



Results

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1. A local Biodiversity Action Plan

Biodiversity Action Plans look at what species and habitats are in an area, why that is important for the area and the threats to those habitats. To move forward, the plan must include what actions are needed. It is then worth attempting to identify who is going to carry out the actions, in what timeframe, as well as what resources are needed to carry out the plan. It is also essential to note who can advise.

A Local Biodiversity Action Plan means we learn more about nature in our area, value nature in our area more and conserve and enhance nature in our area more. In some cases, it may mean that very little is to be actively changed in the environment. It is important not to harm biodiversity in a mistaken attempt to improve things.

2. Irish Habitats

Habitats are the basic building blocks of the environment that are inhabited by animals and plants, and which are important as units for site description and conservation management. A habitat is described as the area in which an organism or group of organisms lives, and is defined by the living (biotic) and non-living (abiotic) components of the environment. The latter includes physical, chemical and geographical factors, in addition to human impact or management. Habitats are recorded, described and mapped for a variety of different reasons. It is important, therefore, that a standard approach is used when recording habitat information. (Fossit, n.d.)

So that there is a common understanding of different habitat types to be found in Ireland a book called *A Guide to Habitats in Ireland* was commissioned by the Heritage Council of Ireland and was released in 2000. A number of experts from different fields contributed to the book, however the text was compiled by Julie A. Fossit. *A Guide to Habitats in Ireland* is often referred to as 'The Fossit Guide' or simply 'Fossit'.

3. St. Hugh's Well and Sweat House (Tobar Bheo-Aoidh)

3.1. About

St. Hugh's Well (Tobar Bheo-Aoidh) and the Sweathouse are located in the townlands of Cleighran beg and Cleighran more (the town land names derive from meaning stony). Public access to this area is traditional because of St Hugh's Well (St Bheo-Aoidh of Ardcar). It is registered in the Archaeological inventory, ref. LE020-004---- (national monument service, 2008). There is also an old route passing the well which is now developed as part of the Leitrim Way. A small carpark and picnic benches have been installed. There is an information sign about the Leitrim Way. The area is recognised for cultural and archaeological significance, but now needs recognition of the local biodiversity.

3.2. Ecological assessment

The eroding stream

Stream of Tobar Bheo-Aoidh River is classified as of high-water quality status on EPA maps. The EPA also state this water body is in need of review. There has clearly been issues with erosion and measures taken to support the road. At the time of visit there was bare soil along stream and exactly how much was erosion and mechanical earth moving was unclear. Bare soil allows silt and nutrients into stream.

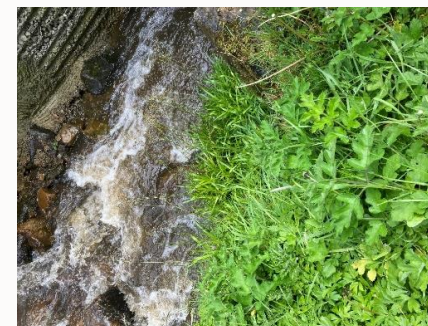


Figure 1. Concrete wall to protect the road. Bluebells and wood anemone near side.



Figure 2. Bare soil along the stream

The stream is supporting breeding, grey wagtail, a bird of conservation concern. This bird will nest in wall cavities. On the other hand, the site has Indian Balsam growing. This is an invasive species which increases risk of erosion of stream banks.



Figure 3. Himalayan Balsa. Early stage before flowering, ideal for control.

Seminatural woodland

A review of the 1840 s first edition ordinance maps reveals there was small pockets of woodland present in this site over 180 years ago.

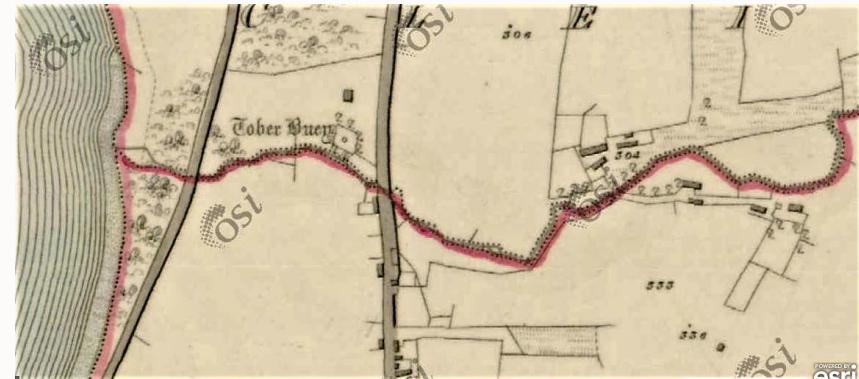


Figure 4. First edition map with St. Hugh's well marked (Tober Buey).

The ground flora, species such as wood anemone and bluebells also indicate long established woodland. The oak trees have an understorey of holly. Some of this area has been under woodland for a long time, therefore the ecological community of invertebrates and microfauna is likely to be richer and worth maintaining.



Figure 5. Wood anemone plants in woodland. Bluebell flowers and fox glove leaves.



