50%	Attribute and target based on Perrin et al. (2014), where the list of positive indicator species for this habitat is also presented. Positive indicator species recorded in the habitat in the SAC include ling ( <i>Calluna vulgaris</i> ), common cottongrass ( <i>Eriophorum angustifolium</i> ), tormentil ( <i>Potentilla erecta</i> ), cross-leaved heath ( <i>Erica tetralix</i> ), with a good layer of bog mosses ( <i>Sphagnum</i> spp., e.g. <i>Sphagnum capillifolium</i> and <i>S. papillosum</i> ) and pleurocarpous mosses, including <i>Hypnum cupressiforme</i> , present (NPWS internal files)
Vegetation composition: lichens and bryophytes	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of <i>Cladonia</i> and <i>Sphagnum</i> species, <i>Racomitrium lanuginosum</i> and pleurocarpous mosses at least 10%	Attribute and target based on Perrin et al. (2014). A plentiful lichen/bryophyte layer is characteristic of this habitat
Vegetation composition: ericoid species and crowberry	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of ericoid species and crowberry ( <i>Empetrum nigrum</i> ) at least 15%	Attribute and target based on Perrin et al. (2014). A dwarf shrub layer with ericoid species is characteristic of this habitat (crowberry is only rarely present). Low cover of these species would be indicative of chronic overgrazing, burning, etc.
Vegetation composition: dwarf shrub species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of dwarf shrubs less than 75%	Attribute and target based on Perrin et al. (2014). A dwarf shrub layer is characteristic of wet heaths, but the vegetation should be a mixture of dwarf shrub and graminoid species, with higher cover of dwarf shrubs being potentially indicative of drainage
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of negative indicator species less than 1%	Attribute and target based on Perrin et al. (2014), where the list of negative indicator species for this habitat is also presented

Vegetation composition: non-native species	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014). Non-native species can be invasive and have deleterious effects on native vegetation. A low target is set as non-native species can spread rapidly and are most easily dealt with when still at lower abundances
Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 20%	Attribute and target based on Perrin et al. (2014). High cover of native trees and shrubs would indicate that the habitat may be succeeding towards scrub or woodland due to lack of grazing or due to the habitat drying out
Vegetation composition: bracken	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of bracken ( <i>Pteridium aquilinum</i> ) less than 10%	Attribute and target based on Perrin et al. (2014). High cover of bracken would indicate that the habitat may be succeeding towards a dense bracken community
Vegetation composition: soft rush	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of soft rush ( <i>Juncus effusus</i> ) less than 10%	Attribute and target based on Perrin et al. (2014). High cover of soft rush would suggest undesirable hydrological conditions. Note, however, that poor flushes dominated by soft rush can naturally occur in mosaic with this habitat. Discrete areas of this separate habitat should not be considered here
Vegetation structure: <i>Sphagnum</i> condition	Condition at a representative number of 2m x 2m monitoring stops	Less than 10% of the <i>Sphagnum</i> cover is crushed, broken and/or pulled up	Attribute and target based on Perrin et al. (2014). High levels of disturbed <i>Sphagnum</i> would indicate undesirable levels of grazers
Vegetation structure: signs of browsing	Percentage of shoots browsed at a representative number of 2m x 2m monitoring stops	Less than 33% collectively of the last complete growing season's shoots of ericoids, crowberry ( <i>Empetrum nigrum</i> ) and bog-myrtle ( <i>Myrica gale</i> ) showing signs of browsing	Attribute and target based on Perrin et al. (2014)
Vegetation structure: burning	Occurrence in local vicinity of a representative number of monitoring stops	No signs of burning in sensitive areas, into the moss, liverwort or lichen layer or exposure of peat surface due to burning	Attribute and target based on Perrin et al. (2014), where the list of sensitive areas for this habitat is also presented
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground less than 10%	Attribute and target based on Perrin et al. (2014). Disturbance can include hoof marks, wallows, human foot prints and vehicle and machinery tracks. Excessive disturbance can result in loss of characteristic species and presage erosion for heaths and peatlands
Physical structure: drainage	Percentage area in local vicinity of a representative number of monitoring stops	Area showing signs of drainage from heavy trampling, tracking or ditches less than 10%	Attribute and target based on Perrin et al. (2014). Drainage can result in loss of characteristic species and transition to drier habitats
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat and no decline in status of hepatic mats associated with this habitat	This includes species listed in the Flora (Protection) Order, 2015 (FPO) and/or the red data lists (Lockhart et al., 2012; Wyse Jackson et al., 2016)

