

**CYNGOR CEFN GWLAD CYMRU  
COUNTRYSIDE COUNCIL FOR WALES**

**CYNLLUN RHEOLI CRAIDD  
YN CYNNWYS AMCANION CADWRAETH**

**AR GYFER**

**PEN Y GOGARTH  
ARDAL CADWRAETH ARBENNIG (ACA)**

**Fersiwn: Olaf**

**Dyddiad: 6 Mawrth 2008** (Mân newid i'r map, Chwefror 2013)

**Wedi'i gymeradwyo gan: Mike Willis**

**Dyma grynodedb o ddogfen dechnegol. Mae croeso i chi ofyn am fersiwn Gymraeg.**



## CYNNWYS

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## RHAGAIR

Mae'r ddogfen hon yn cynnwys prif elfennau cynllun rheoli Cyngor Cefn Gwlad Cymru ar gyfer y safleoedd a enwir. Mae'n nodi'r hyn sydd angen ei gyflawni ar y safleoedd, canlyniadau monitro, a chynghor ynglŷn â'r gweithredu angenrheidiol. Mae'r ddogfen hon ar gael drwy wefan y Cyngor Cefn Gwlad a gall y bydd yn cael ei hadolygu os yw amgylchiadau'n newid neu os daw gwybodaeth newydd i'r amlwg. Dogfen dechnegol yw hi, sy'n cyd-fynd â gwybodaeth gryno ar y wefan.

Un o swyddogaethau allweddol y ddogfen hon yw darparu datganiad y Cyngor o'r Amcanion Cadwraeth ar gyfer y safleoedd Natura 2000 perthnasol. Mae hyn yn ofynnol er mwyn gweithredu'r Rheoliadau Cadwraeth (Cynefinoedd Naturiol, &c.) 1994 fel y'u diwygiwyd (Adran 4). Yn unol â Pholisi Llywodraeth Cynulliad Cymru, mae darpariaethau'r rheoliadau hyn i'w gweithredu hefyd mewn perthynas â Safleoedd Ramsar yng Nghymru.

## 1. **Y WELEDIGAETH AR GYFER Y SAFLE**

Mae hwn yn drosolwg disgrifiadol o'r hyn y mae angen ei gyflawni er mwyn cadwraeth ar y safle. Mae'n dod â'r Amcanion Cadwraeth (rhan 4) ynghyd ac yn eu crynhoi mewn un datganiad integredig am y safle.

Penrhyn carreg galch a feddiannir yn bennaf gan fosäig o laswelltiroedd a rhostiroedd gyda chlogwyni môr â llystyfiant ar hyd yr ymylon i'r gogledd a'r dwyrain. Ar y llethrau cynnes sych sy'n wynebu'r de, bydd y rhan fwyaf o'r ardaloedd cynefin yn cael eu meddiannu gan rywogaethau planhigion sy'n nodweddu glaswelltir calchaid wedi'i wella. Mewn mannau ar y safle gorchuddir ardaloedd y llwyfandir gan y corlwyni sy'n nodweddu rhostiroedd.

Rhaid wrth bori gan gyfuniad o dda byw a geifr gwyllt ynghyd â llysyorion eraill, er mwyn cynnal y rhostiroedd a'r glaswelltir. Nid yw'r rhostiroedd wedi'u rheoli'n weithredol yn ystod y degawdau diwethaf ond erbyn hyn maent yn dechrau aeddfedu o ran oed a strwythur, lle y gall ymyriadau megis llosgi a lladd fod yn ddewisiadau er mwyn eu hadnewyddu. Dylai'r clogwyni môr â llystyfiant barhau i gael eu gwarchod rhag gweithgareddau sy'n eu difrodi, ond nid oes angen rheolaeth weithredol. Mae angen ardaloedd tir agored neu llystyfiant byr ar lethrau poeth, sych a heulog ar gyfer llawer o'r rhywogaethau planhigion a di-asgwrn-cefn arbennig. a dylid hefyd gyfeirio ymdrechion cadwraeth tuag gynnal a chynyddu'r rhain

## 2. **SITE DESCRIPTION**

### 2.1 **Area and Designations Covered by this Plan**

Grid reference(s): SH 767833

Unitary authority: Conwy County Borough Council

Area (hectares): 302.63 ha

Designations covered: Great Orme's Head / Pen Y Gogarth SAC: Pen Y Gogarth / Great Orme's Head SSSI

Detailed maps of the designated sites are available through CCW's web site:  
<http://www.ccw.gov.uk/interactive-maps/protected-areas-map.aspx>

A summary map showing the coverage of this document is shown below

## 2.2 Outline Description

The description provided below is based on the Pen Y Gogarth / Great Orme's Head SSSI citation (19 September 2002) and adapted to highlight those sections of the citation that particularly refer to the SAC features of interest.

Pen Y Gogarth / Great Orme's Head is of special interest for its geological, botanical, entomological, ornithological and marine biological features. This limestone headland, which rises in a multitude of tiers to a summit plateau at 207 metres, includes sea cliffs and boulder-strewn shores, and extends for nearly eight kilometres along the North Wales coastline, separating Conwy Bay and Llandudno Bay. There are on the north and east sides sheer cliffs plunging vertiginously into the sea whereas those on the south facing sides have less severe slopes with a series of low tiers of limestone cliffs falling to soft boulder clay slopes and cliffs on the southwest side. Where soils are not derived from the limestone bedrock there is evidence that the deeper soils are derived from wind-blown sand (loess) of periglacial age.

The site supports the following features of special interest. The site is significant for its Carboniferous Limestone, which contains nationally important faunal assemblages in coastal cliffs, inland outcrops, disused quarries and road sections. Additionally the Great Orme Copper Mines provide the best UK example of an internationally important class of ore referred to as the Copper-Dolomite association. The limestone and associated sedimentary deposits supports sizable areas of calcicolous (lime-loving) grassland, limestone and acidic heath, maritime cliff vegetation and a mixture of other plant communities and habitats. The endemic wild cotoneaster *Cotoneaster cambricus*, spiked speedwell *Veronica spicata* ssp. *hybrida*, goldilocks aster *Aster linosyris* and spotted cat's-ear *Hypochaeris maculata* and a variety of nationally scarce species are present, along with an isolated population of horseshoe vetch *Hippocrepis comosa*, here at its only site in North Wales. Amongst several rare hawkweeds is the nationally endemic Welsh hawkweed *Hieracium cambricum*. A rich assemblage of bryophytes and lichens includes the nationally vulnerable species *Collema fragile* and *Synalissa symphorea*. The Great Orme supports populations of the silky wave moth *Idaea dilutaria*, and the endemic dwarf races of butterfly, silver-studded blue *Plebejus argus caermenesis* and grayling *Hipparchia semele thyone*. It also supports a large assemblage of grassland invertebrates that includes the weevil *Helianthemapion aciculare* and the rare pollen beetle *Meligethes brevis*. In terms of the marine biological features it has the largest extent of moderately exposed rock, supporting a complete zonation of marine biotopes as well as specialised and nationally scarce animals and algae most typically associated with rock pool, cave and limestone rock habitats found between the Great Orme and the Solway Firth. The sea cliffs regularly support a large colony of breeding sea birds of kittiwake, guillemot and razorbill. Small numbers of lesser horseshoe bat hibernate in the disused caves and mine workings.

The combination of bedrock, soils, topography and bioclimatic conditions interacting with past and present human activities had given rise to a complex mosaic of plant communities, exemplified in the zonations between acid heath, various forms of limestone heath and limestone grassland, limestone pavement, scrub and woodland and vegetated sea cliffs.

The dry heath vegetation is co-dominated by heather, *Calluna vulgaris*, bell heather *Erica cinerea* and western gorse *Ulex gallii* mainly where lenses of loess overlie glacial deposits on the less steep slopes (Stevens, P. A. *et al.*, 1995). The dry heath occurs in an intimate mosaic with the grassland communities throughout the site. It also includes a vegetation type characterised as "calcicolous grass heath" where western gorse is conspicuous by its virtual absence but where ericoid dwarf shrubs and many species typical of "species-rich" calcicolous grasslands are abundant. The area of "calcicolous grass heath" is similar in extent to the heather, bell heather and western gorse heathlands. The dry heath vegetation takes three

forms; species poor, where the co-dominant shrubs form a tall closed canopy with few herbs or grasses present, a shorter, more open heath where grasses and a restricted range of herbs are present and very open species-rich heath where the shrubs share dominance with calcicolous species such as common rock-rose *Helianthemum nummularium*, dropwort *Filipendula vulgaris*, glaucous sedge, *Carex flacca*, wild thyme *Thymus polytrichus*, common bird's-foot-trefoil *Lotus corniculatus*, salad burnet *Sanguisorba minor*, lady's-bedstraw *Galium verum*, quaking grass *Briza media* and fairy flax *Linum catharticum* and fewer calcifugous species such as tormentil *Potentilla erecta*, heath-grass *Danthonia decumbens* and slender St John's-wort *Hypericum pulchrum*.