These ideas are elaborated in *A provisional inventory of ancient and long-established woodland in Ireland*:

All native woodland in Ireland is of conservation importance due to the small national resource estimated to cover only 1-2% of the country (Perrin et al. 2008). However, woodlands with a long history are of particular importance for a variety of reasons, not least that these potential links with the prehistoric wildwood are by their very nature irreplaceable. Veteran trees provide valuable niches within the woodland environment (e.g. fissured bark and decay holes) and are particularly important for saproxylic species. In particular it has been widely recognised that woodlands with a long history of woodland cover exhibit a more diverse complement of plant and animal species than woodlands of recent origin, and hence are considered to be of higher conservation value. Species which are strongly associated with these woodlands are referred to as ancient woodland indicators. Long-Established Woodland (l) is defined as woodland that has remained continuously wooded since the first edition OS maps of 1830-44, but for which no positive evidence of antiquity has been found in older documentation. These woodlands may however have ancient origins.

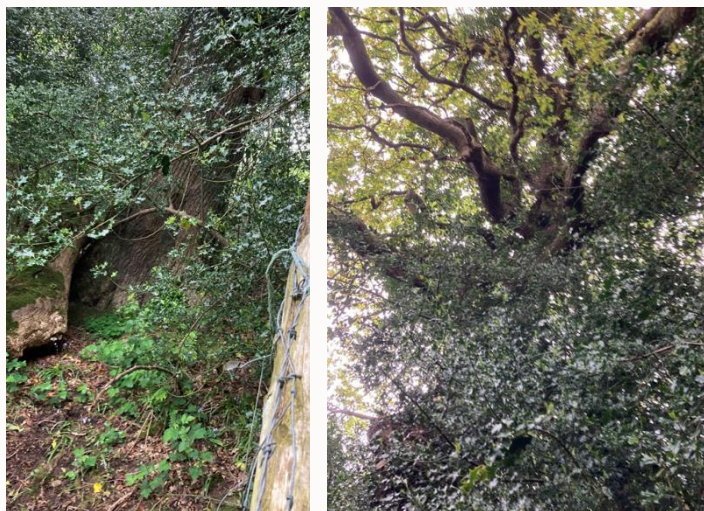


Figure 6. Large oak tree and Oak Canopy

A moth trap run on 5th June 2022 produced May High Flier Moth, a specialist feeder on alder trees. This species is poorly recorded in this area of Leitrim. these waterside woodlands are only native woodlands remaining in these landscapes, and therefore, the last refuge for woodland species.



Figure 7. High flier moth.

The woodland also benefits the stream water quality. Native woodland soils can be 11-20 times more permeable than pasture soils, thus influencing water held by soils. Woodlands also reduce the risk of flooding, reduce river pollution, lock up carbon and connect fragmented wildlife habitats.

The creation woodlands in upland areas buffer flood flows when they mature, thereby slowing flows down. Large woody debris which falls into gully streams act as barriers that also reduce energetic flows. Trees and woodland alongside streams and rivers can reduce erosion by alleviating or reducing bank undercutting and preventing subsequent collapse. Tree and shrub roots also bind soils on steep slopes, thereby protecting them from erosion. In addition, the creation of upland woodlands act as a robust buffer between heavy storm rainfall and the ground surface. Trees intercept a large proportion of incoming precipitation. *Native riparian woodlands* also provide temporary storage and protect soils from erosion.

Seminal grassland

The grass is maintained as short grass for amenity by mowing regularly. It however contains a good range of wildflowers such as marsh bedstraw and spotted orchid.



Figure 8. Himalayan Balsam in flower and mown grass.

Stone structures and Banks (BL1)

These are important in the biodiversity of this site. These are habitat for species such as navelwort, mosses and lichens. In addition, the dry-stone walls and banks provide habitat for invertebrates including overwintering and nesting. This provide nesting sites for grey wagtail , bird of conservation concern.

4. Fahey townland

4.1. Overview

This townland is bordered to the West by Lough Allen, to the East by lough Yugan and the townland of Corglass. It contains the historic Fahey graveyard (LE018-044002).

4.2. Ecological appraisal

Lowland bog

In the town lands of Fahy and Corglass, an area of 45 ha is on peat soils. A lot of this is grazed wet grassland, but 6 ha of this is fenced off un-grazed bogland. This is a cut- over area, of fen peats, Fossitt habitat PB4 with numerous banks and bog holes. The dominating vegetation is Bog Myrtle, Heather, Molinia grass and Cross-leaved heath. The wet bog holes contain Bog Bean and Potamogeton, pond weed, marsh cinquefoil and water horsetail. Many areas of cotton grass, bog asphodel and sedges.



Figure 9. Cutover bog, Fahey.



Figure 10. Soldier beetle (*Cantharis flavilabris*) and Cranefly (*Tipula coukey*)



The ground is difficult to traverse. Insects observed included brown hawker dragonfly, soldier beetles and crane fly. The site is included in desk study of [Leitrim wetlands](#), and was indicated as “unknown value – Survey required” by the [County Leitrim Wetland Survey 2019](#).

Wet grassland

This is acid grassland, in the wetter bits with sphagnum moss, bog asphodel, common valerian, milk wort, marsh pennywort, angelica, flag iris, marsh violet and marsh speedwell.