## Conservation Objectives for : Silvermines Mountains West SAC [002258]

### 4030 European dry heaths

**To maintain the favourable conservation condition of European dry heaths in Silvermines Mountains West 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	European dry heaths has not been mapped in detail for Silvermines Mountains West SAC and thus the total area of the qualifying habitat in the SAC is unknown. Although small in area and well-scattered, dry heath is considered to be well-represented in the SAC. The habitat occurs in association with Northern Atlantic wet heaths with <i>Erica tetralix</i> (4010), blanket bog and upland grassland and is found on the more steeply sloping ground below the summit ridge and on outcropping rock exposures in the SAC (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See the notes for Habitat area above
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil nutrient status within natural range	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat (NPWS, 2013)
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	The entire diversity of dry heath vegetation communities within this SAC is unknown. Information on vegetation communities associated with this habitat is presented in Perrin et al. (2014)
Vegetation composition: lichens and bryophytes	Number of species at a representative number of 2m x 2m monitoring stops	Number of bryophyte or non-crustose lichen species present at each monitoring stop is at least three, excluding <i>Campylopus</i> and <i>Polytrichum</i> mosse	Attribute and target based on Perrin et al. (2014). Dry heath is not necessarily rich in lichen and bryophyte species, but a minimum amount should still be present
Vegetation composition: number of positive indicator species	Number of species at a representative number of 2m x 2m monitoring stops	Number of positive indicator species present at each monitoring stop is at least two	Attribute and target based on Perrin et al. (2014), where the list of positive indicator species for this habitat, which is composed of dwarf shrubs, is also presented. Positive indicator species recorded in the habitat in the SAC include western gorse ( <i>Ulex gallii</i> ), bell heather ( <i>Erica cinerea</i> ), ling ( <i>Calluna vulgaris</i> ) and bilberry ( <i>Vaccinium myrtillus</i> ) (NPWS internal files)
Vegetation composition: cover of positive indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of positive indicator species at least 50% for siliceous dry heath and 50-75% for calcareous dry heath	Attribute and target based on Perrin et al. (2014), where the list of positive indicator species for this habitat, which is composed of dwarf shrubs, is also presented
Vegetation composition: dwarf shrub composition	Percentage cover at a representative number of 2m x 2m monitoring stops	Proportion of dwarf shrub cover composed collectively of bog-myrtle ( <i>Myrica gale</i> ), creeping willow ( <i>Salix repens</i> ) and western gorse ( <i>Ulex gallii</i> ) is less than 50%	Attribute and target based on Perrin et al. (2014). Bog-myrtle is indicative of flushed conditions and is more characteristic of wet heaths and blanket bogs. Creeping willow is more characteristic of dune heaths. Western gorse is a component of dry heath, but high proportions of it may indicate a history of undesirable levels of grazing
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of negative indicator species less than 1%	Attribute and target based on Perrin et al. (2014), where the list of negative indicator species for this habitat is also presented
Vegetation composition: non-native species	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014). Non-native species can be invasive and have deleterious effects on native vegetation. A low target is set as non-native species can spread rapidly and are most easily dealt with when still at lower abundances
Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 20%	Attribute and target based on Perrin et al. (2014). High cover of native trees and shrubs would indicate that the habitat may be succeeding towards scrub or woodland due to lack of grazing



