



Site Name: Inisheer Island SAC

Site Code: 001275

Inisheer is the smallest of the three Aran Islands, situated approximately 10 km off the west coast of Co. Clare. The island is a geological extension of the karstic Carboniferous region of the Burren. Upper Carboniferous limestone strata, interleaved with layers of shale and clay, form these exposed islands, which rise to a maximum height of 64 m on Inisheer. The soil cover is thin, with pockets of rendzina between the bare limestone. This naturally-occurring soil has been combined with a mixture of sand and seaweed to form a man-made soil unique to these Islands. The land surface is subdivided into a labyrinth of high stone walls, each one enclosing a small area, typically composed of species-rich calcareous grassland and associated limestone pavement.

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):

[1150] Coastal Lagoons*
[1170] Reefs
[4030] Dry Heath
[6210] Orchid-rich Calcareous Grassland*
[6510] Lowland Hay Meadows
[8240] Limestone Pavement*

Both smooth-blocky and shattered types of limestone pavement types are present at this site, interspersed with a diverse range of associated plant communities including grassland and heath. An interesting maritime influence is evident at the south of the island, where species such as Sea Plantain (*Plantago maritima*), Thrift (*Armeria maritima*) and Rock Samphire (*Crithmum maritimum*) are found on bare pavement.

The species-rich calcareous grasslands hold a number of interesting species, such as Spring Gentian (*Gentiana verna*) and Dense-flowered Orchid (*Neotinea maculata*). Blue Moor-grass (*Sesleria albicans*) is usually the dominant grass species, and Wild Thyme (*Thymus praecox*), Squinancywort (*Asperula cynanchica*), Mountain Everlasting (*Antennaria dioica*) and Mouse-ear Hawkweed (*Hieracium pilosella*) also occurring. In places, the rocky grasslands and pavement support the Red Data Book plant species, Hairy Violet (*Viola hirta*). This species is protected under the Flora (Protection) Order, 1999. Orchid species commonly occurring include Pyramidal Orchid (*Anacamptis pyramidalis*), Early Purple-orchid (*Orchis mascula*), Lesser Twayblade (*Listera ovata*) and Lesser Butterfly-orchid (*Platanthera bifolia*). Occasional species found are

Common Spotted-orchid (*Dactylorhiza fuchsii*), Autumn Lady's-tresses (*Spiranthes spiralis*), Heath Spotted-orchid (*D. maculata*), the marsh-orchid *D. majalis*, Fragrant Orchid (*Gymnadenia conopsea*) and Bee Orchid (*Ophrys apifera*).

Lowland hay meadows are now a rare habitat, both in Ireland and elsewhere. They are generally maintained by traditional land management practices. On Inisheer, the traditional farming practice of Rye cultivation for thatching has maintained some hay meadows, and has thus provided suitable habitat for a number of rare arable weeds. Darnel (*Lolium temulentum*) and Smooth Brome (*Bromus racemosus*), formerly thought to be extinct in Ireland, have recently been recorded on Inisheer. Both species are listed in the Irish Red Data Book. The species-rich meadows at this site support a plant community dominated by grasses, but with many flowering herbs, including Common and Greater Knapweeds (*Centaurea nigra* and *C. scabiosa*), Oxeye Daisy (*Leucanthemum vulgare*), Harebell (*Campanula rotundifolia*), eyebrights (*Euphrasia* spp.) and orchids. In other areas, Wood Sage (*Teucrium scorodonia*) and Blue Moor-grass feature, while Blackthorn (*Prunus spinosa*) and Burnet Rose (*Rosa pimpinellifolia*) are colonising some grasslands.