The semi-natural dry grasslands occupy a range of soils and topography. For example, on the rockiest and thinnest soils along the drought prone edges and tops of the tires of south facing limestone cliffs and crags is an open short turf containing sheep's fescue *Festuca ovina*, crested hair grass *Koeleria macrantha*, meadow oat-grass *Helictotrichon pratensis* and quaking grass with abundant calcicolous herbs that include wild thyme, salad burnet, common rock-rose, mouse-ear hawkweed *Hieracium pilosella*, hoary rock rose, *Helianthemum incanum* ssp. *oelandicum*, carline thistle *Carlina vulgaris* and kidney vetch *Anthyllis vulgaris*. Where the soils are deeper on less steep slopes away from cliff and crag tops there is a closed turf of sheep's fescue, crested hair grass, quaking grass, common bent *Agrostis capillaris*, glaucous sedge and spring sedge *Carex caryophyllea* with common rock-rose, salad burnet, wild thyme, common bird's-foot-trefoil, lady's-bedstraw, dropwort and harebell *Campanula rotundifolia*. Spring squill *Scilla verna* occurs where maritime influence on the grasslands is greatest. Where grazing pressure is relaxed red fescue *Festuca rubra* and coarser grasses such as downy-oat grass *Helictotrichon pubescens* dominate the turf.

Maritime influences upon the heath and grassland are not strong with only local occurrences of species such as sea plantain *Plantago maritima*, spring squill *Scilla verna* and thrift *Armeria maritima*. The latter occurs either in association with grassy ledges amongst the sea cliffs on the northern and western sides or where there are spoil banks arising from old mine sites. The precipitous cliffs to the west of the lighthouse and either side of the Marine Drive at Pen Trwyn support a maritime cliff-ledge community with wild cabbage *Brassica oleracea*, thrift and sea plantain clinging to narrow ledges and crevices in the sheer cliff faces accompanied by calcicolous species intolerant of livestock grazing such as bloody cranesbill *Geranium sanguineum*.

### **2.3 Outline of Past and Current Management** (Taken from LIFE MFMP (1999) and revised where necessary)

Evidence for human occupation on the Great Orme dates back over 10,000 years to the late Palaeolithic. One notable era was the Bronze Age (c. 1900-500 BC) during which extensive copper mining commenced, this being the largest example of mining activity at that time in Europe. Copper mining continued sporadically in succeeding millennia depending on the commodity price, eventually becoming uneconomic during the nineteenth century with mining activity ceasing. It is probable that much of the once wooded parts of the site were cleared during this period. There is evidence of the Roman occupation of the Llandudno area in the third century AD, with a number of Roman coins having been discovered on the site itself. The name 'Orme' is of Norse origin, and is a remembrance of past Viking activity in the area (c 793-1066 AD) associated with their well-known trading and settlement activities along the shores of the Irish Sea during this period.

The Great Orme has a long history of food production. Livestock have grazed since the mediaeval period (1066-1485 AD) and possibly much earlier. Still visible today is evidence of arable cultivation (ridge and furrow) on parts of the plateau and its fringing slopes and on the southwest facing coastal strip also associated farmsteads and trackways.

Land usage during the medieval period was intermittent and varied due to feuding between the Welsh and Normans, the Edwardian Conquests and the Black Death. The main land use during this period may well have been for rough grazings or pasture. The type of livestock will have changed over this period. Up until the eighteenth century the predominant livestock would have been cattle, probably with a significant number of goats. Later on the preference would have changed to sheep, with cessation of goat keeping and fewer cattle. Today livestock grazing is sheep although a few donkeys and sometimes ponies also graze on occasion. The change in livestock types would have coincided with the enclosure of land, commencing on the Great Orme in the latter part of the seventeenth century. By the mid eighteenth century most of the most easily exploitable agricultural land had been enclosed. This process did not encompass the whole of the site, areas with the poorer and rockiest soils remaining as rough grazings “in common”.

Land usage would once also have been more labour intensive, with shepherding and possibly rotational management of heath and gorse either to improve grazing or provide a source of fuel and in the case of bracken bedding for livestock. There is no detailed information for the recent history of grazing, anecdotal information from a retired farmer is that sheep numbers peaked in the decades after World War II at about 1,000 head with some *ad hoc* burning of the heath principally to assist with gathering the sheep rather than to improve its condition.

A herd of feral goats have been present on the Great Orme since the beginning of the twentieth century. The exact date of the introduction of the herd is not clear. Queen Victoria gifted to Lord Mostyn some goats from the Royal Windsor herd in the late nineteenth century (c.1889). It is likely that the herd originated from 11 goats introduced into Great Britain from different parts of the east – a blend of two or three cashmere breeds. Major-General Sir Savage Mostyn introduced a number of these to the Great Orme in 1917. Numbers were kept to double figures (20 –60) by an annual shoot for much of the twentieth century but once this ceased about 1980, numbers in the final decades reached a peak well in excess of over 200.

In the past bracken may well have been managed by harvesting for a number of uses including livestock bedding but this has not been practiced for decades. Nonetheless, with cessation of active management there is no evidence that bracken is spreading rapidly at the expense of the other more valued habitats although a watch needs to be kept should bracken begin to increase.

Only since the early 1970’s has it become recognised that invasion by non-native species of *Cotoneaster* is an increasing problem particularly to the survival of grasslands on the south facing slopes overlooking Llandudno. Nonetheless, non-native *Cotoneasters* can now be found scattered across the whole of the headland. If not checked and removed these have the potential to seriously degrade both the quantity and quality of the grasslands. These *Cotoneasters* have originated from seeds from shrubs planted in the gardens of Llandudno. Most of these non-native species were introduced to Britain from Asia in the mid to late nineteenth century. The current estimate is that the site coverage of these *Cotoneasters* may be as much as seven hectares (but not all in one area).

The Great Orme was first notified as a SSSI in 1957. Up until about 1980 the Mostyn Estate who own the majority of the land managed the greater proportion of the site. 1980 saw declaration as a Country Park (and in 1981 part as a Local Nature Reserve (LNR)) by Aberconwy Borough Council (since 1996 Conwy County Borough Council). The SAC was designated in 1995. Revisions to the SSSI were made in 2002 to include terrestrial SAC habitat (currently excluded from the SAC as drawn) and in anticipation of extensions of the nearby marine SAC Menai Strait and Conwy Bay.

The greater “unenclosed” part of the site is grazed by sheep via a “Deed of Compromise” (Agreement) set up in 1984 between the Mostyn Estate and the then remaining two graziers.

This has since been sold (2002) on to a single owner who lets to a local farmer this grazing (and that of the enclosed and surrounded Parc Farm – not SSSI/SAC). Under the terms of this agreement sheep numbers are capped at a total of 416 at all times of the year. Since 2002 sheep grazing numbers appear to have been lower than in the preceding years (2001 excepted – see below) when grazing occurred throughout the year except for short periods when the sheep were removed to the nearby enclosed farmland (Pink Farm - Penymynydd Isaf). These periods totalled about six weeks and a brief period in August when only about 100 sheep were present. The present pattern and numbers is not known. This grazier is currently applying to join the Tir Gofal (TG) Agri-Environment Scheme. A sheep (ewe) is 0.12-0.15 Livestock Unit and calculations based on the habitat areas may suggest that some relaxation of the capped numbers at certain seasons of the year, e.g. late summer early autumn might be beneficial to the condition of the grasslands whereas some reduction of the capped numbers in the winter could produce less stress on the heathlands. Sheep tend to concentrate their grazing effort on the grasslands although they will graze the heathland and their presence on this in the winter months may be detrimental. There are also small areas of “enclosed” land grazed by sheep or donkeys outside the terms of the agreement.

Livestock grazing was absent during the foot & mouth outbreak in 2001.

Since 2002 some female goats have received progesterone implants and this has reduced recruitment to the population. Unfortunately, the implants are no longer available and alternative means of reducing recruitment will need to be sought. In addition a number of goats have been removed to other locations away from the site. Currently the numbers stand at about 130–160 individuals present on site throughout the year. A goat is 0.13 Livestock Unit.

Goats concentrate their browsing on woody shrubs including young gorse (but also ivy) and do not appear to directly compete with the sheep for food. Their presence on the heathlands in the winter months is probably undesirable but weighed against this are possible benefits in that they may slightly impede the spread of woody shrubs and trees into areas only infrequently grazed by sheep. They avoid eating established non-native cotoneaster species but have been observed browsing on the berries.

Rabbits may make a significant contribution to the overall grazing pressure. This is difficult to quantify as the population waxes and wanes with the occurrence of outbreaks of myxomatosis and other viral diseases. When in large numbers they may suppress the regeneration of the dwarf shrubs of the heath following uncontrolled burning events. They have a valuable role to play in creating some of the bare ground needed by some of the rare plants and invertebrates.

In the past the heathlands on the Great Orme may have been burnt or cut on rotation but there is little (buried) evidence of this and in any case such practices have long fallen into disuse. In terms of management for nature conservation it would be desirable to introduce some form of rotational management of the heathlands to diversify the age and structure of the shrubs as a significant proportion may be approaching over-maturity. Where the heath is mature, tall and species-poor there are risks to introducing burning as this may favour western gorse at the expense of ericoid shrubs or lead to conversion to species-poor grassland should livestock congregate.

Each year as part of a Management Agreement between Conwy County Borough Council, the Mostyn Estate and CCW, patches of the invasive non-native cotoneaster species in the grasslands are carefully targeted with herbicide and the dead material cut and removed. This is a costly and time-consuming operation. Current funding allows approximately 0.25 hectare (where heavily infested) to be treated each year and about two hectares have been successfully treated to date. As a follow-up, a vigilant look-out is kept for regeneration, when seedlings are found they are uprooted and disposed of and re-growth is treated to reduce future expense.

Revision and renewal of this agreement now incorporates, heath, gorse and bracken *Pteridium aquilinum* management although the methods to be used and the areas to be worked are yet to be finalised.

Other Management Agreements with the North Wales Wildlife Trust (Gogarth Nature Reserve) and some private landowners have also resulted in the undertaking of gorse clearance and/or invasive non-native species control.