Figure 11. Marsh Cinquefoil and Marsh Violets (left), Heath Orchid (centre) and quaking grass (right)

The grassland is dominated by rush, *Juncus effusus* and *Juncus acutiflorus*. There are banks of grassland with less dominated by rushes, with devils bit scabious, quaking grass, great birds-foot trefoil, and heath orchids.

Woodland

The woodland along the shore is listed as pNHA (lough Allen Lough Allen, South End and Parts NPWS Code 000427). Some of this is fenced off from grazers some not.

The level of lough Allen has been the subject of civil engineering projects for a couple of centuries and remains influenced by man-made structures, a topic of debate and newspaper ink.

The flora of these woodlands and the lough shore is thus influenced by both the rainfall and human activity. Looking at the 25inch OS maps (completed early years of 20th century) it looks like these areas were not regarded as woodland, but marked as large stones, which are still there. In other areas, such as south of Fahy graveyard, the shoreline is clearly marked, sand.

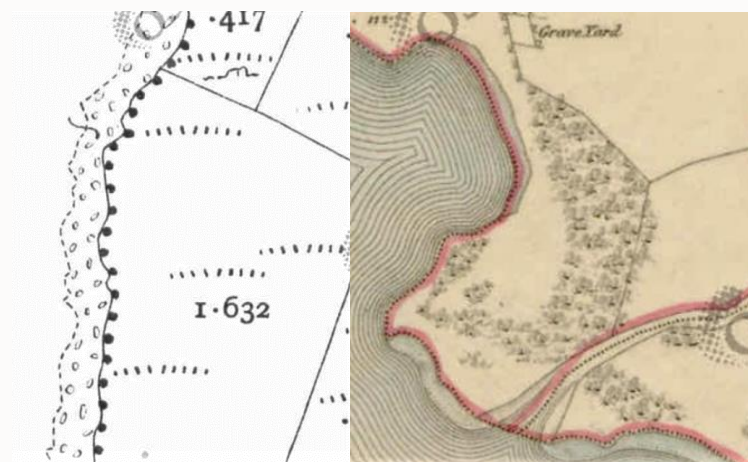


Figure 12. 26-inch map with shoreline, boulders dotted as small circles(right). Woodland marked on circa 1840, 6-inch map (left)

Thus, this natural woodland probably developed in the twentieth century in steeper areas that would have been difficult to travel on because of boulders and hence graze. There is no evidence to regard the NHA woodland as long established. There is very little woodland marked on either the 25 inch or the six-inch maps, apart from that near the Yellow River, south of the graveyard, which is present on the 1840s map.

The woodland contains interesting species such as aspen and black poplar, violets, wood-avens, royal fern, water dropwort, and also invasives such as crocosmia.



Figure 13. Black poplar tree, also notice boulder topography (right). Crocosmia plants in pNHA woodland (left).



Figure 14. Brown Chafer (*Serica brunnea*) from lake shore area, a beetle poorly recorded. Seems to be no records in Leitrim.

Lough shore

The shore of lough Allen in this area is diverse, with, lacustrine sediments, sandy, muddy and stoney shores. The marginal zone is known to be especially diverse and can be rich in invertebrates

The lough shore of Lough Allen is known to contains rare plants such as Irish Ladies tresses orchid. This was not located in this survey but is recorded in this tetrad (2km²) and could be in grassland away from lake also.



Figure 15. Stony shore (Right), and sandy shore (left).

The shore has valuable species such as knotted pearlwort, spring quillwort, juncus filiformis, and common spike rush. Further back from the shore the grassland plants include; birds foot trefoil, tormentil, sheep sorrel, yarrow, tufted vetch, cats ear, self-heal, sneezewort and eyebright.



Figure 16. Knotted pearlwort (right) and Quillwort (left).



Figure 17. Yellow river first edition map OS 1840s.

The gravel shoals are habitats in themselves, being dynamic and changing with the river. They form a home to groups of invertebrates that are adapted to these situations. These are feeding and, in some cases, breeding areas for Common Sandpiper. Common Sandpiper is a summer migrant and was known to breed in the area (Per com John Matthews NPWS). The bird was not seen on this survey. It is listed as of **amber status** indicating a species in decline.

5. Yellow River (Abhain Buí) Habitats

5.1. The river

This river is a very important habitat. It has an extensive catchment up into the Playbank mountains EPA (EPA, n.d.) . Consequently, the behaviour of this river is greatly influenced by land management upstream, such as drainage and bogland management. Only the lowland section was visited in this survey. It is an eroding upland river Fossitt FW1. The hydro-morphology has changed from the **1840s first edition map**, and the river now appears less structurally complicated. However, it still has gravel shoals, earth banks and areas that flood.



Figure 18. Yellow river, summer 2022 (Tullyveacan townland) (right). Gravel and pebble shoal (left).

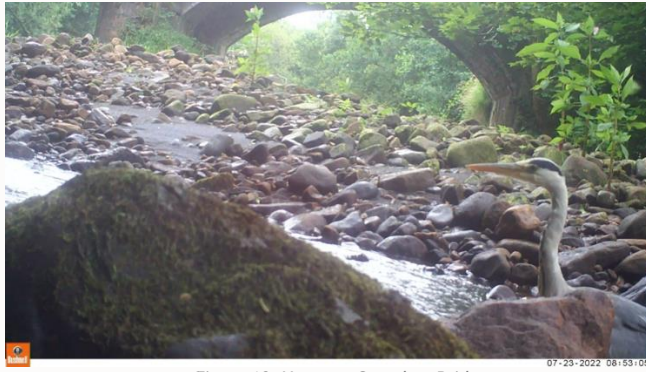


Figure 19. Heron at Owenboy Bridge.