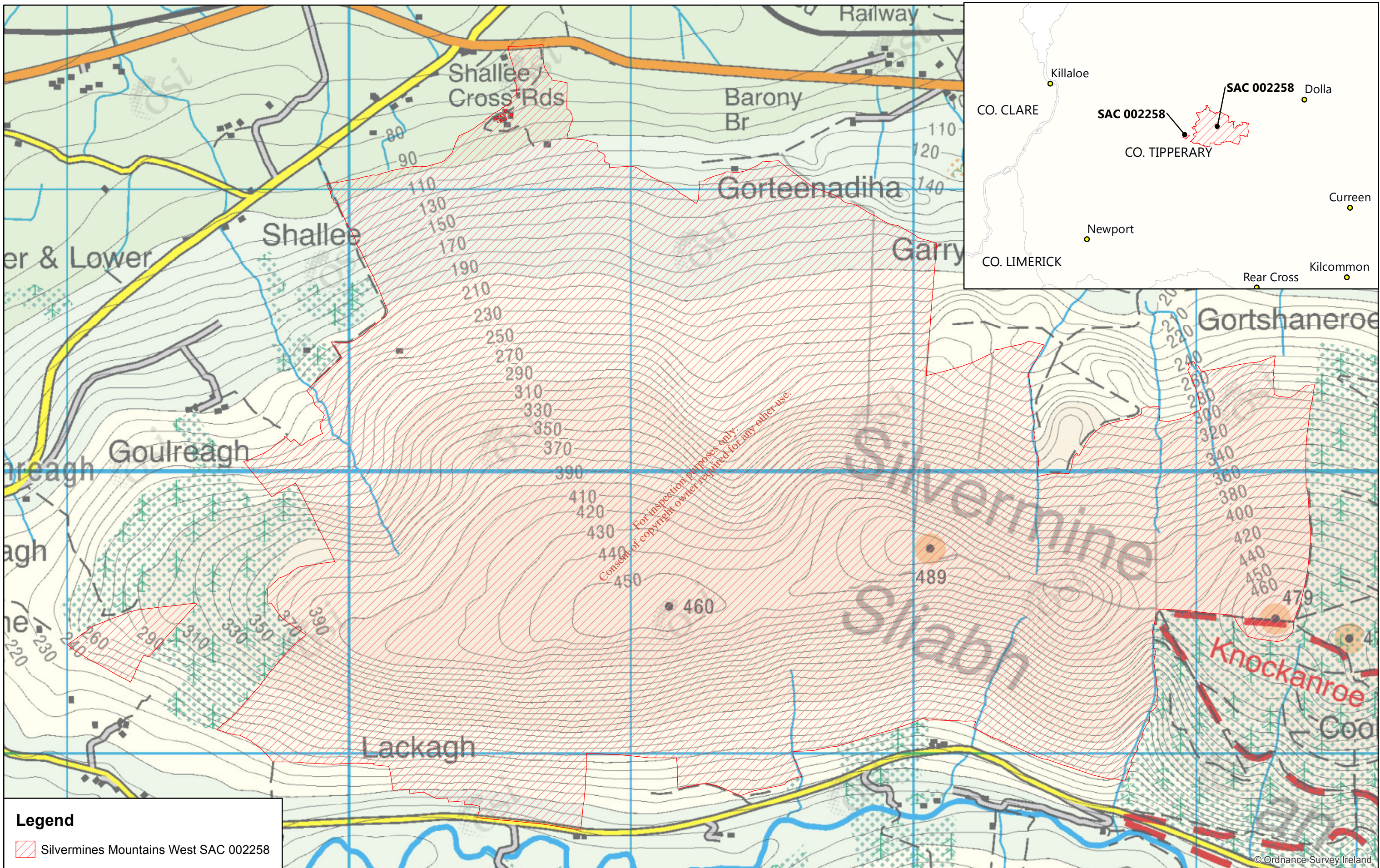
Vegetation composition: bracken	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of bracken ( <i>Pteridium aquilinum</i> ) less than 10%	Attribute and target based on Perrin et al. (2014). High cover of bracken would indicate that the habitat may be succeeding towards a dense bracken community
Vegetation composition: soft rush	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of soft rush ( <i>Juncus effusus</i> ) less than 10%	Attribute and target based on Perrin et al. (2014). High cover of soft rush would suggest undesirable hydrological conditions. Note, however, that poor flushes dominated by soft rush can naturally occur in mosaic with this habitat. Discrete areas of this separate habitat should not be considered here
Vegetation structure: senescent ling	Percentage cover at a representative number of 2m x 2m monitoring stops	Senescent proportion of ling ( <i>Calluna vulgaris</i> ) cover less than 50%	Attribute and target based on Perrin et al. (2014). Senescence is part of the natural cycle of ling, but a dominance of ling in the senescent phase would indicate a lack of management (appropriate grazing or burning) to promote ling regeneration
Vegetation structure: signs of browsing	Percentage of shoots browsed at a representative number of 2m x 2m monitoring stops	Less than 33% collectively of the last complete growing season's shoots of ericoids showing signs of browsing	Attribute and target based on Perrin et al. (2014)
Vegetation structure: burning	Occurrence in local vicinity of a representative number of monitoring stops	No signs of burning in sensitive areas	Attribute and target based on Perrin et al. (2014), where the list of sensitive areas is also presented. Fires can be part of the natural cycle of heaths and may, under carefully controlled circumstances, be used as an occasional management tool to promote regeneration of, or diversity of growth phases, in ling ( <i>Calluna vulgaris</i> ). However, currently most hill fires in Ireland are intentionally started to encourage grass growth for livestock. Fires which are too intense, too frequent, too extensive or which occur in sensitive areas are damaging to the habitat
Vegetation structure: growth phases of ling	Percentage cover in local vicinity of a representative number of monitoring stops	Outside sensitive areas, all growth phases of ling ( <i>Calluna vulgaris</i> ) should occur throughout, with at least 10% of cover in the mature phase	Attribute and target based on Perrin et al. (2014), where the list of sensitive areas is also presented. The growth phases of ling are pioneer (<10cm high), building (10-30cm high) and mature (<30cm high). As burning is undesirable in sensitive areas, it is not reasonable to require the stated diversity of growth phases within these areas
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground less than 10%	Attribute and target based on Perrin et al. (2014). Disturbance can include hoof marks, wallows, human foot prints and vehicle and machinery tracks. Excessive disturbance can result in loss of characteristic species and presage erosion for heaths and peatlands
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat	This includes species listed in the Flora (Protection) Order, 2015 and/or the red data lists (Lockhart et al., 2012; Wyse Jackson et al., 2016)