Dry limestone heath has developed in places, and while small in area, it is generally species-rich. Species such as Heather (*Calluna vulgaris*), Bell Heather (*Erica cinerea*), Purple Moor-grass (*Molinia caerulea*) and Black Bog-rush (*Schoenus nigricans*) are found. Blue Moor-grass, Bloody Crane's-bill (*Geranium sanguineum*), Bracken (*Pteridium aquilinum*), False Oat-grass (*Arrhenatherum elatius*), Tormentil (*Potentilla erecta*) are also found. There are also occasional patches of Juniper (*Juniperus communis*) scrub which occur in mosaic with the heath. The rare Irish Saxifrage (*Saxifraga rosacea*) has also been recorded from this habitat.

Lough More, situated in the east of the island, is an excellent example of a deep (up to 23 m), oligohaline, karstic rock lagoon, a type which is rare in Europe. The lagoon is connected to the sea through underground rock fissures, with limestone cliffs along much of the shoreline. Seawater enters from a karstic tidal pool to the north-east of the lake from which diluted seawater (up to 20 ppt) runs into the lake through limestone pavement. In 1998 the main body of the lake had a uniform salinity of 5 ppt between 1 and 5 m depth, with lower salinity water over parts of the surface (0-3 ppt). The benthic vegetation is uniform, consisting of green algae (*Enteromorpha* spp.) and dense beds of Fennel-leaved Pondweed (*Potamogeton pectinatus*). This vegetation ceases below 2-3 m. No lagoonal plant specialists were found in recent surveys. Immediately below the pondweed community a zone of hard calcareous algal nodules occurs. These nodules are 2-3 cm in diameter and have a superficial similarity to marine coralline algae. They appear to be the product of several species. Marginal vegetation includes small stands of Common Reed (*Phragmites australis*), Grey Club-rush (*Scirpus lacustris* subsp. *tabernaemontani*) and Sea Club-rush (*Scirpus maritimus*). The presence of Saltmarsh Rush (*Juncus gerardi*) is indicative of saltmarsh vegetation. The fauna of the lagoon is poor despite the apparently stable and uniform conditions in the lagoon. This may be due to the 'island effect' and the problems of colonisation and survival on a small offshore island. Only three species

which are considered lagoonal specialists have been recorded: *Sigara concinna* (Order Hemiptera), *Conopeum seurati* (a bryozoan) and *Jaera nordmanni* (Order Isopoda).

A range of coastal habitats occur on the island, including bedrock shores, shingle and sandy beaches, and boulder beaches. The reefs are particularly noteworthy, being listed in the Habitats Directive. At this site they show good zonation of benthic communities of algae and animal species. A highly porous substrate, such as is present here, is generally indicative of a rich and varied algal flora. However, the high wave action at this site reduces the diversity of communities present somewhat.

Several breeding pairs of Chough are present on the island. Arctic Tern, Little Tern and Sandwich Tern also breed here in small numbers. All four species are listed on Annex I of the E.U. Birds Directive. Lough More is of value to birdlife in the area, providing habitat for Grey Heron, Mute Swan and Mallard.

Agricultural intensity is low throughout the island. The majority of the land is used as winterage for cattle, sheep and, in some places, goats. The fields located close to the houses are used for summer grazing. This traditional practice, which is coupled with the general absence of fertilisers, has maintained the species richness and high diversity of the island flora. However, increased tourism on the island is resulting in a gradual move away from farming, in favour of more tourism-related enterprises - a move which may threaten the survival of some species-rich meadows which require regular mowing. Many of the island's habitats and associated wildlife are sensitive to damage resulting from certain forms of agricultural improvement and over-grazing. Removal of sand from dune areas poses a significant threat to those habitats. Future plans to develop the island for tourism and amenity purposes require close monitoring in this sensitive environment.

The island is of major ecological importance due to the quality and floristic richness of limestone pavement, grassland and coastal habitats present. The presence of a number of rare plant species enhances the conservation value of this site, while the island's coastline provides habitat for a number of rare bird species. Traditional farming methods practised on the island are intrinsically linked with its high conservation value. The botanical, historical, archaeological and cultural interest of the island make this an extremely valuable site for educational and scientific purposes.