Kingfisher and heron was observed during this survey. The clay steep banks of bends in rivers are the nesting habitat of Kingfishers and sandmartin.



Figure 20. Clay bank in the left, typical kingfisher nesting habitat.

The EPA classifies the river as of **good status**. This work is done by EPA, Leitrim Co. Council and other agencies by macro invertebrate sampling in the river. It is also considered not to be at risk of meeting the status required in the current plans.

(This contrasts with the stream in Ballinagleragh Village which is classified of moderate status and high risk of not meeting targets).

5.2. Built structure habitat (BL1)

The Abhainn Buí Bridge (Owenboy bridge) is north of Ballinagleragh Community Hall. Bridges are roosting habitats for bats. Data from bat conservation Ireland suggests that 38% of bridges in Leitrim may have bats present. A review of **NBDC maps** reveal Daubenton bat (a species associated with waterways). No additional bat data was obtained in this work.



Figure 21. Owenboy bridge (right). Wood sage (left)..

However, bridges as habitats cannot be over emphasized. In addition, bridges can provide nesting sites for birds such as dippers, sand-martins and grey wagtail. Bridges provide habitat for overwintering invertebrates, and growth substrate for lichens. Owen boy bridge has wood sage growing in it.



5.3. Woodland habitat

Tree species include birch, Alder, willow, hazel. There is a woodland ground flora dominated by woodrush, also wood-avens, violet, enchanters' night shade, wood speedwell. However, there is a prolific growth of the invasive species Himalayan Balsam.



Figure 22. Himalayan balsam in Yellow River shores, Tullyveacan (right) and Woodrush and violets (left).

Woodland is a natural wild corridor connecting species, providing feeding for bats and birds. This ecological connectivity is very important for maintaining a biodiverse landscape.

The impact of woodland on water quality is vital. This is because of the role in capturing nutrients and silt which run off from adjacent lands. Sediment and silt trapping is enabled by slowing the overland flow of water, allowing infiltration and “filtering” through vegetation before entry into the aquatic zone. This function is particularly relevant as it significantly reduces sediment entry which could otherwise cause serious damage to instream biodiversity, including fish.

It is now recognised by ecologists and hydrologists that woody debris in rivers and logs jams have a role. This is the creation of microhabitats for invertebrates and absorb energy of flood waters. This complicates the structure of the river and makes more habitats for invertebrates, (May flies, stoneflies, caddis flies) and habitats for fish.