## **2.4 Management Units**

The plan area has been divided into management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been based on tenure and enclosure pattern. In some cases where, there are small sections of the site in separate ownerships, these have either been subsumed into the adjacent larger unit or amalgamated to make one unit.

The “Great Orme Country Park & Local Nature Reserve Management Plan 2006-2011” written by the Country Park Warden and approved by the Great Orme Management Advisory Group 14<sup>th</sup> December 2006 (including CCW representative) covers the great majority of Unit 1. Section 4 Features and Objectives for management includes:

- 4.1 Feature 1: Plant Communities
  - 4.1.1 Calcareous Grassland
  - 4.1.2 Limestone Heath
  - 4.1.4 Limestone Cliffs (Vegetated Seacliffs)

Refer to the management unit map.



The following table confirms the relationships between the management units and the designations covered:

<b>Unit number</b>	<b>ISIS Unique Unit number</b>	<b>SSSI</b>	<b>SAC</b>	<b>Unit Name</b>	<b>Type of land</b>	<b>CCW Owned</b>
<b>1</b>	000718	✓ <sub>part</sub>	✓	<b>Great Orme Country Park</b>	Unenclosed open	No
<b>2</b>	000719	✓	✓ <sub>part</sub>	<b>Great Orme (Country Park) Woodland</b>	Enclosed & unenclosed wood	No
<b>3</b>	000720	✓	✓ <sub>part</sub>	<b>Y Ffridd</b>	Unenclosed open	Part
<b>4</b>	000721	✓	✓ <sub>part</sub>	<b>The Old Rectory</b>	Unenclosed open	No
<b>5</b>	000722	✓	✓ <sub>part</sub>	<b>Maes Y Facrell</b>	Enclosed open	Yes
<b>6</b>	000723	✓	✓ <sub>part</sub>	<b>Great Orme Mines</b>	Enclosed & unenclosed open	No
<b>7</b>	000724	✓	✓	<b>NWWT Nature Reserve</b>	Unenclosed open	No
<b>8</b>	000725	✓	✓	<b>Bodafon (Farm) Pen y ffridd</b>	Enclosed open	No
<b>9</b>	000726	✓	✓ <sub>part</sub>	<b>Ardwy Orme &amp; Glain Orme</b>	Enclosed open & wood	No
<b>10</b>	000727	✓	✓ <sub>part</sub>	<b>Camera Obscura Hill (- The Colonnade)</b>	Unenclosed open	No
<b>11</b>	000728	✓	✓	<b>Donkey Field Wyddfyd Road</b>	Enclosed open	No
<b>12</b>	000731	✓		<b>The (Bay View Llican Belle View) Terraces</b>	Unenclosed open	No
<b>13</b>	000732	✓		<b>Great Orme Intertidal</b>	Unenclosed open	No
<b>14</b>	000733	✓		<b>Happy Valley Road (&amp; The Colonnade) Cliffs</b>	Unenclosed open	No

Notes: This SAC was not divided into Management Units in the SAC Minimum Format Management Plan prepared by CCW as part of the LIFE – Nature Programme of Integrating Monitoring with Management Planning: A Demonstration of Good Practice on Nature 2000 Sites in Wales (1999). As a consequence of SSSI revisions (2002) there is potential for the SAC to encompass areas of SAC habitats currently excluded. There are also some small areas within the SAC boundary that require removal because either they were included in error (e.g. Summit Complex and car park) or have never supported SAC habitat.

### 3. THE SPECIAL FEATURES

#### 3.1 Confirmation of Special Features

<i>Designated feature</i>	<i>Relationships, nomenclature etc</i>	<i>Conservation Objective in part 4</i>
<b>SAC features</b>		
<i>Annex I habitats that are a primary reason for site selection</i>	<i>Subdivisions of Feature for Management Planning purposes:</i>	
<b>1. European Dry Heath</b>	N/A	<b>4.1</b>
<b>2. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco - Brometalia</i>)</b>	N/A	<b>4.2</b>
<b>3. Vegetated sea cliffs of the Atlantic and Baltic coasts</b>	N/A	<b>4.3</b>
<b>SSSI features</b>		
<i>Primary Features</i>	<i>Primary Feature components</i>	NB: Conservation objectives for SSSI features to be written at a later date.
4. Dry dwarf shrub heath		
5. Calcareous grassland		
6. Maritime cliff and slope		
7. Intertidal rocky habitats		Within SSSI, outside SAC
8. Wild cotoneaster		
9. Spiked speedwell		
10. Assemblage of rare vascular plants	Goldilocks aster, spotted cat's-ear, hairy-fruited cornsalad, wild cabbage, seaside centaury, dwarf mouse-ear, dark-red helleborine, hoary rock-rose, hutchinsia, rock sea-lavender, white horehound, spring cinquefoil, ivy broomrape, spring cinquefoil, Nottingham catchfly, <i>Sorbus rupicola</i> – a whitebeam, Welsh hawkweed, horseshoe vetch.	
11. Assemblage of rare bryophytes	<i>Bryum funckii</i> , <i>Funaria pulchella</i> , <i>Bryum dunese</i> , <i>Bryum torquescens</i> , <i>Didymon acutus</i> , <i>Funaria muhlenbergii</i> , <i>Grimmia orbicularis</i> , <i>Gymnostomum viridulum</i> , <i>Microbryum starkeanum</i> , <i>Pottia bryoides</i> , <i>Riccia subbifurca</i> , <i>Tortella densa</i> , <i>Wessia controversa</i> var. <i>crispate</i>	
12. <i>Collema fragile</i>		

13. <i>Synalissa symphorea</i>		
14. Assemblage of rare lichens	<i>Collema fragile, Synalissa symphorea, Opegrapha parasitica, Rinodina immersa, Verrucaria aspiciliicola, Caloplaca ochracea, Collema multipartitum, Lempholemma chalazanum</i>	
15. Silky Wave Moth		
16. Grayling		
17. Silver-studded Blue		
18. <i>Helianthemapion aciculare</i>		
19. <i>Meligethes brevis</i>		
20. Grassland invertebrate assemblage	<i>Anania funebris, Adscita geryon, Agrotis conerea, Coleophora inulae, Coleophora serpylletorum, Cucullia absinthii, Eupithecia distinctaria constricta, Eupithecia pimpinellata, Mecyna asinalis, Metzneria aestivella, Scotopteryx bipunctaria cretata, Thera cognata, Xestia ashworthii, Wheeleria spilodactyla, Amphimallon ochraceus, Limobius borealis, Amara curta, Brachysomus echinatus, Ceutorhynchus resedae, Cryptocephalus aureolus, Cryptocephalus bipunctatus, Harpalus ozureus, Longitarsus ballotae, Meligethes exilis, Meligethes solidus, Orthochaetes setiger, Otiorhynchus desertus, Trachyphloeus alternans, Trachyphloeus asperatus, Episinus truncatus, Micrargus laudatus, Chrysis schenkei, Leptothorax albipennis, Orimarga virgo, Oxycera morrisii, Limonia aquosa, Oxycera paradalina, Oxycera pygmaea</i>	
21. Breeding Seabird Colony	Kittiwake, Guillemot, Razorbill	
22. Dinantian of England and Wales	Great Orme SIL	Earth Science
23. Mineralogy of Wales	Great Orme Copper mines SIL	Earth Science

### 3.2 Special Features and Management Units

This section sets out the relationship between the special features and each management unit. This is intended to provide a clear statement about what each unit should be managed for, taking into account the varied needs of the different special features. All special features are allocated to one of seven classes in each management unit. These classes are:

### **Key Features**

**KH** - a 'Key Habitat' in the management unit, i.e. the habitat that is the main focus of management and monitoring effort, perhaps because of the dependence of a key species (see KS below). There will rarely be more than one Key Habitat in a unit.

**KS** – a 'Key Species' in the management unit, often driving both the selection and management of a Key Habitat.

**Geo** – an earth science feature that is the main focus of management and monitoring effort in a unit.

### **Other Features**

**Sym** - habitats, species and earth science features that are of importance in a unit but are not the main focus of management or monitoring. These features will benefit from management for the key feature(s) identified in the unit. These may be classed as 'Sym' features because:

- a) they are present in the unit but are of less conservation importance than the key feature; and/or
- b) they are present in the unit but in small areas/numbers, with the bulk of the feature in other units of the site; and/or
- c) their requirements are broader than and compatible with the management needs of the key feature(s), e.g. a mobile species that uses large parts of the site and surrounding areas.

**Nm** - an infrequently used category where features are at risk of decline within a unit as a result of meeting the management needs of the key feature(s), i.e. under Negative Management. These cases will usually be compensated for by management elsewhere in the plan, and can be used where minor occurrences of a feature would otherwise lead to apparent conflict with another key feature in a unit.

**Mn** - Management units with no special feature present but which are of importance for management of features elsewhere on a site e.g. livestock over-wintering area included within designation boundaries, buffer zones around water bodies, etc.

