

**Site Name: East Burren Complex SAC**

**Site Code: 001926**

This large site incorporates all of the high ground in the east Burren in Counties Clare and Galway, and extends south-eastwards to include a complex of calcareous wetlands. The area encompasses a range of limestone habitats that include limestone pavement and associated calcareous grasslands and heath, scrub and woodland together with a network of calcareous lakes and turloughs. The site exhibits some of the best and most extensive areas of oligotrophic limestone wetlands to be found in the Burren and in Europe.

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):

- [3140] Hard Water Lakes
- [3180] Turloughs\*
- [3260] Floating River Vegetation
- [4060] Alpine and Subalpine Heaths
- [5130] Juniper Scrub
- [6130] Calaminarian Grassland
- [6210] Orchid-rich Calcareous Grassland\*
- [6510] Lowland Hay Meadows
- [7210] *Cladium* Fens\*
- [7220] Petrifying Springs\*
- [7230] Alkaline Fens
- [8240] Limestone Pavement\*
- [8310] Caves
- [91E0] Alluvial Forests\*
  
- [1065] Marsh Fritillary (*Euphydryas aurinia*)
- [1303] Lesser Horseshoe Bat (*Rhinolophus hipposideros*)
- [1355] Otter (*Lutra lutra*)

The limestone pavement at this site includes smooth blocky and shattered types. The bare pavement is interspersed with species-rich calcareous vegetation communities. Typical grassland species found on or near the pavement include Blue Moor-grass (*Sesleria albicans*), Mountain Everlasting (*Antennaria dioica*), Bloody Crane's-bill (*Geranium sanguineum*) and Wild Thyme (*Thymus praecox*). Where soil cover is more

extensive purer grassland communities are found, and these are often orchid-rich. Species such as Pyramidal Orchid (*Anacamptis pyramidalis*), Frog Orchid (*Coeloglossum viride*), Fragrant Orchid (*Gymnadenia conopsea*), Bee Orchid (*Ophrys apifera*), Fly Orchid (*Ophrys insectifera*), Butterfly Orchid (*Platathera chlorantha*) and Dense-flowered Orchid (*Neotinea maculata*) have all been recorded.

Limestone heath is well developed in parts of the uplands where Heather (*Calluna vulgaris*) and Bell Heather (*Erica cinerea*) are common, along with St. John's-wort species (*Hypericum* spp.) and Tormentil (*Potentilla erecta*). Two rare plant species found in this habitat are the Hoary Rock-rose (*Helianthemum canum*) and Pyramidal Bugle (*Ajuga pyramidalis*); both species are listed in the Red Data Book. To the south-east around the western shores of Lough Bunny an interesting alpine heath community occurs. Here Bearberry (*Arctostaphylos uva-ursi*) is found at one of its few inland, lowland locations in the Burren. Juniper scrub is sometimes found associated with areas of heath at this site, with Juniper (*Juniperus communis*) and Crowberry (*Empetrum nigrum*) both found here.

Ballyeigher Loughs complex to the east is a large network of calcareous hardwater lakes and turloughs with associated fen, cut-away bog and calcareous marsh habitats. The complex contains many species of plant and animal that are found in areas of fluctuating water levels. The alkaline fen flora is well developed and large areas of Great Fen-sedge (*Cladium mariscus*) and Black Bog-rush (*Schoenus nigricans*) occur, along with a diverse complement of associated species. Some of the best and most extensive calcareous swamp fen communities in the country occur within this complex and further north-east around the shores of Lough Bunny. Between this lake and the Coole-Garryland turlough complex to the north-east of the site, another area of oligotrophic limestone wetlands occurs. This type of ecosystem is now very rare in Europe and many of the habitats found are listed on Annex I of the E.U. Habitats Directive.