## Conservation Objectives for : Silvermines Mountains West SAC [002258]

### 6130 Calaminarian grasslands of the *Violetalia calaminariae*

**To maintain the favourable conservation condition of Calaminarian grasslands of the *Violetalia calaminariae* in Silvermines Mountains West SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Habitat area	Hectares	No decline, subject to natural processes	Calaminarian grasslands of the <i>Violetalia calaminariae</i> was surveyed in detail by Holyoak (2009) at Shallee within Silvermines Mountains West SAC where the area of the habitat is estimated to be 0.9ha
Distribution	Location	No decline, subject to natural processes. See map 3 for the surveyed point location at Shallee	Shallee is a former lead mine in the north of the SAC with extensive old lead mine workings and ore-processing works situated low on a north-facing slope near the west end of Silvermines Mountains. Calaminarian grassland is extensive and well-developed on the mine spoil at Shallee (Holyoak, 2009)
Physical structure: bare ground	Percentage cover	Maintain adequate open ground	At Shallee, the extent of bare soil and rock within four (50cm x 50cm) quadrats (recorded in 2008) ranged between c.3% and 50% (Holyoak, 2009)
Soil toxicity: heavy metal content	µg/g dry weight soil	Maintain high levels of the heavy metals copper and lead in soil	The total copper content in a sample of mine spoil taken from Shallee in 2009 was 4,998.5µg/g dry weight and the total lead content was 24,473µg/g dry weight (Campbell, 2013). Mine spoil with similar vegetation from Cornwall had available copper of 151–3,230µg/g dry weight (Holyoak et al., 2000; Walsh 2001)
Vegetation structure: height and cover	Centimetres; percentage cover	Maintain low and open vegetation	At Shallee, herbaceous vegetation height was recorded within four (50cm x 50cm) quadrats (in 2008) as quite short (0-8cm) and vascular plant cover was low (0-10%). Bryophyte cover was relatively high (11-75%) (Holyoak, 2009)
Vegetation composition: metallophyte bryophytes	Number	Maintain diversity and populations of metallophyte bryophytes	The liverwort <i>Cephaloziella nicholsonii</i> , which is listed on the Flora (Protection) Order, 2015 (FPO) and classified as Vulnerable (Lockhart et al., 2012) occurs at Shallee, as does the Near Threatened <i>C. stellulifera</i> (Holyoak, 2009; Lockhart et al., 2012). The largest of the four Irish populations of the Endangered and FPO listed moss <i>Ditrichum plumbicola</i> (Lockhart et al., 2012) is also found at Shallee (Holyoak, 2009)