Figure 23. Yellow River and Owenboy bridge

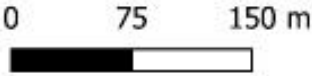


6. Habitat maps of the surveyed areas

6.1. St. Hugh's Well and Sweathouse

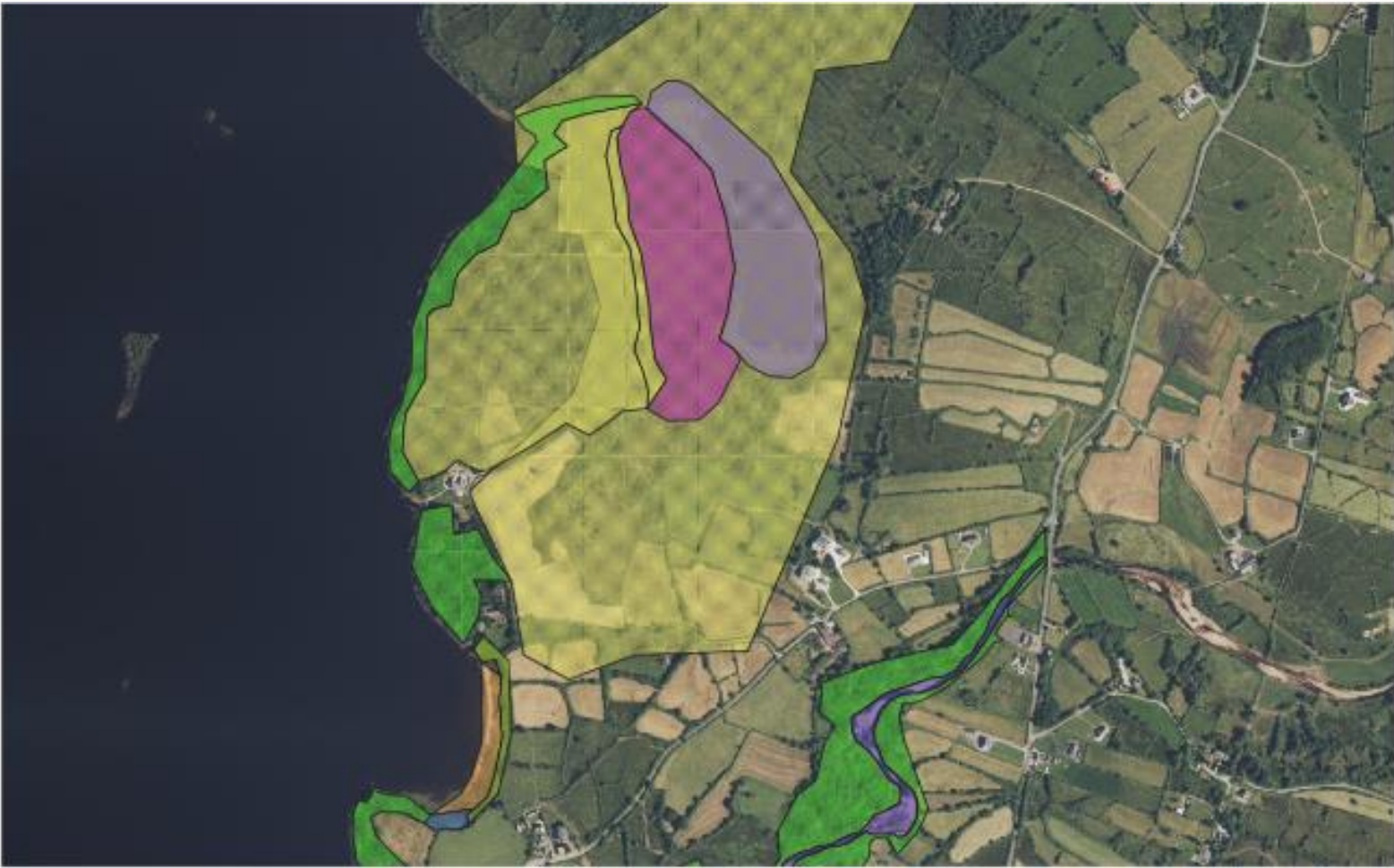


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- habitats
- GS4
- WN1
- Bing Satellite





6.2. Fahey townland



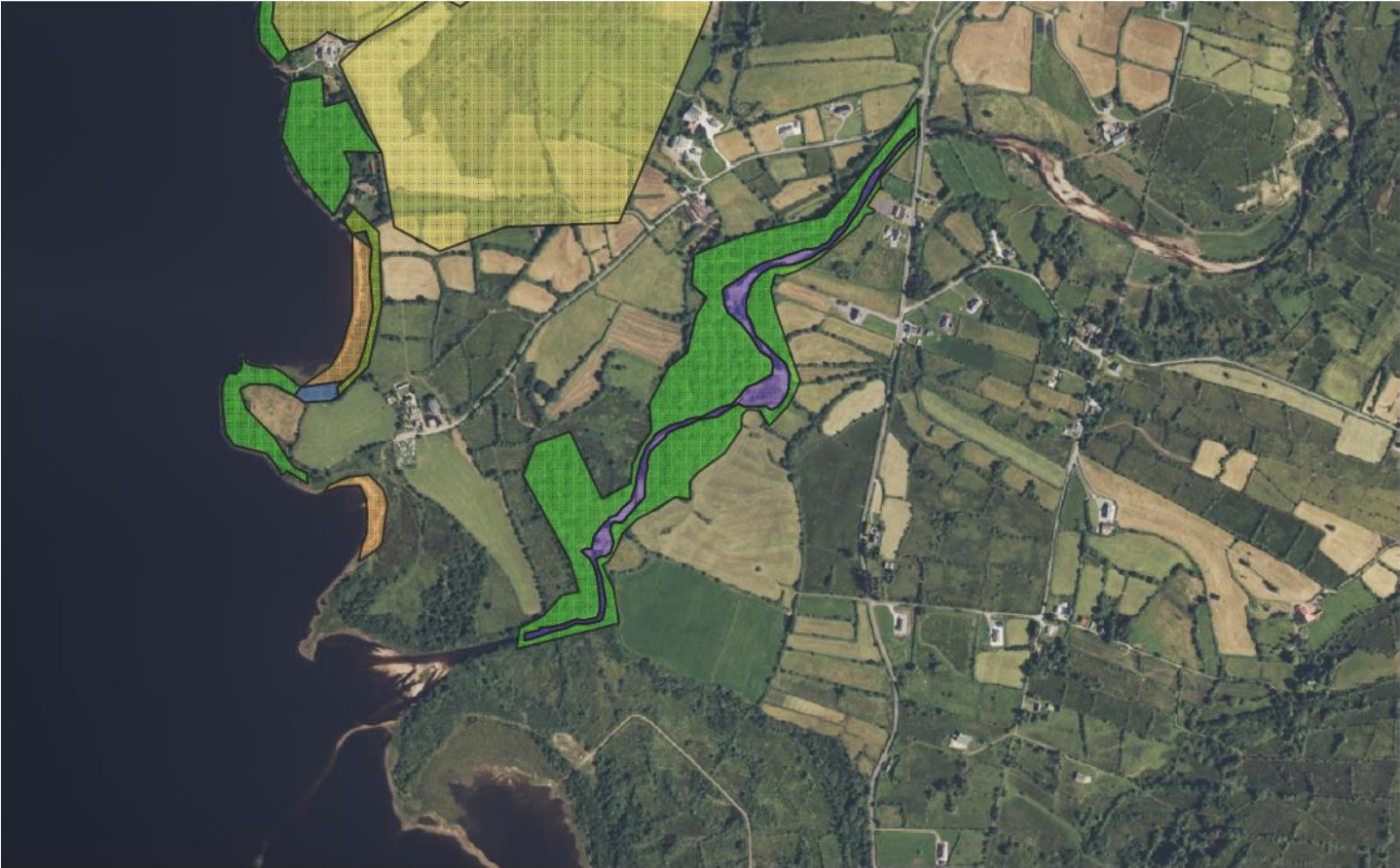
- habitats
- ED1
 - FL4
 - FW1
 - GS3
 - GS4
 - PB4
 - WN5
 - WS1
- Bing Satellite