The site has an excellent array of turloughs, with at least eight known examples including those at Carran, Knockaunroe, Lough Mannagh, Castle Lough, Lough Aleenaun, Turloughmore, Tulla and Roo. These turloughs represent some of the best examples of this habitat type found in Ireland and display a wide diversity in trophic status, water fluctuations, water retention and vegetation types. The aquatic plant communities are well developed and the rare, Red Data Book species, Mudwort (*Limosella aquatica*), occurs here. This species is listed in the Flora (Protection) Order, 1999.

Most of the lakes in the southern part of this site are considered examples of hard water lakes, a type listed in Annex II of the E.U. Habitats Directive. These are classic marl lakes, often surrounded by limestone pavement and scrub. They range from extreme oligotrophic types, such as Lough Bunny, to more mesotrophic or even eutrophic systems. Stonewort (*Chara* spp.) beds are common in Lough Inchiquin (and at Lough Bunny), along with pondweeds (*Potamogeton* spp.). *Nitella tenuissima*, a rare species found in calcareous fens, has been recorded in the Ballyeigher Loughs. A

number of other interesting *Chara* species have been recorded from waterbodies in the area.

The River Fergus is the only major overground river within the site. Between Lough Inchiquin and Lough Atedaun the river is slow moving and meanders through an area with wet grassland. Here the water-crowfoot *Ranunculus peltatus-pencillatus* is found, along with the moss *Fontinalis antipyretica*.

The occurrence of petrifying springs at this site is of note. Good examples of this rare habitat type are found at the cliffs at Slieve Carran. Well developed bryophyte and lichen communities are found in association with the springs.

Another uncommon habitat type found at this site is lowland hay meadow. These grasslands typically have a low, open sward dominated by herbs and poor-yield grasses, and are mown rather than grazed. Some common species include Oxeye Daisy (*Leucanthemum vulgare*), Yellow-rattle (*Rhinanthus minor*), eyebrights (*Euphrasia* spp.) and Common Knapweed (*Centaurea nigra*). A well-developed metallophyte plant community, ascribable to the Annex I habitat type Calaminarian Grassland, is present over an area of about 180 m<sup>2</sup> at an old mine site in Shesodonnell (East), with indicator bryophytes *Cephaloziella stellulifera* and *Weissia controversa* var. *densifolia*.

Scrub cover is relatively good in this area of the Burren, with large expanses of Hazel (*Corylus avellana*) intermixed with Spindle (*Euonymus europaeus*), Guelder-rose (*Viburnum opulus*) and Blackthorn (*Prunus spinosa*). An interesting scrub community of Alder Buckthorn (*Frangula alnus*), a Red Data Book species, Buckthorn (*Rhamnus catharticus*) and Shrubby Cinquefoil (*Potentilla fruticosa*), also a Red Data Book species, fringes the shores of some of the lakes and turloughs to the east.

Ballyeighter Wood to the east is an unusual scrub community on limestone, with regenerating oak (*Quercus* sp.) amongst Hazel, Ash (*Fraxinus excelsior*), Holly (*Ilex aquifolium*) and Hawthorn (*Crataegus monogyna*). This is an example of a woodland type that is rare in the Burren region. The eastern edge of Slieve Carran is dominated by steep cliffs and scree slopes over which Ash and Hazel wood is developed. This represents one of the few remaining woodland habitats in the Burren.

A narrow band of alluvial woodland occurs along the karstic stream at the north-east corner of Lough Gortlecka. This is considered to be a unique variant of this uncommon woodland type. The wood is dominated by Hazel, Ash, Wych Elm (*Ulmus glabra*) and Rusty Willow (*Salix cinerea* subsp. *oleifolia*), with Ramsons (*Allium ursinum*) and a variety of other herbs occupying the flooded areas of the woodland floor.

Caves are a feature of this site, with four known natural limestone caves showing a variety of formations and passage types. Vigo Cave has one of the best undisturbed cave entrance facies in Ireland and is considered a valuable karst heritage landform. Glencurrane Cave shows some fine phreatic solution features and one passageway, known as "Crinoid Tower" shows an abundance of crinoids which have been etched

out by splashing water. Gortlecka Cave and a series of small caves above Lough Inchiquin are other fine examples of this habitat.