An Roinn  
Cultúir, Oidhreacht agus Gaeltachta  
Department of  
Culture, Heritage and the Gaeltacht

**MAP 1:**  
**SILVERMINES MOUNTAINS WEST SAC**  
**CONSERVATION OBJECTIVES**  
**SAC DESIGNATION**  
Map to be read in conjunction with the NPWS Conservation Objectives Document.

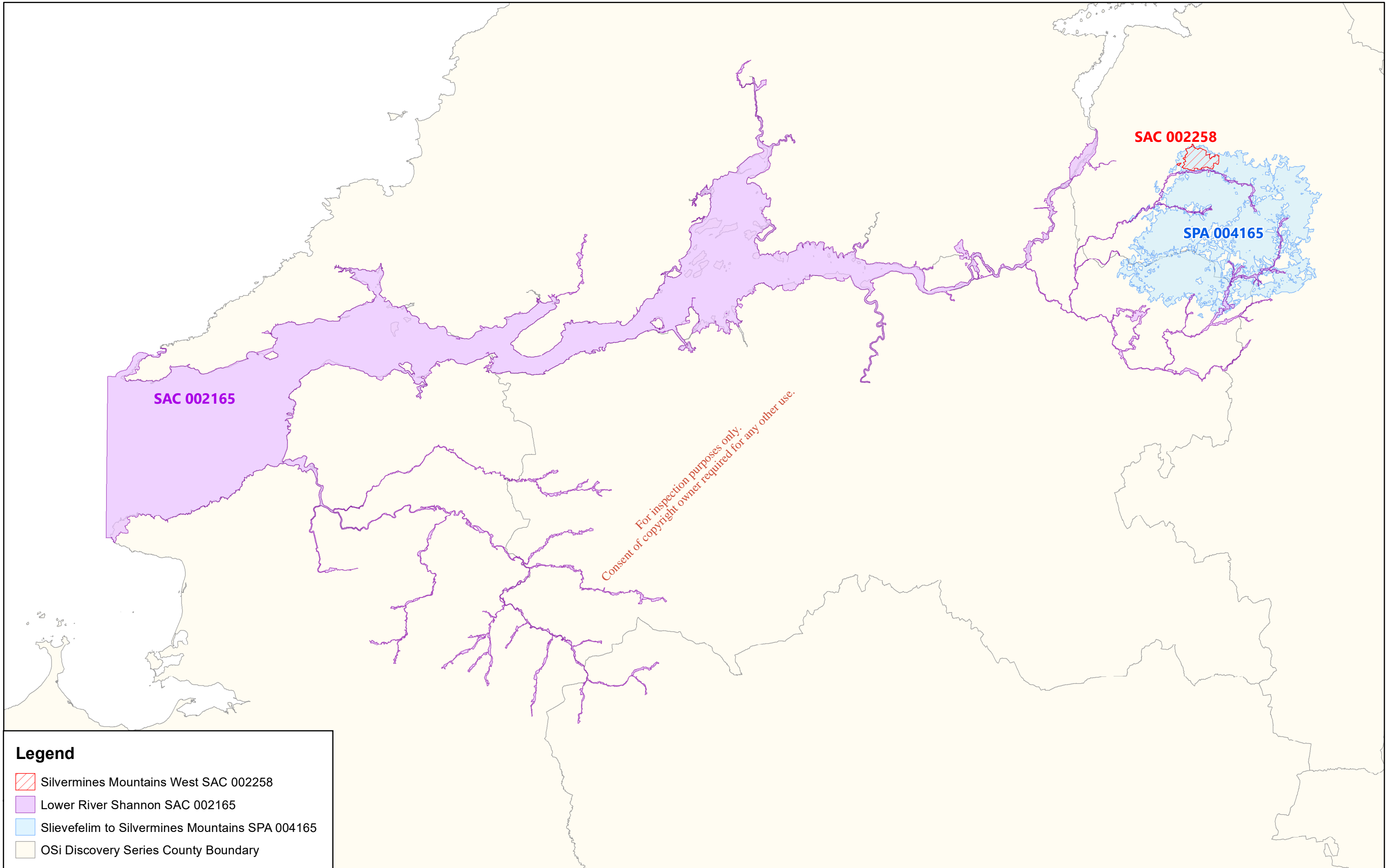
**SITE CODE:**  
**SAC 002258; version 3.01. CO. TIPPERARY**