**x** – Features not present in the management unit.

The table below sets out the relationship between the special features and management units identified in this plan:

Great Orme's Head / Pen Y Gogarath SAC	Management Unit													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>SAC</b>	+	+	+	+	+	+	+	+	+	+	+	-	-	-
<b>SSSI</b>	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<b>SAC features</b>														
1. European Dry Heath	KH	x	x	x	Sym	x	KH	x	x	x	x	x	x	x
2. Semi-natural dry grasslands and scrubland facies: on calcareous substrates ( <i>Festuco-Brometalia</i> )	KH	KH	KH	Sym	KH	KH	Sym	KH	KH	KH	KH	KH	x	x
3. Vegetated sea cliffs of the Atlantic and Baltic coasts	KH	x	x	KH	x	x	x	x	x	KH	x	x	x	KH
<b>SSSI features</b>														
4. Dry dwarf shrub heath	KH	x	x	x	Sym	x	KH	x	x	x	x	x	x	x
5. Calcareous grassland	KH	KH	KH	Sym	KH	KH	Sym	KH	KH	KH	KH	KH	x	x
6. Maritime cliff and slope	KH	x	x	KH	x	x	x	x	x	KH	x	x	x	KH
7. Intertidal rocky habitats	x	x	x	x	x	x	x	x	x	x	x	x	KH	x
8. Wild cotoneaster	Sym	x	KS	x	KS	x	x	x	x	x	x	x	x	x
9. Spiked speedwell	Sym	x	Sym	x	Sym	x	x	x	x	x	x	x	x	x
10. Assemblage of rare vascular plants	Sym	x	Sym	x	Sym	x	x	x	Sym	x	x	x	x	x
11. Assemblage of rare bryophytes	Sym	x	Sym	x	Sym	x	x	x	x	x	x	x	x	x
12. <i>Collema fragile</i>	Sym	x	x	x	x	x	x	x	x	x	x	x	x	x
13. <i>Synalissa symphorea</i>	Sym	x	x	x	x	x	x	x	x	x	x	x	x	x
14. Assemblage of rare lichens	Sym	x	Sym	Sym	Sym	x	x	x	x	x	x	x	x	x
15. Silky wave moth	KS	x	x	x	x	x	KS	x	x	x	x	x	x	x
16. Grayling	Sym	x	x	x	x	x	Sym	x	x	x	x	x	x	x
17. Silver-studded blue	KS	x	Sym	x	Sym	x	KS	Sym	KS	Sym	x	x	x	x
18. <i>Helianthemapion aciculare</i>	Sym	x	x	x	x	x	x	x	x	x	x	x	x	x

19. <i>Meligethes brevis</i>	Sym	x	x	x	x	x	x	x	x	x	x	x	x	x
20. Grassland invertebrate assemblage	Sym	x	x	x	x	x	Sym	x	x	x	x	x	x	x
21. Breeding seabird colony	KS	x	x	Sym	x	x	x	x	x	x	x	x	x	x
22. Dinantian of England and Wales	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym
23. Mineralogy of Wales	x	x	x	x	x	Geo	x	x	x	x	x	x	x	x

#### 4. CONSERVATION OBJECTIVES

##### Background to Conservation Objectives:

##### a. Outline of the legal context and purpose of conservation objectives.

Conservation objectives are required by the 1992 ‘Habitats’ Directive (92/43/EEC). The aim of the Habitats Directives is the maintenance, or where appropriate the restoration of the ‘favourable conservation status’ of habitats and species features for which SACs and SPAs are designated (see Box 1).

In the broadest terms, ‘favourable conservation status’ means a feature is in satisfactory condition and all the things needed to keep it that way are in place for the foreseeable future. CCW considers that the concept of favourable conservation status provides a practical and legally robust basis for conservation objectives for Natura 2000 and Ramsar sites.

##### **Box 1**

##### ***Favourable conservation status as defined in Articles 1(e) and 1(i) of the Habitats Directive***

“The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 conservation status of a species is the sum of the influences acting on the species that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as ‘favourable’ when:

- population dynamics data on the species 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.”

Achieving these objectives requires appropriate management and the control of factors that may cause deterioration of habitats or significant disturbance to species.

As well as the overall function of communication, Conservation objectives have a number of specific roles:

- Conservation planning and management.

The conservation objectives guide management of sites, to maintain or restore the habitats and species in favourable condition.

- Assessing plans and projects.

Article 6(3) of the 'Habitats' Directive requires appropriate assessment of proposed plans and projects against a site's conservation objectives. Subject to certain exceptions, plans or projects may not proceed unless it is established that they will not adversely affect the integrity of sites. This role for testing plans and projects also applies to the review of existing decisions and consents.

- Monitoring and reporting.

The conservation objectives provide the basis for assessing the condition of a feature and the status of factors that affect it. CCW uses 'performance indicators' within the conservation objectives, as the basis for monitoring and reporting. Performance indicators are selected to provide useful information about the condition of a feature and the factors that affect it.

**The conservation objectives in this document reflect CCW's current information and understanding of the site and its features and their importance in an international context. The conservation objectives are subject to review by CCW in light of new knowledge.**

#### **b. Format of the conservation objectives**

There is one conservation objective for each feature listed in part 3. Each conservation objective is a composite statement representing a site-specific description of what is considered to be the favourable conservation status of the feature. These statements apply to a whole feature as it occurs within the whole plan area, although section 3.2 sets out their relevance to individual management units.

Each conservation objective consists of the following two elements:

1. Vision for the feature
2. Performance indicators

As a result of the general practice developed and agreed within the UK Conservation Agencies, conservation objectives include performance indicators, the selection of which should be informed by JNCC guidance on Common Standards Monitoring<sup>1</sup>.

There is a critical need for clarity over the role of performance indicators within the conservation objectives. **A conservation objective, because it includes the vision for the feature, has meaning and substance independently of the performance indicators, and is more than the sum of the performance indicators.** The performance indicators are simply

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<sup>1</sup> Available through [www.jncc.gov.uk](http://www.jncc.gov.uk) and follow links to Protected Sites and Common Standards Monitoring.

what make the conservation objectives measurable, and are thus part of, not a substitute for, the conservation objectives. Any feature attribute identified in the performance indicators should be represented in the vision for the feature, but not all elements of the vision for the feature will necessarily have corresponding performance indicators.

As well as describing the aspirations for the condition of the feature, the Vision section of each conservation objective contains a statement that the factors necessary to maintain those desired conditions are under control. Subject to technical, practical and resource constraints, factors which have an important influence on the condition of the feature are identified in the performance indicators.

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#### 4.1 Conservation Objective for Feature 1: European Dry Heath (4030)

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##### Vision for Dry Heath

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The dry heath occupies at least 25% of the total site area.
- The dry heath is given the opportunity to expand at the expense of bracken and gorse but not at the expense of semi-natural dry grassland.
- The dry heath is co-dominated by heather, bell heather and western gorse.
- At least 33% of the dry heath is species-rich where the following plants are present; common rock-rose, dropwort, sheep's-fescue, glaucous sedge, harebell, wild thyme and common bird's-foot-trefoil.
- Pioneer and building phases of heath vegetation are present.
- Competitive species indicative of lack of management, bracken *Pteridium aquilinum*, gorse *Ulex europaeus* and native shrub and tree species are kept in check.
- All factors affecting the achievement of these conditions are under control.

##### Performance indicators for Dry Heath

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

<i>Performance indicators for dry heath feature condition (adapted from Monitoring Report 2006)</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
<b>A1.</b> Extent of Dry Heath	Based on the CCW Phase 2 NVC survey habitat map 1994. c. 75ha.	<i>Upper limit:</i> None set. Limited by edaphic conditions. Increase not to be at expense of habitat 6210. Increase may be at expense of bracken and/or gorse. <i>Lower limit:</i> No loss in mapped extent (c.75ha) from the NVC survey (Stevens, D. P. <i>et al.</i> , 1994)



<p><b>A2. Condition of Dry Heath</b></p>	<p>Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.</p>	<p><i>Upper limit:</i> Not required  <i>Lower limit:</i> For the dry heath across the SAC to be considered favourable, the habitat at each of the sample areas must be in favourable condition <u>and</u> at least 70% of the Dry Heath is good quality in each of the sample areas.</p> <p>Sample target for dry heath.  In each sample area  &gt;70% of sampling points are good quality dry heath  <u>Sample area A:</u> 25.5ha at <b>SH 758 841</b>  <u>Sample area B:</u> 1.3 ha at <b>SH 753 841</b>  <u>Sample area C:</u> 2.5ha at <b>SH 752 839</b>  <u>Sample area D:</u> 11.3ha at <b>SH 766 830</b>  <u>Sample area E:</u> 2.7ha at <b>SH 751 838</b>  <u>Sample area F:</u> 3.0ha at <b>SH 753 835</b></p> <p>Dry Heath vegetation is in good condition, characterised by:</p> <ul style="list-style-type: none"> <li>• Two or more dwarf shrub (positive indicator) species</li> <li>• No suppressed forms of heather</li> <li>• Dwarf shrubs have 25-90% cover</li> <li>• <i>Ulex</i> species &lt; 50% cover</li> <li>• <i>Ulex europaeus</i> &lt;25% cover</li> <li>• Indicators of negative change, non-native species, shrub and trees absent</li> <li>• In the species-rich forms two or more of the following species should be present: bird's-foot-trefoil, dropwort, wild thyme, salad burnet, common rock-rose, glaucous sedge, harebell</li> </ul>
<p><b>Site-specific habitat definitions (based on Monitoring Report 2006)</b></p>		
<p>Dry Heath</p>	<p>Dry heath on the Great Orme's Head / Pen Y Gogarth SAC constitutes three types of heath: Species-poor acidic heath (H8a 7 H8b), species-rich calcareous heath (H8c) and calcareous grass heath (CGH).  The species-poor form of dry heath, e.g. <i>Calluna vulgaris-Ulex gallii</i> heath, is characterised by abundant heather, western gorse and bell heather.</p>	