In the east Burren wetlands Mute Swan and Whooper Swan occur in internationally important concentrations, while Wigeon, Lapwing, Dunlin, Black-tailed Godwit and Goldeneye are also very numerous. Also found in wetlands on the site (e.g. Lough Atedaun, Carran Turlough, Lough Aleenaun, Lough Inchiquin, Lough Bunny, Lough Cullaun, Muckanagh Lough) are Bewick's Swan, Teal, Mallard, Gadwall, Shoveler, Tufted Duck, Curlew, Golden Plover, Coot and Little Grebe. The site also supports a flock of Greenland White-fronted Goose. Several of these species are listed in the Red Data Book and on Annex I of the E.U. Birds Directive.

A nesting pair of Peregrine Falcon, a species listed on Annex I of the E.U. Birds Directive, occur on Glasgeivnagh Hill. The east Burren wetlands are frequented by Sparrowhawk, Kestrel and Hen Harrier, a rare species which is also listed on Annex I of the E.U. Birds Directive. Pine Marten and Otter have been recorded regularly within the site - both are listed in the Red Data Book as they are considered threatened in Europe, the latter also on Annex II of the E.U. Habitats Directive.

The site supports an internationally important population of Lesser Horseshoe Bat, with an estimated 400 individuals. There are two known nursery roosts, a transition roost and four known winter sites, the latter all in natural limestone caves. Pipistrelle and Brown Long-eared Bats also occur. All of these species are listed in the Red Data Book, the former also on Annex II of the E.U. Habitats Directive. The Lesser Horseshoe Bat is a small, delicate bat which is confined to six western counties, Mayo, Galway, Clare, Limerick, Kerry and Cork. It forages close to woodland and at the edges of water. The Irish population of this species is estimated to be about 12,000 individuals and may be the largest national population in Europe. The Pipistrelle Bat is the smallest bat to occur in Ireland and is the commonest and most widespread species. Pipistrelle Bats forage where small insects gather, in gardens, along hedgerows and trees, over ponds and along rivers. The Brown Long-eared Bat is the second most common bat in Ireland and is easily identified by its long ears which are nearly as long as its body. The Brown Long-eared Bat forages in and along woodland where they glean insects off foliage.

The site includes a large population of Marsh Fritillary, a species of butterfly listed on Annex II of the E.U. Habitats Directive. The site also supports the only known populations of Slow Worm (*Anguis fragilis*) in Ireland - this lizard is believed to have been introduced in about 1970. Arctic Char (*Salvelinus alpinus*), a Red Data Book fish species, has been recorded from Lough Inchiquin.

Most of the site is grazed by cattle and sheep, and in some areas, particularly the uplands, by feral goats. Slieve Carran is a Statutory Nature Reserve, while some 750 square km within the region of Mullaghmore makes up the Burren National Park. Clearance and intensification of agriculture has caused damage to some parts of the site. This threatens the heath and scrub communities and may cause eutrophication (nutrient enrichment) of the lakelands to the east. Drainage and land reclamation

have occurred in places around the edges of wetlands, while some marginal fen areas have been afforested. Areas of agriculturally-improved land have been included within the site in order to protect the hydrology and nutrient status of the wetland system.

The East Burren Complex is of international scientific interest owing to the presence of fine examples of typical Burren habitats, together with an oligotrophic wetland complex of lakes, turloughs, fen, cut-over bog and calcareous marsh. The Ballyeigher complex represents an excellent example of a nutrient-poor calcareous lake and fen system, of European significance. Some of the only remaining woodland habitats to be found in the Burren occur within the site. The site contains fourteen habitats that are listed on Annex I of the E.U. Habitats Directive (six of which have priority status) and three species of animal listed on Annex II of this Directive and, as such, is of major conservation significance. The occurrence of many rare plants and animals within the site adds considerably to its scientific and conservation value. The site is of high ornithological interest too, for the internationally and nationally important numbers of waterfowl that use it.