

A Wealth of Wildlife

Mid and East Antrim Local Biodiversity Action Plan

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Foreword

Mid and East Antrim is a region steeped in history, rich in heritage and celebrated for its landscapes. Many visitors are attracted to the coast at beautiful locations such as the Blackhead Path, Portmuck and Brown's Bay, or drive along the famous Coast Road from Larne that passes Glenarm and Garron. These are all places where there are stunning views and opportunities to see wildflowers, birds, butterflies and marine life. Close by the coast, on hill slopes, crags and hidden valleys, there are patches of woodland of mainly ash and hazel where carpets of bluebell and wood anemone abound in spring. In recent years new woods have been created in this region, including the impressive Diamond Jubilee Wood at Whitehead where thousands of saplings were planted with the local community.

Inland is the Antrim Plateau, a region predominantly of uplands, interspersed with scenic valleys such as Glenwherry. The higher ground includes rough pasture, heathland and blanket bog that is important for some birds of prey and rare breeding birds including curlew, one of Ireland's most iconic species. The best place to view this landscape is from the top of Slemish, the well-known landmark that many climb on St Patrick's Day.

Towards Ballymena there is a pastoral landscape through which the Rivers Maine and Braid flow. In their upper reaches, these rivers have spawning areas for salmon and trout. At Ecos Nature Park the traditional way of managing the wet grasslands by the Braid has been reinstated, with Irish rare breeds of cattle grazing in rushy fields. Elsewhere in this region there are also unexpected and fascinating landscapes such as the Frosses Bog, one of a number of lowland raised bogs along the upper reaches of the Maine where there are plants such as common cottongrass, heather, bog myrtle and cross-leaved heath.

Another place that is well worth visiting is Portglenone Forest, a long established woodland site that is celebrated in the Bluebell Festival held every year in early May. The nearby Lower Bann, which forms the western boundary of this region, is also important for wildlife, particularly at Lough Beg, which is fringed by an impressive expanse of unimproved grassland on its western margin. The spectacular birdlife includes large numbers of whooper swans, winter visitors that graze in fields near the lough and occasional sightings of osprey, which feed almost exclusively on fish, swooping down to snatch their prey from the water.

This rich natural heritage is a precious resource and a key measure of the health of our environment. Biodiversity is, however, at risk. Some species such as the corncrake have disappeared within living

memory. Many people living in the countryside will recall being kept awake at night by the rasping 'crrek crrek' call of corncrake, but changes in agricultural practices have resulted in a loss of habitat for this ground nesting bird, which is now rarely found in Ireland. A number of other bird species are in rapid decline including the curlew, lapwing, red grouse, skylark and house sparrow. The depressing reality is that much of our wildlife is under threat. Fields with swathes of wildflowers are now a rare sight. Peatlands, which are associated with some of our most interesting wildlife and are one of the most distinctive features of the Irish landscape, are disappearing. Numbers of eel and salmon, species often thought of as indicators of the health and vitality of Irish rivers, are crashing.

Although human action is often responsible for species becoming rare or disappearing, we can also improve opportunities for wildlife. For example, many birds of prey are now increasing in numbers, thanks in part to the banning of dangerous pesticides. It is also heartening that many of our most endangered plants and animals have been protected by legislation. Designation of many of our best sites has helped ensure a future for cherished landscapes and their natural heritage.

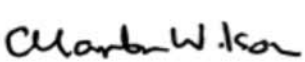
In the following pages some aspects of the biodiversity of Mid and East Antrim are highlighted and an Action Plan is presented, listing species and habitats that will be promoted through a number of projects. These range from surveys to seed collection, practical conservation projects and habitat creation. Increasing awareness of biodiversity and the many ways that the natural environment supports and enriches our lives is also central to the Action Plan, which includes wildlife walks, talks and outdoor events such as tree planting and citizen science. The vibrant, living landscapes described in this publication will in addition encourage all of us to get out, explore the region and discover for ourselves the wildlife that surrounds us.



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Biodiversity

our global life support system

The importance of biodiversity

Biodiversity is the variety of life on earth, the multitude of different plants, animals and microorganisms and the ecosystems within which they live and interact. It is not restricted to rare or threatened species but encompasses the whole of the natural world.

There is growing recognition of the benefits we all receive from biodiversity, benefits that are often called ‘ecosystem services’. Plant and animal life provide us with the food we eat and many of our medicines, maintain the quality of the air we breathe, the water we drink and the soil we use to grow crops. Biodiversity also inspires and enriches our lives and when we want to relax we instinctively head for heather-clad hills, wildflower meadows, wild woodlands or riverside paths. Our treasured landscapes and natural heritage are, in addition, important in creating a sense of place and identity.

Threats to biodiversity

Our growing population and desire for development and an ever-faster pace of life are having an increasing impact on wildlife and natural habitats. Many species are now classified as rare, threatened or endangered and the rate of species loss is increasing.

The largest threat is the degradation and loss of habitats. This can be due to development, for example for industry, housing or infrastructure projects or activities such as commercial peat extraction, drainage and agricultural intensification.

Another major problem is the spread of non-native species. When plants or animals are introduced to a new region, the lack of natural predators, competitors and diseases sometimes results in them becoming ‘invasive aliens’, rapidly taking over sites and niches. In time, this can result in native wildlife declining or becoming extinct.

