SITE SYNOPSIS

Site Name: Lisnageeragh Bog and Ballinastack Turlough SAC

Site Code: 000296

Lisnageeragh Bog and Ballinastack Turlough SAC consists of two seperate areas of raised bogs and a small turlough, situated about 3 km north-east of Glenamaddy in Co. Galway. The raised bogs include the main area, Lisnageeragh Bog and cutover, which covers approximately 383.5 ha, and a small section (4.27 ha) of Keeloges Bog NHA (site code 000281), which lies 0.9 km to the south-east. Ballinastack Turlough lies at the north-west end of Lisnageeragh Bog and covers approximately 23.7 ha. The remaining 48.3 ha of the SAC includes wet and dry grassland and conifer plantations developed on the bog margins. The bedrock geology of the site is carboniferous limestone.

Lisnageeragh Bog is a good example of a Western raised bog that forms an irregular plateau blanketing low drumlin hills and hollows. It includes almost 270 ha of uncut raised bog and approximately 117 ha of cutover bog. The SAC section of Keeloges Bog NHA consists of 3.4 ha of high bog and 0.85 ha of cutover in the townland of Ballyhard, which has been restored as part of an EU LIFE project. This area was afforested with conifers in 1969 and was recently clear-felled and the drains blocked in an effort to restore raised bog vegetation. Ballinastack Turlough occupies a topographic depression in the west of the SAC. The turlough merges with the raised bog and cutover bog to its east and south and is transitional to agricultural fields to the north and west. The soils of the turlough are peaty and the vegetation sedge dominated.

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):

[3180] Turloughs*
[7110] Raised Bog (Active)*
[7120] Degraded Raised Bog
[7150] Rhynchosporion Vegetation

Turloughs are temporary lakes, principally filled by groundwater. They are distinctive features of karstic limestone areas and are virtually unique to Ireland with their greatest concentration in counties Clare, Galway and Roscommon. Most flood in the autumn and then dry up between April and July. They are grass- or sedge-dominated habitats, often with areas of fen, marsh or permanent pond. Many turloughs show a distinctive zonation of herbaceous perennials which relates to the depth and duration of flooding.

Active Raised Bog (ARB) comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks. Degraded Raised Bog (DRB) corresponds to those areas of high bog where the hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration to ARB within 30 years. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species: Bog Asphodel (*Narthecium ossifragum*), sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*) and Carnation Sedge (*Carex panicea*).

Lisnageeragh Bog is one of the most extensive raised bogs remaining in east Galway. It is relatively intact with 61% of the original bog still present but the quality of the habitat has been severely impacted by a long history of drainage and peat-cutting. Although peat exploitation on most of the site is minor in recent years, the old face-banks and over 10 km of functional drains on the high bog associated with past cutting continue impacting on the high bog habitats in many areas. Only 29.6 ha of ARB is now present (11% of the remaining high bog) and this is divided into numerous, mostly small, areas. The area of active bog on this site has expanded by 16.6 ha between 1994 and 2012 due to two E.U.-funded restoration projects which blocked drains and felled conifer plantations on the bog. The wettest areas on the bog have well-developed hummock/hollow/pool systems with bog moss (*Sphagnum* species) cover of up to 90% and inter-connecting pools covering over 25% of the bog surface. The bog moss *Sphagnum capillifolium* is the dominant on the hummocks, with occasional *S. austinii, S. fuscum* and *Racomitrium lanuginosum*. Pools are dominated by *S. cuspidatum* with frequent Bogbean (*Menyanthes trifoliata*), Great Sundew (*Drosera anglica*) and occasional *Sphagnum denticulatum*. Lawns are dominated by *S. papillosum* and *S. magellanicum*. The non-pool areas are dominated by Heather (*Calluna vulgaris*) with Bog Asphodel (*Narthecium ossifragum*) and Hare's-tail Cottongrass (*Eriophorum vaginatum*) locally common. The Western raised bog indicator bryophytes *Campylopus atrovirens* and *Pleurozia purpurea* are frequent at low cover throughout the area. The pool areas are loci for Rhynchosporion development and support typical species such as White Beak-sedge, Bogbean, sundews and bog mosses, especially *Sphagnum cuspidatum.* Brown Beak-sedge — a plant which is scarce in Ireland — is abundant in the pool complexes.

The non-active areas of the bog support a raised bog flora, but this is influenced by drainage and thus the frequency of plant species typical of very wet bog conditions is reduced. The typical dominant species in the degraded areas include Heather, Bog Asphodel, Hare's-tail Cottongrass, Deergrass and Carnation Sedge, and any of these species may form mono-dominant stands depending on the degree of peat wetness. The presence of a number of flushes, some of which are dominated by Purple Moor-grass (*Molinia caerulea*), adds to the overall habitat diversity of the high bog.

Associated with the bog, and to the north-east, is an area of wet grassland on heavy clay soil which grades into abandoned and regenerating cutover bog. This area is wet

and rich in bog mosses. There is also an extensive area of cutover bog in the south-west, comprising a mixture of dry banks dominated by Heather, and wet pools.