	<p>The species-rich form of dry heath (including the calcareous heath and calcareous grass heath) occur where acidic surface deposits overlies calcareous minerals derived from the bedrock. Such heaths contain unusual combinations of heath and calcareous grassland species such as common rock-rose and salad burnet and are very rare in the UK.</p>
Good quality dry heath	<p>Good quality dry heath will have the following attributes;</p> <p>Within a 1m radius from a point there will be;</p> <ol style="list-style-type: none"> <li>1. At least 2 of the following dwarf shrub species: heather, crowberry <i>Empetrum nigrum</i>, bell heather, cross-leaved heath <i>Erica tetralix</i>, western gorse, bilberry <i>Vaccinium myrtillus</i>.</li> <li>2. No suppressed growth forms of heather.</li> <li>3. Dwarf shrub cover will be between 25-90%</li> <li>4. <i>Ulex</i> spp. cover will form &lt;50%.</li> <li>5. <i>Ulex europaeus</i> will form &lt;25%.</li> <li>6. The following species are absent creeping thistle <i>Cirsium arvense</i>, foxglove <i>Digitalis purpurea</i>, willowherbs <i>Epilobium</i> spp. (excluding marsh willowherb <i>E. palustre</i>), rosebay willowherb <i>Chamerion angustifolium</i>, soft rush <i>Juncus effusus</i>, buttercups <i>Ranunculus</i> spp., ragworts <i>Senecio</i> spp., common nettle <i>Urtica dioica</i> and “coarse grasses”.</li> <li>7. No more than 1 frond of bracken.</li> <li>8. Non-native cotoneaster <i>Cotoneaster</i> spp. are absent</li> <li>9. Trees and tall shrubs are absent.</li> </ol>
Suppressed growth forms	<p>Topiary heather: Persistent heavy grazing on older branched plants may produce heather plants with dense compact canopies, in which the size of bushes is considerably reduced. Note: in wind-pruned vegetation, this may be difficult to separate and other indicators of over-grazing, such as up-rooted heather should be looked for (JNCC, 2004).</p> <p>“Drumstick” or “mop” heather: Prolonged heavy grazing on mature plants may also produce “drumstick” or “mop” heather bushes in which the heather canopy is reduced to small, compact masses of intertwined and contorted shoots on the ends of scattered long, bare stems. Note: tall drumstick-like heather can occur on wet heaths when browsing is not heavy. This can be checked by looking for browsed shoots and contorted shoot growth (JNCC, 2004).</p>
Coarse grasses	<p>False oat grass <i>Arrhenatherum elatius</i>, cock’s-foot <i>Dactylis glomerata</i>, Yorkshire fog <i>Holcus lanatus</i></p>
Trees and tall shrubs	<p>Sycamore <i>Acer pseudoplatanus</i>, Birch <i>Betula</i> sp.,</p>

		hawthorn <i>Crataegus monogyna</i> , blackthorn <i>Prunus spinosa</i> , bramble <i>Rubus fruticosus</i> agg., ash <i>Fraxinus excelsior</i> , strawberry tree <i>Arbutus unedo</i>
<b>Performance indicators for factors affecting the dry heath feature</b>		
<b>Factor</b>	<b>Factor rationale and other comments</b>	<b>Operational Limits</b>
<b>F1.</b> Livestock grazing	Light grazing and browsing by herbivorous animals, a combination of livestock and wild/feral species is important to maintaining the areas of Dry Heath. If grazing/browsing is relaxed or ceases altogether the dry heath would become rank and succeed to gorse scrub and woodland in the more sheltered locations. If grazing/browsing is too intense then the dwarf shrubs will be suppressed and species of grasslands will take over.	<i>Upper limit:</i> The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear or conversion to species-poor grassland. <i>Lower limit:</i> The Dry Heath must be subject to sufficient grazing/browsing to prevent the growth of over-mature heather and gorse from smothering the growth of herbs, grasses and sedges.
<b>F2.</b> Rotational management - burning or mowing & raking	This factor requires some further investigation. Uncontrolled burning takes place in some areas, sometimes at inappropriate times of year. If not used properly and linked to an appropriate grazing regime, it can lead to a vigorous re-growth of competitive, fire-resistant species like western gorse. If mowing is undertaken the cut material must be removed to prevent the suppression of pioneer ericoid dwarf shrubs.	<i>Upper limit:</i> no more than 7% - 4% of feature to be burnt or mown & raked in a fifteen – twenty five year period <i>Lower limit:</i> none set
<b>F3.</b> Air Pollution	The Dry Heath could be affected by airborne pollutants (wet and/or dry deposition) originating from sources distant from the site.	<i>Upper limit:</i> levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance <i>Lower limit:</i> none set
<b>F4.</b> Climate	In the most exposed (wind and salt spray) parts of the headland the dry heath vegetation may be a climax in which taller shrubs and trees fail to establish. Climate change might lead to increased levels of exposure, localised drought or conversely water-logging that may lead to suppression of dry heath.	<i>Upper limit:</i> N/A <i>Lower limit:</i> N/A

## 4.2 Conservation Objective for Feature 2: Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco – Brometalia*) (6210)

### Vision for Semi-natural dry grasslands

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The semi-natural dry grasslands occupy at least 35% of the total site area.
- The semi-natural dry grasslands are given the opportunity to expand at the expense of bracken and gorse but not at the expense of dry heath.
- The semi-natural dry grasslands are a species-rich mixture of characteristic herbs, grasses and sedges that include hoary rock-rose, common rock-rose, salad burnet, wild thyme, dropwort, common bird's-foot-trefoil, sheep's fescue, crested hair-grass, quaking grass, meadow oat-grass, glaucous sedge and spring sedge.
- Terricolous lichens, acrocarpous mosses and bare rock and soil are present in the open short turf grassland community.
- Species indicative of agricultural improvement and/or trampling are rare or absent.
- Native shrub and tree species and bracken are rare or absent.
- Invasive non-native species such as low growing and mat-forming Cotoneasters are absent.
- All factors affecting the achievement of these conditions are under control.

### Performance indicators for Semi-natural dry grasslands

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

<i>Performance indicators for semi-natural dry grasslands feature condition (adapted from Monitoring Report 2006)</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
<b>A1.</b> Extent of Semi-natural Dry Grasslands	Based on the CCW Phase 2 NVC survey habitat map 1994. c. 100ha.	<i>Upper limit:</i> None set. Limited by edaphic conditions. Increase not to be at expense of habitat 4030. Increase may be at expense of bracken and/or gorse providing this does not prejudice habitat of key species, e.g. silky wave moth. <i>Lower limit:</i> No loss in mapped extent (c.100ha) from the 1994 NVC survey (Stevens, D. P. <i>et al.</i> , 1994)
<b>A2.</b> Condition of Semi-natural Dry Grasslands	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	<i>Upper limit:</i> Not required <i>Lower limit:</i> At least 50 or 60% of the semi-natural dry grasslands are of good quality in each of the sample areas.  Sample targets for semi-natural dry grasslands. <b>Sample area A:</b> 0.42ha at <b>SH 779 836</b> ≥ 60% of sampling points are good quality closed (nutrient-rich)

		<p>calcareous grassland (CG2c).  <u>Sample area B:</u> 3.00ha at <b>SH 773 823</b>  ≥ 50% of sampling points are either good quality closed (nutrient-poor) calcareous grassland (CG2d) or good quality open calcareous grassland (CG1d).  <u>Sample area C:</u> 0.60ha.at <b>SH 767 832</b>  ≥ 60% of sampling points are good quality closed (nutrient-rich) calcareous grassland (CG2c).  <u>Sample area D:</u> 2.10ha at <b>SH 764 827</b>  ≥ 60% of sampling points are good quality open calcareous grassland (CG1d).  <u>Sample area E:</u> 2.42ha at <b>SH 760 831</b>  ≥ 60% of sampling points are good quality closed (nutrient-poor) calcareous grassland (CG2d).</p> <p>Vegetation of Semi-natural dry grasslands is in good condition, characterised by:</p> <ul style="list-style-type: none"> <li>• Four or more positive indicator species</li> <li>• Species indicative of agricultural improvement and/or trampling are absent</li> <li>• Where there is open short turf at least 5% cover is bare ground, bare rock, terricolous lichens or acrocarpous mosses</li> <li>• Invasive non-native species are absent</li> <li>• Bracken, native shrubs, trees and tree saplings are absent</li> </ul>
<b>Site-specific habitat definitions (based on Monitoring Report 2006)</b>		
Calcareous grassland	Vegetation where in any given 1m radius area of search: at least two of the following species are present meadow oat-grass spp., glaucous sedge, dropwort, lady’s bedstraw, rock-rose spp., crested hair-grass, salad burnet, wild thyme <u>And</u> The cover of bare rock is < 75%.	
Open calcareous grassland (CG1)	Calcareous grassland vegetation (as defined above) where: Hoary rock-rose is present and the combined (?) cover of bare ground, bare rock, terricolous	