0 100 200 m





6.3. Yellow River



- habitats
-  ED1
 -  FW1
 -  GS3
 -  GS4
 -  WN5
 -  WS1
- Bing Satellite





6.4. Habitats codification (Fossit)

The habitat's codes and descriptions are direct quotations from *A guide to habitats in Ireland* by Julie A. Fossit (alphabetical order).

ED1 – Exposed sand, gravel or till (p. 63)

This category includes natural or artificial exposures of unconsolidated coarse or mixed sediment. Sand and gravel are mostly made up of sediment particles that are less than 16 mm in diameter (see Table 2, page 80). Till, or boulder clay, is an unsorted mixture of pebbles, cobbles or boulders in a matrix of finer material such as sand, silt or clay. Most exposures of these sediments are associated with sand and gravel pits, or with excavated glacial landscape features such as eskers, drumlins or moraines, and include road cuttings or construction sites. Deposits of sand, gravel or till may also be exposed through natural forces of erosion along river banks, and on some lake shores, but note that sedimentary sea cliffs - CS3 are excluded. Depending on their nature, these sediments may support a wide range of broadleaved herbs and grasses. Red Hemp-nettle (*Galeopsis angustifolia*), a rare plant, can be found in sand and gravel pits. As in the case of exposed rock categories, vegetation cover should be less than 50% for inclusion here. Note that active quarries and mines - ED4 with high levels of disturbance are excluded, and that there is a separate category for spoil and bare ground - ED2.

FL4 – Mesotrophic lakes (p. 19)

This category includes lakes and ponds that are moderately rich in nutrients, and where the water is sometimes discoloured by algae. Characteristic aquatic plants include White Water-lily (*Nymphaea alba*), Yellow Water-lily (*Nuphar lutea*), and a large number of pondweeds (*Potamogeton gramineus*, *P. obtusifolius*, *P. perfoliatus*). Stoneworts (*Chara spp.*) may also be present. The fringing and aquatic plant communities are typically more lush than those associated with oligotrophic lakes.

FW1 – Eroding/upland rivers (pp. 21-22)

This category includes natural watercourses, or sections of these, that are actively eroding, unstable and where there is little or no deposition of fine sediment. Eroding conditions are typically associated with the upland parts of river systems where gradients are often steep, and water flow is fast and turbulent. Rivers in spate

are included. For some rivers on the seaward side of coastal mountains, particularly in the west of Ireland, eroding conditions persist to sea level because of comparatively steep gradients over short distances, and high rainfall. Small sections of other lowland rivers may also be eroding where there are waterfalls, rapids or weirs. The beds of eroding/upland rivers are characterised by exposed bedrock and loose rock. Pebbles, gravel and coarse sand may accumulate in places, but finer sediments are rarely deposited. These rivers vary in size but are usually smaller and shallower than depositing/lowland rivers - FW2. Small mountain streams that dry out periodically can be included if an obvious channel persists or wetland plants are present.

The unstable rocky channels of eroding/upland rivers usually support little vegetation cover. Submerged rocks and boulders may be colonised by aquatic mosses such as *Fontinalis spp.* and *Racomitrium aciculare*. Exposed rocks and wet shaded banks may also support extensive cover of lichens and liverworts. Higher plants are generally rare or absent except in places where fine sediments are trapped. Typical species include water crowfoots (*Ranunculus penicillatus*, *R. aquatilis*), Alternate Water-milfoil (*Myriophyllum alterniflorum*) and the aquatic form of Bulbous Rush (*Juncus bulbosus*). Plant and animal communities of eroding/upland rivers are influenced by a range of factors including bedrock and substratum type, nutrient status, water force, water quality, shade and human impact. Habitat conditions also vary along different stretches of a river where there are riffles, runs, pools, waterfalls and backwaters.

GS3 – Dry-humid acid grassland (pp. 30-31)

Unimproved or semi-improved grassland that occurs on free-draining acid soils that may be dry or humid, but not waterlogged. This type of grassland mainly occurs on mineral-rich or peaty podzols in upland areas but can also be found on siliceous sandy soils in the lowlands, as in the case of the Curragh in Kildare. It is usually most extensive near the upper limit of enclosed farmland on hills and mountains, particularly those in the centre and east of the country, but also occurs widely on steep slopes in upland and lowland regions, and near the coast. Dry-humid acid grassland frequently grades into, or forms mosaics with dry siliceous heath - HH1 or blanket bog (PB2-3).

