Site Name: River Moy SAC

Site Code: 002298

This site comprises almost the entire freshwater element of the River Moy and its tributaries including both Loughs Conn and Cullin. The system drains a catchment area of 805 sq. km. Most of the site is in Co. Mayo, though parts are in west Sligo and north Roscommon. Apart from the Moy itself, other rivers included within the site are the Deel, Bar Deela, Castlehill, Addergoole, Clydagh and Manulla on the west side, and the Glenree, Yellow, Strade, Gweestion, Sonnagh, Mullaghanoe, Owengarve, Eighnagh and Owenaher on the east side. The underlying geology is Carboniferous Limestone for the most part, though Carboniferous Sandstone is present at the extreme west of the site, with Dalradian Quartzites and schists at the south-west. Some of the tributaries at the east, the south of Lough Conn and all of Lough Cullin are underlain by granite. There are many towns adjacent to but not within the site. These include Ballina, Crossmolina, Foxford, Swinford, Kiltimagh and Charlestown.

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):

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>7110</td>
<td>Raised Bog (Active)*</td>
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<tr>
<td>7120</td>
<td>Degraded Raised Bog</td>
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<tr>
<td>7150</td>
<td>Rhynchosporion Vegetation</td>
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<tr>
<td>7230</td>
<td>Alkaline Fens</td>
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<tr>
<td>91A0</td>
<td>Old Oak Woodlands</td>
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<tr>
<td>91E0</td>
<td>Alluvial Forests*</td>
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<tr>
<td>1092</td>
<td>White-clawed Crayfish (<em>Austropotamobius pallipes</em>)</td>
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<tr>
<td>1095</td>
<td>Sea Lamprey (<em>Petromyzon marinus</em>)</td>
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<tr>
<td>1096</td>
<td>Brook Lamprey (<em>Lampetra planeri</em>)</td>
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<tr>
<td>1106</td>
<td>Atlantic Salmon (<em>Salmo salar</em>)</td>
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<tr>
<td>1355</td>
<td>Otter (<em>Lutra lutra</em>)</td>
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On the slopes and rising ground around the southern shores of Loughs Conn and Cullin, oak woodlands are found. Sessile Oak (*Quercus petraea*) is the dominant tree species, with an understorey of Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Downy Birch (*Betula pubescens*), with some Ash (*Fraxinus excelsior*). Additional species are associated with the lakeshore such as Rock Whitebeam (*Sorbus rupicola*), Aspen (*Populus tremula*), Silver Birch (*B. pendula*) and the shrubs Guelder-rose.
(Viburnum opulus), Buckthorn (Rhamnus catharticus) and Spindle (Euonymus europaeus). The ground flora is usually composed of Bilberry (Vaccinium myrtillus), Great Wood-rush (Luzula sylvatica), Wood-sorrel (Oxalis acetosella), buckler-ferns (Dryopteris aemula and D. dilatata), Hard Fern (Blechnum spicant), Common Cow-wheat (Melampyrum pratense) and Bracken (Pteridium aquilinum). The rare Narrow-leaved Helleborine (Cephalanthera longifolia), protected under the Flora (Protection) Order, 1999, occurs in association with the woodlands. Also found in these woodlands is the snail Spermodea lamellata, a species associated with old natural woodlands.

Alluvial woodland occurs at several locations along the shores of the lakes but is particularly well developed along the river at Coryosla Bridge. Principal tree species are willows (including Salix cinerea subsp. oleifolia) and Alder (Alnus glutinosa). Herbaceous species include Royal Fern (Osmunda regalis), Meadowsweet (Filipendula ulmaria) and Reed Canary-grass (Phalaris arundinacea). The woods are flooded by seasonal fluctuations in lake level.

On higher ground adjacent to the woodlands is blanket bog with scattered shrubs and trees on the drier areas. The rocky knolls often bear Juniper (Juniperus communis) or Gorse (Ulex europaeus), with some unusual rare herb species such as Intermediate Wintergreen (Pyrola media) and Lesser Twayblade (Listera cordata).

Within the site are a number of raised bogs including those at Kilgarriff, Gowlaun, Derrynabrock, Tawnaghbeg and Cloongoonagh. These are examples of raised bogs at the north-western edge of the spectrum and possess many of the species typical of such in Ireland, including an abundance of Bog Asphodel (Narthecium ossifragum), Carnation Sedge (Carex panicea) and the moss Campylopus atrovirens. Some of the bogs include significant areas of active raised bog habitat. Well developed pool and hummock systems with quaking mats of bog mosses (Sphagnum spp.), Bog Asphodel and White Beaked-sedge (Rhynchospora alba) are present. Many of the pools contain a diversity of plant species, including Bogbean (Menyanthes trifoliata), the bog moss Sphagnum cuspidatum, Campylopus atrovirens, Common Cottongrass (Eriophorum angustifolium), Great Sundew (Drosera anglica) and occasional Lesser Bladderwort (Utricularia minor). Several of the hummock-forming mosses (Sphagnum fuscum and S. imbricatum) which occur here are quite rare in this region and add to the scientific interest of the bogs within the overall site.