	lichens and acrocarpous mosses is at least 5%.
Good Quality CG1 Calcareous grassland	<p>Good quality CG1 open calcareous grassland will have the following attributes:  Within a 50cm radius of each sampling point.</p> <ol style="list-style-type: none"> <li>1. Terricolous lichens and acrocarpous mosses are present in at least three quadrants.</li> <li>2. Hoary rock-rose and 3 of the following positive indicators are present; kidney vetch, sedge spp., carline thistle, bird's-foot-trefoil, mouse-ear hawkweed, salad burnet, wild thyme.</li> <li>3. Yorkshire fog, perennial rye-grass <i>Lolium perenne</i> and white clover <i>Trifolium repens</i> are absent.</li> <li>4. cock's-foot is &lt;10%.</li> </ol> <p>Within a 1m radius of each sampling point,</p> <ol style="list-style-type: none"> <li>5. Thistles (excluding carline thistle) are absent.</li> <li>6. Introduced species are absent.</li> <li>7. Bracken (<math>\leq 2</math> fronds), shrubs, trees and saplings (<math>\geq 10</math>cm in height or length) are absent.</li> </ol>
Good Quality CG2 Calcareous grassland	<p>Good quality CG2c closed calcareous grassland will have the following attributes:  Within a 50cm radius of each sample point.</p> <ol style="list-style-type: none"> <li>1. Herb cover is at least 30%.</li> <li>2. 4 of the positive indicators are present; kidney vetch, sedge spp., dropwort, lady's bedstraw, common rock-rose, bird's-foot-trefoil, mouse-ear hawkweed, common milkwort <i>Polygala vulgaris</i>, salad burnet, wild thyme.</li> <li>3. Perennial rye-grass is absent, and, Yorkshire fog and white clover jointly comprise &lt;10%.</li> <li>4. False oat-grass and cock's-foot comprise &lt;10% cover.</li> </ol> <p>Within a 1m radius of each sampling point,</p> <ol style="list-style-type: none"> <li>5. Nettle and thistles (excluding carline thistle) are absent.</li> <li>6. Introduced species are absent.</li> <li>7. Bracken (<math>\leq 2</math> fronds), shrubs, trees and saplings (<math>\geq 10</math>cm in height or length) are absent.</li> </ol> <p>Good quality CG2d closed nutrient-poor calcareous grassland will have the following attributes:  Within a 50cm radius of each sampling point.</p> <ol style="list-style-type: none"> <li>1. Herb cover is at least 30%.</li> <li>2. 4 of the positive indicators are present; kidney vetch, sedge spp., dropwort, lady's bedstraw, common rock-rose, bird's-foot-trefoil, mouse-ear hawkweed, common milkwort, salad burnet, wild thyme.</li> <li>3. Perennial rye-grass, Yorkshire fog and white clover are absent.</li> <li>4. False oat-grass and cock's-foot comprise &lt;10% cover</li> </ol> <p>Within a 1m radius of each sampling point,</p>

	5. Nettle and thistles (excluding carline thistle) are absent. 6. Introduced species are absent. 7. Bracken ( $\leq 2$ fronds), shrubs, trees and saplings ( $\geq 10$ cm in height or length) are absent.	
Introduced species	Barberry <i>Berberis</i> spp., non-native cotoneaster spp., strawberry tree, pine <i>Pinus</i> spp., turkey oak <i>Quercus cerris</i> and evergreen oak <i>Q. ilex</i> .	
Native shrub and tree species	<i>Sycamore</i> , <i>Birch</i> spp., <i>hawthorn</i> , <i>ash</i> , <i>blackthorn</i> , <i>rose</i> <i>Rosa</i> spp., <i>bramble</i> , <i>willow</i> <i>Salix</i> spp., <i>gorse</i> spp..	
<b>Performance indicators for factors affecting the semi-natural dry grasslands feature</b>		
<b>Factor</b>	<b>Factor rationale and other comments</b>	<b>Operational Limits</b>
<b>F1. Livestock grazing</b>	Grazing by herbivorous animals, a combination of livestock and wild/feral species is important to maintaining the areas of semi-natural dry grassland. If grazing is relaxed or ceases altogether the semi-natural dry grasslands would become rank and dominated by coarse grasses, reducing the cover of herbs and eventually succeed to scrub or woodland as woody species become established. If grazing is too intense particularly when plants are flowering then seed will not be set and this could lead to impoverishment. Grazing animals can cause localised nutrient enrichment of the turf where they congregate in numbers and dung.	<i>Upper limit:</i> The grazing pressure must not be so high as either to break down the vegetation structure and cause significant bare areas to appear or conversion to species-poor grassland. <i>Lower limit:</i> The semi-natural dry grasslands must be subject to sufficient grazing to prevent the growth of coarse grasses, bracken and shrubs and trees from suppressing the growth of herbs, grasses and sedge characteristic of open / closed short turf.
<b>F2. Invasion by woody species (both native and non-native) and bracken</b>	Where grazing pressure is relaxed or absent this usually leads to invasion by woody species or bracken, the speed of invasion dependent upon the proximity to seed / propagule sources and the vectors involved. Bracken mostly spreads out by growth from underground rhizomes so expansion is usually confined to the existing bracken–grassland boundaries.	<i>Upper limit:</i> Woody species and bracken absent <i>Lower limit:</i> Seedlings of woody species and/or thinly scattered bracken fronds rare.
<b>F3. Public Recreation</b>	Where public recreation occurs, such as walking along footpaths or car parking, trampling / vehicle movements can lead to loss of species-richness as the species most sensitive to damage are soon lost and only those most tolerant survive. In the most extreme cases paths become wider or on steep slopes there is complete loss of the turf followed by soil erosion. This deterioration is impossible to reverse.	<i>Upper limit:</i> Existing length and width of path network as mapped by LIFE team 1998 and Map of the Great Orme 2003 Country Park & Nature Reserve© (Mapping Company Ltd) <i>Lower limit:</i> None set
<b>F4. Air Pollution</b>	The semi-natural dry grasslands could be affected by airborne pollutants (wet and or dry deposition) originating from	<i>Upper limit:</i> levels of pollutants must not exceed critical load thresholds set for vegetation types

	sources distant from the site. Nitrogen deposition could favour coarse grasses.	according to JNCC guidance <i>Lower limit:</i> none set
<b>F5. Climate</b>	In the most exposed (wind and salt spray) and thinner soils the semi-natural dry grassland communities may be a climax in which bracken, shrubs and trees fail to establish. Climate change might lead to increased levels of exposure although winter drought and increased summer rainfall are predicted. This may mean that it will be easier for bracken and woody species to spread into these communities or for coarse grasses to out-compete the xerophytes.	<i>Upper limit:</i> N/A <i>Lower limit:</i> N/A

### 4.3 Conservation Objective for Feature 3: Vegetated sea cliffs of the Atlantic and Baltic coasts (1230)

#### Vision for Vegetated Sea Cliffs

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The extent of the sea cliffs and their associated short turf maritime grassland will occupy not more than 5% of the site, excepting natural catastrophic cliff collapse.
- Cliff and crevice vegetation will occur naturally on suitable cliff sections throughout the site.
- The vegetation will be composed of native plants such as sea cabbage *Brassica oleracea*.
- The expansion of climbing plants such as ivy *Hedera helix* and the spread of non-native red valerian *Centranthus ruber* will be discouraged.
- Short turf maritime grassland will be dominated by red fescue and characteristic species such as thrift and buck's-horn plantain
- All factors affecting the achievement of these conditions are under control.

#### Performance indicators for Vegetated Sea Cliffs

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

<i>Performance indicators for vegetated sea cliffs feature condition (adapted from Monitoring Report 2006)</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
<b>A1.</b> Extent of Vegetated Sea Cliffs vegetation	Based on the CCW Phase 2 NVC survey habitat map 1994. c.14ha.	<i>Upper limit:</i> Not to increase at the expense of habitats 4030 and 6210. (Catastrophic collapse of sections of sea cliff might exceed this limit.) <i>Lower limit:</i> 5% of the site area. Limited by geology, topography, location and the process of natural erosion. Extent mapped (14ha) (No significant loss of feature extent).
<b>A2.</b> Condition of Vegetated Sea	Based on the Standard CSM attribute for this feature. Modified according to site-	<i>Upper limit:</i> Not required <i>Lower limit:</i> At least 85% of the



Cliffs vegetation	specific requirements.	<p>vegetated sea cliffs (including grazed and ungrazed maritime grassland) are of good quality.</p> <p>Sample target for vegetated sea cliffs.</p> <p>In each sample area &gt; 85% of sampling points are “good quality” grazed or ungrazed maritime grassland.</p> <p><u>Sample area A</u>: 0.75ha at <b>SH 779 839</b></p> <p><u>Sample area B</u>: 0.20ha at <b>SH 765 843</b></p> <p><u>Sample area C</u>: 0.10ha at <b>SH 751 841</b></p>
<b>Site-specific habitat definitions (based on Monitoring Report 2006)</b>		
Vegetated Sea Cliffs		Steep slopes fringing hard coasts, supporting a wide diversity of vegetation types with variable maritime influence. Zones and transitions between the vegetation types should be evident.
Cliff ledge and crevice community		Vegetation occupying rock crevices and cliff ledges mostly only accessible by ropes (i.e. inaccessible to normal access on foot), which may be exposed to salt-spray.
Good quality cliff ledge and crevice community (MC4)		<p>Good quality cliff ledge and crevice community will have the following attributes;</p> <p>Within a 1m radius of each sampling point.</p> <p>1. At least one of the following species is present; thrift, sea spleenwort <i>Asplenium marinum</i>, sea aster <i>Aster tripolium</i>, wild cabbage, common scurvygrass <i>Cochlearia officinalis</i>, rock samphire <i>Crithmum maritimum</i>, golden-samphire <i>Inula crithmoides</i>, tree-mallow <i>Lavatera arborea</i>, sea-lavender <i>Limonium</i> spp., sea plantain, roseroot <i>Sedum rosea</i>, rock sea-spurrey <i>Spergularia rupicola</i>.</p> <p>2. Invasive plant species are absent.</p>
Grazed maritime grassland (MC8 and MC9)		Short turf maritime grassland with red fescue <i>Festuca rubra</i> , thrift and buck’s-horn plantain <i>Plantago coronopus</i> .