0 140 280 420 560 700 Meters

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.  
Ordnance Survey of Ireland Licence No EN 0059216. © Ordnance Survey of Ireland Government of Ireland


Níl sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbheithnithe a déanamh ar theorainneacha na gceantar comharthaíthe. Suirbhéarachtá Ordonáis na hÉireann Ceadúnas Uimh EN 0059216. © Suirbhéarachtá Ordonáis na hÉireann Rialtas na hÉireann

**Map Version 1**  
**Date: Aug 2017**



**Legend**

- Silvermines Mountains West SAC 002258
- Lower River Shannon SAC 002165
- Slievefelim to Silvermines Mountains SPA 004165
- OSi Discovery Series County Boundary

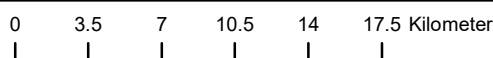


An Roinn  
Cultúir, Oidhreacht agus Gaeltachta  
Department of  
Culture, Heritage and the Gaeltacht

**MAP 2:  
SILVERMINES MOUNTAINS WEST SAC  
CONSERVATION OBJECTIVES  
OVERLAPPING DESIGNATION**

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

**SITE CODE:  
SAC 002258; version 3.01. SAC 002165; version 3.01;  
SPA 004165; version 3.  
CO. TIPPERARY / CO. LIMERICK**