Depressions on the bogs, pool edges and erosion channels, where the vegetation is dominated by White Beaked-sedge comprise the habitat ‘Rhynchosporion vegetation’. Associated species in this habitat at the site include Bog Asphodel, sundews, Deergrass (Scirpus cespitosus) and Carnation Sedge.

Degraded raised bog is present where the hydrology of the uncut bogs has been affected by peat cutting and other land use activities in the surrounding area, such as afforestation and associated drainage, and also the Moy arterial drainage. Species typical of the active raised bog habitat may still be present but the relative abundances differ. A typical example of the degraded habitat, where drying has
occurred at the edge of the high bog, contains an abundance and more uniform cover
of Heather (Calluna vulgaris), Carnation Sedge, Deergrass and sometimes Bog-myrtle
(Myrica gale). Occurring in association with the uncut high bog are areas of wet
regenerating cutover bog with species such as Common Cottongrass, bog mosses
and sundew, while on the drier areas, the vegetation is mostly dominated by Purple
Moor-grass (Molinia caerulea). Natural regeneration with peat-forming capability will
be possible over time with some restorative measures.

Alkaline fen is considered to be well developed within the site. An extensive stand
occurs as part of a wetland complex at Mannin and Island Lakes on the Glore River.
Key diagnostic species of the Schoenus association characteristic of rich fens include
the bryophytes Campylium stellatum, Aneura pinguis and Scorpidium scorpioideus, and
the herbaceous species Long-stalked Yellow-sedge (Carex lepidocarpa), Grass-of-
parnassus (Parnassia palustris) and Common Butterwort (Pinguicula vulgaris). Other
fen species include Black Bog-rush (Schoenus nigricans), Purple Moor-grass, Marsh
Helleborine (Epipactis palustris), Meadow Thistle (Cirsium dissectum) and Blunt-
flowered Rush (Juncus subnodulosus). The rare moss Bryum uliginosum occurs on
exposed marl at a ditch to the east of Island Lake.

The open water of Loughs Conn and Cullin is moderately hard with relatively low
colour and good transparency. The phytoplankton of the lake is dominated by
diatoms and blue-green algae and there is evidence that the latter group is more
common now than in former years. This indicates that nutrient inflow is occurring.
The changes in Lough Conn appear to represent an early phase in the eutrophication
process. Stoneworts still present include Chara aspera, C. delicatula and Nitella cf.
opaca. Other plants found in the shallower portions include pondweed species
(Potamogeton spp.). Where there is a peat influence Intermediate Bladderwort
(Utricularia intermedia) is characteristic, while Water Lobelia (Lobelia dortmanna) often
grows in sand. Narrow reedbeds and patches of Yellow Water-lily (Nuphar lutea)
occur in some of the bays.

Drainage of the Moy in the 1960s lowered the level of the lakes, exposing wide areas
of stony shoreline and wet grassland, which are liable to flooding in winter. This
increased the habitat diversity of the shoreline and created a number of marginal
wetlands, including fens and marshes. Plant species of note in the lake-margin
include Heath Cudweed (Omalotheca sylvatica), Great Burnet (Sanguisorba officinalis)
and Irish Lady’s-tresses (Spiranthes romanzoffiana). These three species are listed on
the Irish Red Data list and are protected under the Flora (Protection) Order, 1999.

Other habitats present within the site include wet grassland dominated by rushes
(Juncus spp.) grading into species-rich marsh in which sedges are common. Among
the other species found in this habitat are Yellow Iris (Iris pseudacorus), Water Mint
(Mentha aquatica), Purple Loosestrife (Lythrum salicaria) and Soft Rush (Juncus effusus).

Rusty Willow (Salix cinerea subsp. oleifolia) scrub and pockets of wet woodland
dominated by Alder (Alnus glutinosa) have become established in places throughout
the site. Ash (Fraxinus excelsior) and Downy Birch (Betula pubescens) are common in
the latter and the ground flora is typical of wet woodland with Meadowsweet (Filipendula ulmaria), Wild Angelica (Angelica sylvestris), Yellow Iris, horsetails (Equisetum spp.) and occasional tussocks of Greater Tussock-sedge (Carex paniculata).