This type of grassland is characterised by dense low swards of narrow-leaved grasses such as bents (*Agrostis capillaris*, *A. tenuis*), fescues (*Festuca spp.*), Sweet



Vernal-grass (*Anthoxanthum odoratum*), Wavy Hair-grass (*Deschampsia flexuosa*) and Mat-grass (*Nardus stricta*). Purple Moor-grass (*Molinia caerulea*) may be present but should not dominate. Wood-rushes (*Luzula spp.*), Heath Rush (*Juncus squarrosus*) and small sedges such as Green-ribbed Sedge (*Carex binervis*) and Pill Sedge (*Carex pilulifera*) may also be prominent. Common broadleaved herbs include Heath Bedstraw (*Galium saxatile*), Tormentil (*Potentilla erecta*), White Clover (*Trifolium repens*), Devil's-bit Scabious (*Succisa pratensis*), Sheep's Sorrel (*Rumex acetosella*), Heath Speedwell (*Veronica officinalis*), Common Dogviolet (*Viola riviniana*), Lousewort (*Pedicularis sylvatica*) and Yarrow (*Achillea millefolium*).

Herbs of improved agricultural grassland - GA1 may be well represented in areas that are semi-improved. Moss cover is often extensive. Dwarf shrubs may also be present (particularly *Calluna vulgaris*, *Erica cinerea* and *Vaccinium myrtillus*) but cover of these should not exceed 25%. Scattered shrubs of Hawthorn (*Crataegus monogyna*) or patches of gorse (*Ulex spp.*) or Bracken (*Pteridium aquilinum*) are common.

Acid soils that are contaminated with heavy metals, mostly from old copper mines, and which support a type of grassland with abundant Spring Sandwort (*Minuartia verna*), Ribwort Plantain (*Plantago lanceolata*), Red Fescue (*Festuca rubra*) and Common Mouse-ear (*Cerastium fontanum*) should be included in this category.

GS4 – Wet grassland (pp. 31-32)

This type of grassland can be found on flat or sloping ground in upland and lowland areas. It occurs on wet or waterlogged mineral or organic soils that are poorly-drained or, in some cases, subjected to seasonal or periodic flooding. On sloping ground, wet grassland is mainly confined to clay-rich gleys and loams, or organic soils that are wet but not waterlogged. This category includes areas of poorly-drained farmland that have not recently been improved, seasonally-flooded alluvial grasslands such as the River Shannon callows, and wet grasslands of turlough basins (see also turloughs - FL6).

Species composition varies considerably. Wet grassland often contains abundant rushes (*Juncus effusus*, *J. acutiflorus*, *J. articulatus*, *J. inflexus*) and/or small sedges (*Carex flacca*, *C. hirta*, *C. ovalis*), in addition to grasses such as Yorkshire-fog (*Holcus lanatus*), Creeping Bent (*Agrostis stolonifera*), Marsh Foxtail (*Alopecurus geniculatus*), Rough Meadow-grass (*Poa trivialis*) and Tufted Hair-grass (*Deschampsia caespitosa*). Purple Moor-grass (*Molinia caerulea*) may also be

present but should not dominate. The proportion of broadleaved herbs is often high; those that commonly occur in wet grassland include Creeping Buttercup (*Ranunculus repens*), Marsh Thistle (*Cirsium palustre*), Silverweed (*Potentilla anserina*), Meadowsweet (*Filipendula ulmaria*), Water Mint (*Mentha aquatica*), Common Marsh-bedstraw (*Galium palustre*), Devil's-bit Scabious (*Succisa pratensis*), Lesser Ribwort Plantain *Plantago lanceolata* (R. T. Mills) Spearwort (*Ranunculus flammula*) and Cuckooflower (*Cardamine pratensis*). Other common broadleaved herbs that occur on drier grasslands may also be present, depending on the degree of wetness. Wet grassland may be important for orchids such as Spotted-orchid (*Dactylorhiza maculata*). Horsetails (*Equisetum spp.*), Yellow Iris (*Iris pseudacorus*), Floating Sweet-grass (*Glyceria fluitans*) and clumps of tall reeds may be locally abundant.

Wet grassland frequently grades into marsh - GM1 and there are many similarities in the range of species present in both habitats. To be included in the wet grassland category, the cover of grasses should exceed 50%, except in areas where rushes or small sedges predominate, and the total cover of reeds, large sedges and broadleaved herbs should be less than 50%. Among the suite of broadleaved herbs that are present, there should be a significant proportion of drier grassland species in addition to those that are more commonly associated with wetlands

PB4 – Cutover bog (p. 44)

This category should be used in situations where part of the original mass of peat has been removed through turf cutting or other forms of peat extraction. Areas of high bog that have been exploited using Difco cutters, or 'sausage' machines, are included only if the surface vegetation has been removed. Cutover can be associated with all peatforming systems, including fens and some areas of wet heath - HH3. Turf cutting activity is characterised by vertical face banks or rectangular peat ramparts where the cutover section is at a distinctly lower level than the uncut high bog. These banks vary in height, depending in part on the depth of peat, and remain in evidence for a long time after turf cutting ceases. Old turf banks may be overgrown with vegetation. Cutover bog occurs on a much larger scale in the case of industrial or commercial peatlands where peat is harvested mechanically (sod, milled or moss peat production). Areas of bog that are actively



being worked are included in this category, as are areas of abandoned or exhausted cutover.