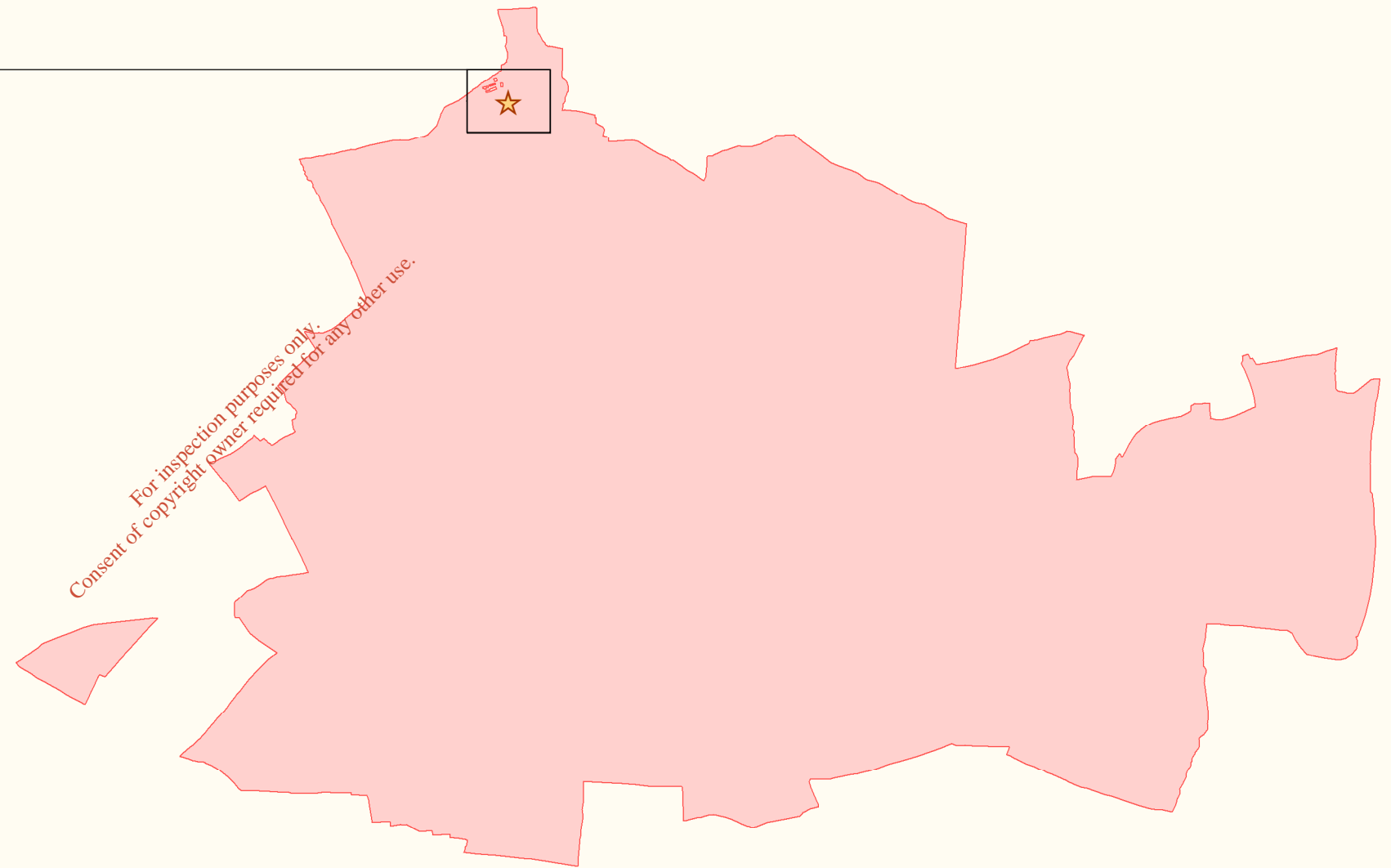
0 3.5 7 10.5 14 17.5 Kilometers

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.  
Ordnance Survey of Ireland Licence No EN 0059216. © Ordnance Survey of Ireland Government of Ireland

Níl sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbheithnithe a déanamh ar theorainneacha na gceantar comharthaíthe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059216. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann



**Map Version 1  
Date: July 2017**



**Legend**

- ★ 6130 Calaminarian grasslands of the *Violetalia calaminariae*
- Silvermines Mountains West SAC 002258
- OSi Discovery Series County Boundaries

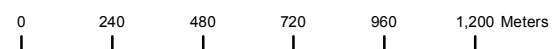


An Roinn  
Cultúir, Oidhreachta agus Gaeltachta  
Department of  
Culture, Heritage and the Gaeltacht

**MAP 3:  
SILVERMINES MOUNTAINS WEST SAC  
CONSERVATION OBJECTIVES  
CALAMINARIAN GRASSLAND**

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

**SITE CODE:  
SAC 002258; version 3.01. CO. TIPPERARY**



The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.  
Ordnance Survey of Ireland Licence No EN 0059216. © Ordnance Survey of Ireland Government of Ireland

Níl sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbheithníthe a déanamh ar theorainneacha na gceantar comharthaíthe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059216. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann



**Map Version 1  
Date: Aug 2017**



## Conservation objectives for Slievefelim to Silvermines Mountains SPA [004165]

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.

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.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

Bird Code	Common Name	Scientific Name
A082	Hen Harrier	<i>Circus cyaneus</i>



**Citation:** NPWS (2018) Conservation objectives for Slievefelim to Silvermines Mountains SPA [004165]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

For inspection purposes only.  
Consent of copyright owner required for any other use.

For inspection purposes only.  
Consent of copyright owner required for any other use.