Ballinastack Turlough, whose winter floodwaters lap at the edge of the raised bog and cutover, has a vegetation dominated by Common Sedge (*Carex nigra*). The natural transition between Ballinastack Turlough and the bog has been altered to some extent by historic turf-cutting and agricultural land use. There is a well-defined zonation of the vegetation which relates to the depth and duration of flooding plus soil type and management. It extends downwards from cutover raised bog, through lightly grazed Purple Moor-grass and rush (*Juncus* spp.) dominated grassland on peat, to a less grazed tall Common Sedge, wet fen and swamp species dominated vegetation on more calcareous peat and finally a more grazed grassy and herb rich sward on silty peat which leads down to the swallow holes which drain the turlough. The sandy, silty soils in the north-west are more heavily used for agriculture and where not fertilised have the usual grass/sedge and herb rich sward typical of the upper edges of turloughs. The co-occurrence of turlough and raised bog is a very rare phenomenon and the maintenance/restoration of transitions between these two priority habitats is of high conservation significance.

The turlough attracts wintering waterfowl, which move between this site and other turloughs in the Glenamaddy area, according to water levels and disturbance. Three species which are listed on Annex I of the E.U. Birds Directive occur - Greenland White-fronted Goose (60-80 average), Whooper Swan (up to 70 in recent winters) and Golden Plover (500-1000+). Wigeon is also regular in winter (up to 500), along with smaller numbers of other waterfowl species (above figures are based on counts carried out in the mid-1990s). Lisnageeragh Bog provides habitat for Red Grouse, a species that has declined in Ireland and is now Red-listed.

Keeloges Bog NHA (a small section of which is included in this SAC) is a remnant of a larger area of bog much of which has now been cutover and reclaimed for forestry and agriculture with only 219 ha (approximately 49%) of high bog remaining. The most recent survey data indicates a small area, 9.8 ha of Active Raised Bog habitat, is present and, based on hydrological modelling, an area of 9.9 ha is considered to be Degraded Raised Bog habitat. There has been a significant amount of turf cutting in the recent past close to the ARB area and some evidence of occasional fires. In the SAC section of the NHA, the Lodgepole Pine (*Pinus contorta*) on the high bog and Sitka Spruce (*Picea sitchensis*) on the cutover were clear-felled and the drains blocked in 2014/2015. The recolonization of the bog surface by more typical bog species is at an early stage and the vegetation cover is generally less than 30%. Presently, there does not appear to be any areas of peat-forming vegetation developing, which may result from a combination of the relatively steep surface slopes, the shallow peat depth of <1.0 m, the small size of the restoration area and the continued presence of boundary drains. It is likely that much of the area will develop into dry bog vegetation dominated by Purple Moor-grass and Ling Heather within 10 years. Although the chances of wet bog vegetation developing in this area are limited, it is important to keep the area as wet as possible to support the hydrology of the adjacent open bog areas. There are deep drains between the SAC and open high bog

in the NHA which will need to be blocked, in consultation with other stakeholders, before the ARB and DRB in the NHA and the high bog in the SAC can benefit from the restoration measures.

A draft restoration plan has been developed for Lisnageeragh Bog for ARB habitat to help meet the national conservation objectives for raised bogs. In summary, one of the key objectives of the plan is to restore the area of ARB to 58.8 ha. The area of ARB was reported as 29.6 ha during the latest monitoring survey (2012) and it has been determined that there is potential for 26.6 ha of Degraded Raised Bog (DRB) to be restored to ARB on the high bog following restoration measures. There is also long-term potential for 2.6 ha of bog peat-forming habitats (BPFH) to develop if restoration measures are undertaken on cutover areas. The main restoration actions proposed are the completion of drain blocking on the high bog and an extensive program of drain blocking on the cutover. Several targets have been set for other attributes relating to the quality and condition of ARB habitat, including a target to restore adequate transitional areas to support/protect the active raised bog and the ecosystem services it provides.

Such detailed objectives have yet to be developed for the Keeloges Bog subsite of the SAC but will be produced as part of the restoration plan for the Keeloges Bog NHA site. Current information suggests that while raised bog vegetation will be restored to some of the site the current area restored is too small to support ARB. The drain blocking on the high bog and cutover will reduce the impact of drainage on the ecology of this section of Keeloges Bog and may, in the long term, help support the eventual restoration of some of the Degraded Raised Bog habitat on the open high bog in the NHA to ARB. The SAC section of Keeloges Bog is being actively managed for conservation by the landowner, Coillte, as part of an EU LIFE Project and most of the required restoration measures have already been carried out. An After LIFE management plan is being developed by Coillte for the future conservation management of that part of the SAC.

Lisnageeragh Bog and Ballinastack Turlough SAC is a large, composite site, which contains good examples of the priority Annex 1 habitats Active Raised Bog and Turlough, along with the non-priority habitats Degraded Raised Bog and Depressions on peat substrates of the Rhynchosporion. Raised bog is a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. Ireland has a high proportion of the total E.U. resource of Atlantic raised bog (over 50%) and so has a special responsibility for its conservation at an international level. Lisnageeragh Bog is one of the most extensive remaining in east Galway and the quality of the habitat is generally good despite a long history of drainage and peat-cutting. The site already supports a significant area of high quality raised bog microhabitats, including some very well developed hummock/hollow complexes and has a large area with the potential for restoration to ARB. Although the turlough area is rather small, it is unusual in that it lies adjacent to a raised bog, which requires very different hydrological conditions to develop. This makes the transition between the two ecosystems extremely rare and of high ecological value.

The turlough attracts wintering waterfowl, three species of which are listed on Annex I of the E.U. Birds Directive - Greenland White-fronted Goose, Whooper Swan and Golden Plover, In addition, Lisnageeragh Bog supports a population of Red Grouse, a species that has declined in Ireland and is now Red-listed.