Good quality grazed maritime grassland	<p>Good quality grazed maritime grassland will have the following attributes;</p> <p>Within a 1m radius of each sampling point.</p> <ol style="list-style-type: none"> <li>1. Sward height is <math>\leq 10</math>cm.</li> <li>2. Red fescue is present.</li> <li>3. At least two of the following are present: kidney vetch, thrift, sedge sp., wild carrot <i>Daucus carota</i>, rock-rose sp., bird's-foot-trefoil, buck's-horn plantain, ribwort plantain <i>P. lanceolata</i>, sea plantain, salad burnet, sea campion <i>Silene uniflora</i>, spring squill.</li> <li>4. No more than one of the following is present, and is absent from at least one quadrant; creeping thistle, spear thistle <i>C. vulgare</i>, perennial rye-grass, broad-leaved dock <i>Rumex obtusifolius</i>, curled dock <i>R. crispus</i>, common ragwort <i>Senecio jacobaea</i>, white clover, common nettle.</li> <li>5. Large patches (<math>&gt;10</math>cm width?) of broad-leaved grass dominated swards (including track-ways) are absent.</li> <li>6. Invasive plant species are absent.</li> <li>7. Bracken and shrub species are absent.</li> </ol>	
Ungrazed maritime grassland (MC8 and MC9)	Maritime grassland with a thick mattress-like cover of red fescue.	
Good quality ungrazed maritime grassland	<p>Good quality ungrazed maritime grassland will have the following attributes;</p> <p>Within a 1m radius of each sampling point.</p> <ol style="list-style-type: none"> <li>1. Sward height is <math>\geq 10</math>cm.</li> <li>2. Red fescue has <math>&gt;80\%</math> cover.</li> <li>3. No more than one of the following is present, and is absent from at least one quadrant; creeping thistle, spear thistle, perennial rye-grass, broad-leaved dock, curled dock, common ragwort, white clover, common nettle.</li> <li>4. Large patches (<math>&gt;10</math>cm width?) of broad-leaved grass dominated swards (including track-ways) are absent.</li> <li>5. Invasive plant species are absent.</li> <li>6. Bracken and shrub species are absent.</li> </ol>	
Broad-leaved grasses	Creeping bent <i>Agrostis stolonifera</i> , false oat-grass, false brome <i>Brachypodium sylvaticum</i> , cock's-foot, Yorkshire fog.	
Grass-dominated sward	Grass dominated swards greater than $400\text{cm}^2$ in total area (with a minimum width of at least 10cm), i.e. 20cm x 20cm to 10cm x 40 cm.	
Invasive plant species (non-native & native) (s = shrub)	<i>Red valerian</i> <i>Centranthus ruber</i> , Non-native cotoneaster spp.(s), hawthorn (s), ivy <i>Hedera helix</i> , blackthorn (s), gorse (s).	
<b>Performance indicators for factors affecting the vegetated sea cliffs feature</b>		
<b>Factor</b>	<b>Factor rationale and other comments</b>	<b>Operational Limits</b>
<b>F1.</b> Pollution	Oil spills and other marine pollution episodes may cause short-term damage.	<i>Upper limit:</i> None set <i>Lower limit:</i> None set
<b>F2.</b> Recreational Impacts	Localised impacts of climbing.	<i>Upper limit:</i> No opening of new routes. Existing climbing

		restrictions as set by Country Park climbing agreements, Country Park Bye-laws (see Management Plan 2006). <i>Lower limit:</i> None set
<b>F3.</b> Coastal Erosion processes	Natural events that may locally be catastrophic.	<i>Upper limit:</i> None set <i>Lower limit:</i> None set
<b>F4.</b> Eutrophication	Expansion of breeding sea bird colony might lead to guano deposition causing localised smothering of vegetation.	<i>Upper limit:</i> Current extent of breeding sea bird colony <i>Lower limit:</i> None set
<b>F5.</b> Invasive species	Climate change could encourage the spread of native climbers, for example ivy or non-native clingers, such as red valerian to compete for ledges and crevices.	<i>Upper limit:</i> None set <i>Lower limit:</i>

## **5. ASSESSMENT OF CONSERVATION STATUS AND MANAGEMENT REQUIREMENTS**

This part of the document provides:

- A summary of the assessment of the conservation status of each feature.
- A summary of the management issues that need to be addressed to maintain or restore each feature.

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### **5.1 Conservation Status and Management Requirements of Feature 1: European Dry Heath (4030)**

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#### **Conservation Status of Dry Heath**

**2006: Unfavourable – un-classified (LIFE 1999: Favourable – decline (feared).)**

Performance indicators have been developed for this feature. Monitoring has been carried out.

#### **Management Requirements of Dry Heath**

Active management may be needed to rejuvenate the dry heath. Rotational management to diversify structure and provide increased open ground and pioneer stages. Monitoring of this feature should include checking for increases in cover of species such as western gorse, bracken native shrubs and invasive non-native shrubs such as *Cotoneaster* spp. and strawberry tree.

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### **5.2 Conservation Status and Management Requirements of Feature 2: Semi-natural Dry Grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (6210)**

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#### **Conservation Status of Semi-natural Dry Grasslands**

**2006: Unfavourable – un-classified (LIFE 1999: This feature was split between two features in the Management Plan: Favourable – maintained for British *Xerobromion* grasslands and Favourable – decline (feared) for British *Mesobromion* grasslands.)**

Performance indicators have been developed for this feature. Monitoring has been carried out.

#### **Management Requirements of Semi-natural Dry Grasslands**

Maintain livestock grazing but review sheep numbers and grazing period as increased rankness of sward has been detected. Continue to stabilise feral goat numbers. Understand population dynamics of rabbits. Maintain programme of eradication of invasive non-native species, e.g. low-growing,

spreading species of Cotoneaster. Monitoring of this feature should include checking for presence of native shrub and tree invasion.

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### **5.3 Conservation Status and Management Requirements of Vegetated Sea Cliffs (1230)**

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#### **Conservation Status of Vegetated Sea Cliffs**

**2006: Favourable (LIFE 1999:** This was not a SAC feature in 1999 so its status was not given.)

Performance indicators have been developed for this feature. (These may require revision if this feature is surveyed in more detail in the future.) Monitoring has been carried out.

#### **Management Requirements of Vegetated Sea Cliffs.**

None, maintained by natural processes. Monitoring to included potential adverse impacts of rock climbing.

## 6. ACTION PLAN: SUMMARY

This section takes the management requirements outlined in Section 5 a stage further, assessing the specific management actions required on each management unit. This information is a summary of that held in CCW's Actions Database for sites, and the database will be used by CCW and partner organisations to plan future work to meet the Wales Environment Strategy targets for sites.

<b>Unit Number</b>	<b>CCW Database Number</b>	<b>Unit Name</b>	<b>Summary of Conservation Management Issues</b>	<b>Action needed?</b>
1	000718	Unit One - Great Orme Country Park unenclosed land	Dry heath requires management to improve condition. Dry heath & grassland require appropriate intensity and periodicity of grazing. Non-native cotoneaster and native scrub e.g. gorse and thorns require removal from grassland. Bracken management. Feral goat population control. Trampling by visitors may lead to localised deterioration in quality of grassland and heathland and or erosion. Current level of rock climbing is not known to be causing damage to vegetated sea cliffs.	Yes
2	000719	Unit two - Great Orme Country Park woodland	Some small areas of grassland (KH) occur as glades surrounded by SSSI mixture feature woodland habitat. These should be kept open by removing shading trees and shrub species and invasive non-natives such as cotoneaster, strawberry tree and turkey oak.	Yes
3	000720	Unit three - Y Ffridd unenclosed land	Part owned by CCW. Grazing intensity may be lower than desirable as shift toward stall, species-poor grassland. Invasion by native thorny shrubs and/or non-native cotoneaster spp.. Occasional fly-tipping. Occasional localised damage by vehicle tracks, rutting & parking. Drying green for washing.	Yes
4	000721	Unit four - The Old Rectory unenclosed land	Some invasion by bracken of grassland may require attention.	Yes
5	000722	Unit five - Maes Y Facrell enclosed land	Grazing would benefit s-n dry grassland here by way of short period of intense grazing during late summer early autumn (e.g. August to October incl.) to remove thatch and open sward. Minor invasion by non-native cotoneaster requires removal. Some management of gorse. Bracken management.	Yes
6	000723	Unit six - Great Orme Mines land	S-n dry grassland is within the Great Orme mines lease land but outside the mine compound. the grassland is grazed by sheep from surrounding Country Park (Unit 1). Grazing to continue. Minor invasion by scrub (gorse) & bracken may require control.	Yes