Cutover bog is a variable habitat, or complex of habitats, that can include mosaics of bare peat and revegetated areas with woodland, scrub, heath, fen and flush or grassland communities. The nature of the recolonising vegetation depends on numerous factors including the frequency and extent of disturbance, hydrology, the depth of peat remaining, and the nature of the peat and the underlying substratum. Standing water is usually present in drains, pools or excavated hollows. Some large areas of cutover bog have been reclaimed as farmland or planted with trees, particularly conifers. If the regenerating habitats of cutover bog cover a sizeable area and can easily be fitted elsewhere in the classification, this should be done. The full extent of the cutover may be difficult to establish as it frequently grades into other marginal habitats or farmland.

WN1 – Oak-birch-holly woodland (p. 50)

Native, semi-natural broadleaved woodland that occurs on acid or base-poor soils that may be either dry or humid, but not waterlogged. *Mor humus* deposits are included, but not peats. Stands are usually dominated by Sessile Oak (*Quercus petraea*), or mixed stands of Sessile and Pedunculate Oak (*Q. petraea* and *Q. robur*) or their hybrids. Other common trees include Downy Birch (*Betula pubescens*), Holly (*Ilex aquifolium*) and Rowan (*Sorbus aucuparia*). Downy Birch (*Betula pubescens*) can be the dominant tree in some situations. In places where the soils are less acid, Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*) may also be present in small numbers. If either of these tree species is abundant, consider the following category, oak-ash-hazel woodland - WN2. The ground flora typically comprises Ling (*Calluna vulgaris*), Bilberry (*Vaccinium myrtillus*), Bracken (*Pteridium aquilinum*), Hard Fern (*Blechnum spicant*), Great Wood-rush (*Luzula sylvatica*), Velvet Bent (*Agrostis canina*), Common Cow-wheat (*Melampyrum pratense*) and Wood Sage (*Teucrium scorodonia*). The climber, Honeysuckle (*Lonicera periclymenum*), is also common. The cover of mosses and lichens in the ground flora and on trees is often very high.

WN5 – Riparian woodland (p. 52)

This category includes wet woodlands of river margins (gallery woodland) and low islands that are subject to frequent flooding, or where water levels fluctuate as a result of tidal movement (in the lower reaches of rivers). Riparian woodland is

dominated by stands of willows that may include native (*Salix cinerea*, *S. purpurea*, *S. triandra*) and nonnative (*Salix fragilis*, *S. alba*, *S. viminalis*) species. Alder (*Alnus glutinosa*) is occasional. The field layer is characterised by broadleaved herbs such as Nettle (*Urtica dioica*), Creeping Buttercup (*Ranunculus repens*), Wood Dock (*Rumex sanguineus*), Meadowsweet (*Filipendula ulmaria*), Wild Angelica (*Angelica sylvestris*), Hemlock Water-dropwort (*Oenanthe crocata*) and Hedge Bindweed (*Calystegia sepium*). Stands of Reed Canary-grass (*Phalaris arundinacea*) are common. Indian Balsam (*Impatiens glandulifera*), an introduced species, is locally abundant. These woodlands often reveal an accumulation of river borne debris, including dead vegetation and plastic, when water levels are low. A fine coating of grey mud on vegetation and tree bases that are regularly submerged and emerged is also characteristic. Willows were widely coppiced and used for basket-making in the past; old Osier (*Salix viminalis*) beds are included in this category but any actively coppiced areas should be considered under short rotation coppice - WS4.

WS1 – Scrub (p. 55)

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5 m, or 4 m in the case of wetland areas. Scrub frequently develops as a precursor to woodland and is often found in inaccessible locations, or on abandoned or marginal farmland. In the absence of grazing and mowing, scrub can expand to replace grassland or heath vegetation. Trees are included as components of scrub if their growth is stunted as a result of exposure, poor soils or waterlogging. If tall trees are present, these should have a scattered distribution and should not form a distinct canopy. This category does not include areas that are dominated by young or sapling trees (<5 or 4 m in height) or young conifer plantations (see immature woodland - WS2 or conifer plantation - WD4). Linear boundary features of scrub that are less than 4 m wide should be considered under hedgerows - WL1.

Scrub can be either open, or dense and impenetrable, and it can occur on areas of dry, damp or waterlogged ground. Common components include spinose plants such as Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Gorse (*Ulex europaeus*), Juniper (*Juniperus communis*), Bramble (*Rubus fruticosus* agg.) and erect or scrambling roses (*Rosa* spp.), in addition to a number of willows (*Salix* spp.), small birches (*Betula* spp.) and stunted Hazel (*Corylus avellana*). Scrub may also contain Bog-myrtle (*Myrica gale*) and Broom (*Cytisus scoparius*). The field layer



is often impoverished and poorly-developed but, in some situations, may be similar to that of woodland. Lowgrowing Western Gorse (*Ulex gallii*) and prostrate Juniper (*Juniperus communis*) can also be components of heath. Note that any areas that are dominated by non-native shrubs should be excluded (see ornamental/non-native shrub - WS3).



Figure 24. Sweathouse and Tobar Bheo-Aoidh River.

Sources and links

Sources are in order of appearance.

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