Small pockets of conifer plantation, close to the lakes and along the strip both sides of the rivers, are included in the site.

The Moy system is one of Ireland’s premier salmon waters and it also encompasses two of Ireland’s best lake trout fisheries in Loughs Conn and Cullin. Although the Atlantic Salmon (Salmo salar) is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the E.U. Habitats Directive. The Moy is a most productive catchment in salmon terms and this can be attributed to its being a fingered system with a multiplicity of 1st to 5th order tributaries which are large enough to support salmonids < 2 years of age while at the same time being too small to support significant adult trout numbers and are therefore highly productive in salmonid nursery terms.

Salmon run the Moy every month of the year. Both multi-sea-winter fish and grilse are present. The salmon fishing season is 1st February to 30th September. The peak of the spring fishing is in April and the grilse begin running in early May. The average weight of the spring fish is 9 lb and the grilse range from about 3-7 lb. In general spring fish are found more frequently in the rivers at the western extent of the Moy system.

The Arctic Char (Salvelinus alpinus), an interesting relict species from the last ice age, which is listed as threatened in the Irish Red Data Book has been recorded from Lough Conn and in only a few other lakes in Ireland. The latest reports suggest that it may now have disappeared from the site.

The site is also important for the presence of four other species listed on Annex II of the E.U. Habitats Directive, namely Sea Lamprey, Brook Lamprey, Otter and White-clawed Crayfish. The Sea Lamprey is regularly encountered in the lower stretches of the river around Ballina, while the Otter and White-clawed Crayfish are widespread throughout the system. In addition, the site also supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger, Irish Hare and Daubenton’s Bat. Common Frog, another Red Data Book species, also occurs within the site.

Loughs Conn and Cullin support important concentrations of wintering waterfowl and both are designated Special Protection Areas (SPAs). A nationally important population of the Annex I species Greenland White-fronted Goose (average 113 over 6 winters 1994/95 to 1999/00) is centred on Lough Conn. Whooper Swans also occur (numbers range between 25 to 50), along with nationally important populations of Tufted Duck 635, Goldeneye 189 and Coot 464. A range of other species occur on the lakes in regionally important concentrations, notably Wigeon 303, Teal 154, Mallard 225, Pochard 182, Lapwing >1,000 and Curlew 464. Golden Plover also frequent the lakes, with numbers ranging between 700 and 1,000.
Loughs Conn and Cullin are one of the few breeding sites for Common Scoter in Ireland. Breeding has occurred on Lough Conn since about the 1940s when about 20-30 pairs were known. A census in 1983 recorded 29 pairs. Breeding was first proved on Lough Cullin in 1983 when 24 pairs were recorded. In 1995, 24-26 pairs were recorded at Lough Conn and 5 pairs at Lough Cullin. The latest survey in 1999 gives a total of 30 birds for both lakes, comprising only 5 pairs, 18 unpaired males and 2 unpaired females. The reason for the decline is not known but may be due to predation by mink, possible changes in food supply and/or redistribution to other sites. The Common Scoter is a Red Listed species.

Agriculture, with particular emphasis on grazing, is the main land use along the Moy. Much of the grassland is unimproved but improved grassland and silage fields are also present. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the large lakes. Fishing is the main tourist attraction on the Moy and there are a large number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. The North Western Regional Fishery Board have erected fencing along selected stretches of the river as part of their salmonid enhancement programme. Other aspects of tourism are concentrated around Loughs Conn and Cullin.

Afforestation has occurred in the past around the shores of Loughs Conn and Cullin. The coniferous trees are due for harvesting shortly. It is proposed to replant with native tree species in this area. Forestry is also present along many of the tributaries and in particular along the headwaters of the Deel. Forestry poses a threat in that sedimentation and acidification can occur. Sedimentation can cover the gravel beds resulting in a loss of suitable spawning grounds. The Moy was arterially dredged in the 1960s. Water levels have been reduced since that time. This is particularly evident along the shores of Loughs Conn and Cullin and in the canal-like appearance of some river stretches. Ongoing maintenance dredging is carried out along stretches of the river system where the gradient is low. This is extremely destructive to salmonid habitat in the area.

The site supports populations of several species listed on Annex II of the E.U. Habitats Directive, and habitats listed on Annex I of this Directive, as well as examples of other important habitats. The presence of a fine example of broadleaved woodland in this part of the country increases the overall habitat diversity and adds to the ecological value of the site, as does the presence of the range of nationally rare and Red Data Book plant and animal species.