<b>Unit Number</b>	<b>CCW Database Number</b>	<b>Unit Name</b>	<b>Summary of Conservation Management Issues</b>	<b>Action needed?</b>
7	000724	Unit seven - North Wales Wildlife Trust Nature Reserve land	Dry heath has been lost to gorse scrub ( <i>Ulex europaeus</i> ). This needs to be reversed by patch scrub control (can also include some thinning of thorn scrub). Bracken requires management to increase diversity of structure (for silky wave moth). Low grazing intensity should be maintained to provide luxuriant common rock-rose. Some loss of open ground to dense non-native cotoneaster spp.. This should be killed and dead material removed.	Yes
8	000725	Unit eight - Pen y Ffridd Bodafon Farm enclosed land	Scrub invasion, native gorse and thorn require control. Situation regarding non-native cotoneaster spp. requires investigation. Grazing intensity and timing appears satisfactory.	Yes
9	000726	Unit nine - Ardwy Orme & Glain Orme enclosed land	Infestation by non-native cotoneaster spp. requires further work. Previously cleared areas need investigation for re-colonisation by non-natives and if so, follow-up treatment. Some selective removal of trees (broadleaf and conifer) and shrubs to reducing shading of up-slope grasslands and cliffs also required. Unauthorised camping and fire lighting. Fly-tipping. CCBC require consultation regarding tree removal in a Conservation Area.	Yes
10	000727	Unit ten - Camera Obscura Hill & The Colonnade	Insufficient grazing intensity is partially compensated for by public trampling on upper slopes. Steep side slopes are inadequately grazed. Scrub & tree (thorns and young/salt-pruned sycamore) control and non-native cotoneaster spp. removal would be beneficial to expand grassland. Littering by general public is a localised problem. Habitat management by S15 MA or S28 Assent with CCBC Leisure Services.	Yes
11	000728	Unit eleven - Donkey Field Wyddfyd Road	Grazing intensity and period not known so need investigation. If changes required then may need S15MA with tenant. Invasive woody species not known to be a problem.	Yes
12	000731	Unit twelve - Bay View Llican Belle View Terraces	Lightly grazed but may not be sufficient. May be threatened by invasion by woody shrubs (including non-native cotoneaster spp.). A small unit where S15MA may not be feasible for very small individual land ownerships.	Yes
13	000732	Unit thirteen - Great Orme Intertidal	Does not include terrestrial SAC habitats. No SAC feature management issues.	No
14	000733	Unit fourteen - Happy Valley Road & The Colonnade Cliffs	Invasive species could be a problem, e.g. red valerian occupies ledges otherwise occupied by wild cabbage. Litter and other rubbish. These cliffs are too low to be attractive to climbers.	Yes

## 7. GLOSSARY

This glossary defines some of the terms used in this **Core Management Plan**. Some of the definitions are based on definitions contained in other documents, including legislation and other publications of CCW and the UK nature conservation agencies. None of these definitions is legally definitive.

<b>Action</b>	A recognisable and individually described act, undertaking or <b>project</b> of any kind, specified in section 6 of a <b>Core Management Plan</b> or <b>Management Plan</b> , as being required for the <b>conservation management</b> of a site.
<b>Attribute</b>	A quantifiable and monitorable characteristic of a <b>feature</b> that, in combination with other such attributes, describes its <b>condition</b> .
<b>Common Standards Monitoring</b>	A set of principles developed jointly by the UK conservation agencies to help ensure a consistent approach to <b>monitoring</b> and reporting on the <b>features</b> of sites designated for nature conservation, supported by guidance on identification of <b>attributes</b> and monitoring methodologies.
<b>Condition</b>	A description of the state of a feature in terms of qualities or <b>attributes</b> that are relevant in a nature conservation context. For example the condition of a habitat usually includes its extent and species composition and might also include aspects of its ecological functioning, spatial distribution and so on. The condition of a species population usually includes its total size and might also include its age structure, productivity, relationship to other populations and spatial distribution. Aspects of the habitat(s) on which a species population depends may also be considered as attributes of its condition.
<b>Condition assessment</b>	The process of characterising the <b>condition</b> of a <b>feature</b> with particular reference to whether the aspirations for its condition, as expressed in its <b>conservation objective</b> , are being met.
<b>Condition categories</b>	The <b>condition</b> of <b>feature</b> can be categorised, following <b>condition assessment</b> as one of the following <sup>2</sup> : Favourable: maintained; Favourable: recovered; Favourable: un-classified Unfavourable: recovering; Unfavourable: no change; Unfavourable: declining; Unfavourable: un-classified Partially destroyed; Destroyed.
<b>Conservation management</b>	Acts or undertaking of all kinds, including but not necessarily limited to <b>actions</b> , taken with the aim of achieving the <b>conservation objectives</b> of a site. Conservation management includes the taking of statutory and non-statutory measures, it can include the acts of any party and it may take place outside site boundaries as well as within sites. Conservation management may also be embedded within other frameworks for land/sea management carried out for purposes other than achieving the conservation objectives.
<b>Conservation objective</b>	The expression of the desired <b>conservation status</b> of a <b>feature</b> , expressed as a <b>vision for the feature</b> and a series of <b>performance indicators</b> . The conservation objective for a feature is thus a composite statement, and each feature has one conservation objective.

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<sup>2</sup> See JNCC guidance on Common Standards Monitoring <http://www.jncc.gov.uk/page-2272>

<b>Conservation status</b>	A description of the state of a <b>feature</b> that comprises both its <b>condition</b> and the state of the <b>factors</b> affecting or likely to affect it. Conservation status is thus a characterisation of both the current state of a feature and its future prospects.
<b>Conservation status assessment</b>	The process of characterising the <b>conservation status</b> of a <b>feature</b> with particular reference to whether the aspirations for it, as expressed in its <b>conservation objective</b> , are being met. The results of conservation status assessment can be summarised either as ‘favourable’ (i.e. conservation objectives are met) or unfavourable (i.e. conservation objectives are not met). However the value of conservation status assessment in terms of supporting decisions about <b>conservation management</b> , lies mainly in the details of the assessment of feature <b>condition</b> , <b>factors</b> and trend information derived from comparisons between current and previous conservation status assessments and condition assessments.
<b>Core Management Plan</b>	A CCW document containing the conservation objectives for a site and a summary of other information contained in a full site <b>Management Plan</b> .
<b>Factor</b>	Anything that has influenced, is influencing or may influence the <b>condition</b> of a <b>feature</b> . Factors can be natural processes, human activities or effects arising from natural process or human activities, They can be positive or negative in terms of their influence on features, and they can arise within a site or from outside the site. Physical, socio-economic or legal constraints on <b>conservation management</b> can also be considered as factors.
<b>Favourable condition</b>	See <b>condition</b> and <b>condition assessment</b>
<b>Favourable conservation status</b>	See <b>conservation status</b> and <b>conservation status assessment</b> . <sup>3</sup>
<b>Feature</b>	The species population, habitat type or other entity for which a site is designated. The ecological or geological interest which justifies the designation of a site and which is the focus of conservation management.
<b>Integrity</b>	See <b>site integrity</b>
<b>Key Feature</b>	The habitat or species population within a <b>management unit</b> that is the primary focus of <b>conservation management</b> and <b>monitoring</b> in that unit.
<b>Management Plan</b>	The full expression of a designated site’s legal status, <b>vision</b> , <b>features</b> , <b>conservation objectives</b> , <b>performance indicators</b> and management requirements. A complete management plan may not reside in a single document, but may be contained in a number of documents (including in particular <b>the Core Management Plan</b> ) and sets of electronically stored information.
<b>Management Unit</b>	An area within a site, defined according to one or more of a range of criteria, such as topography, location of <b>features</b> , tenure, patterns of land/sea use. The key characteristic of management units is to reflect the spatial scale at which <b>conservation management</b> and <b>monitoring</b> can be most effectively organised. They are used as the primary basis for differentiating priorities for conservation management and monitoring in different parts of a site, and for facilitating communication with those responsible for management of different parts of a site.
<b>Monitoring</b>	An intermittent (regular or irregular) series of observations in time, carried out to show the extent of compliance with a formulated standard or degree of deviation from

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<sup>3</sup> A full definition of favourable conservation status is given in Section 4.



an expected norm. In **Common Standards Monitoring**, the formulated standard is the quantified expression of favourable **condition** based on **attributes**.

- Operational limits** The levels or values within which a **factor** is considered to be acceptable in terms of its influence on a **feature**. A factor may have both upper and lower operational limits, or only an upper limit or lower limit. For some factors an upper limit may be zero.
- Performance indicators** The **attributes** and their associated **specified limits**, together with **factors** and their associated **operational limits**, which provide the standard against which information from **monitoring** and other sources is used to determine the degree to which the **conservation objectives** for a **feature** are being met. Performance indicators are part of, not the same as, conservation objectives. See also **vision for the feature**.
- Plan or project** **Project:** Any form of construction work, installation, development or other intervention in the environment, the carrying out or continuance of which is subject to a decision by any public body or statutory undertaker.  
**Plan:** a document prepared or adopted by a public body or statutory undertaker, intended to influence decisions on the carrying out of **projects**. Decisions on plans and projects which affect Natura 2000 and Ramsar sites are subject to specific legal and policy procedures.
- Site integrity** The coherence of a site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it is designated.
- Site Management Statement (SMS)** The document containing CCW's views about the management of a site issued as part of the legal notification of an SSSI under section 28(4) of the Wildlife and Countryside Act 1981, as substituted.
- Special Feature** See **feature**.
- Specified limit** The levels or values for an **attribute** which define the degree to which the attribute can fluctuate without creating cause for concern about the **condition** of the **feature**. The range within the limits corresponds to favourable, the range outside the limits corresponds to unfavourable. Attributes may have lower specified limits, upper specified limits, or both.
- Unit** See **management unit**.
- Vision for the feature** The expression, within a **conservation objective**, of the aspirations for the **feature** concerned. See also **performance indicators**.
- Vision Statement** The statement conveying an impression of the whole site in the state that is intended to be the product of its **conservation management**. A 'pen portrait' outlining the **conditions** that should prevail when all the **conservation objectives** are met. A description of the site as it would be when all the **features** are in **favourable condition**.

## **8. REFERENCES AND ANNEXES**

CCW Wales Lowland Grassland Survey: SH 78/1 Great Orme's Head SSSI and Annexes: Site Description & Vegetation Map (1:5000) (Stevens, D. P. *et al.*, 1994)

Soil/Plant Interactions in Lowland Grasslands – Great Orme Study, Final Report (Stevens, P. A. *et al.*, 1995) ITE/NERC

Draft Minimum Format Management Plan: Great Orme's Head / Pen Y Gogarth cSAC (Hellowell, T. LIFE – Nature Reports, CCW 1999)

Great Orme's Head / Pen Y Gogarth SAC Monitoring Report (J. Creer 2006) CCW internal report, available on request.