Over-exploitation of wild plant and animal species is recognised as a significant threat to global biodiversity. In Europe, the depletion of fish stocks in both the marine and freshwater environment is of particular concern.

Pollution has widespread effects on the environment. It is often from diffuse sources that are difficult to control, such as runoff from intensive farming, motor oil on roads and atmospheric deposition of



contaminants from industry. In addition to chemical pollution, wildlife is also impacted by noise, light and thermal pollution and litter is not only unsightly, it can kill by smothering or being ingested.

The threats to biodiversity from climate change are only beginning to be understood. In general it is predicted that, in addition to warmer temperatures, there will be changing patterns of rainfall and drought, and more frequent extreme weather events. Rapid climate change will affect ecosystems and the ability of individual species to adapt. Impacts on species will include changes in distribution and abundance, the timing of seasonal events and habitat use. Indirect impacts such as farmers responding to climate change by growing different crops may also be significant.

Halting biodiversity loss

At the Earth Summit held at Rio in 1992 over 150 countries, including the UK, signed the Convention on Biological Diversity. This promotes the conservation of biodiversity, the sustainable use of biodiversity and the sharing of benefits from the use of genetic resources. It was the first global agreement to cover all aspects of biological diversity and the first to recognize that its conservation is a common concern of humankind and an integral part of sustainable development.

The Convention committed signatories to develop national strategies to conserve biodiversity, and a UK Biodiversity Action Plan was published in 1994. In Northern Ireland a Biodiversity Group was established in 1996 and a Northern Ireland Biodiversity Strategy was endorsed in 2002.

Local Authorities are recognised as having a pivotal role in protecting and enhancing biodiversity. They can promote plant and animal life in many ways, including through the management and development of lands and property, involvement in tourism and development and by influencing local policies and changing attitudes. In Northern Ireland, Councils are also taking on significant new responsibilities that impact on biodiversity including planning, urban regeneration and community development. Their role has recently been formalised in the Wildlife and Natural Environment Act (Northern Ireland) 2011, which introduced a statutory duty for public bodies to further the conservation of biodiversity.

Ballymena, Carrickfergus and Larne Borough Councils, which are merging to form a new Local Authority for Mid and East Antrim, are committed to the protection and enhancement of biodiversity and the wider environment. This commitment is underpinned by the development of this Local Biodiversity Action Plan (LBAP), a document that will raise awareness of our flora and fauna, provide a framework for local action and encourage wider involvement and partnership working.

Devil's-bit scabious, Antrim Hills near Slemish

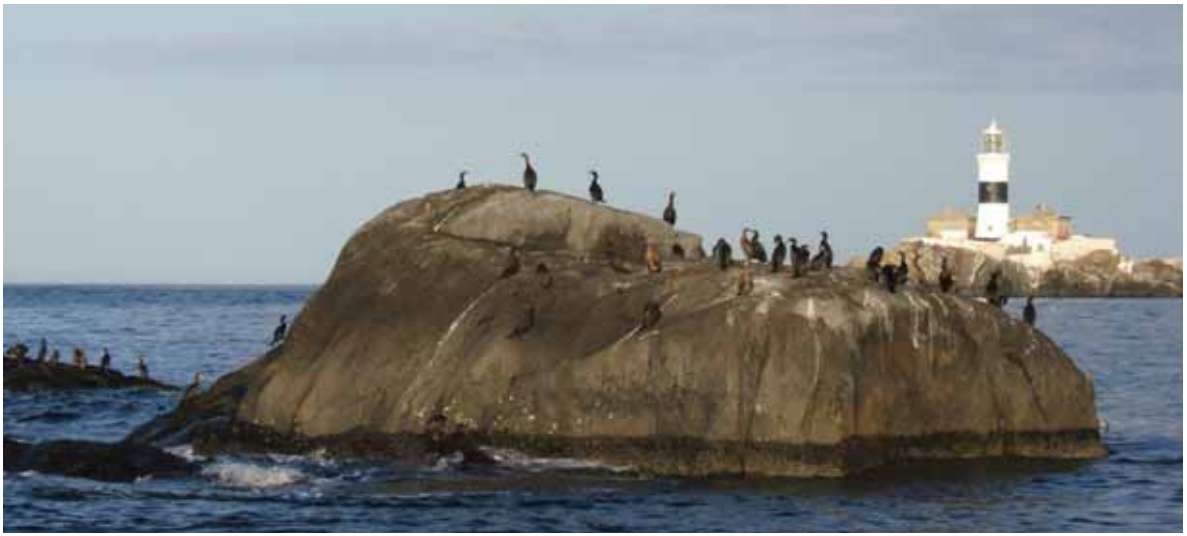


Coast

The County Antrim coast is rightly famous for spectacular cliff scenery and sea views. The rocky shores, sand and shingle beaches and muddy estuaries are also wonderful places for wildlife.

Many birds are associated with the coast, including instantly recognisable species like oystercatcher, a handsome black and white wading bird with a long, pointed, bright orange-red bill and pinkish legs that walks the shores, feeding on cockles and mussels. Cormorant and shag, both long-bodied with dark plumage, are often spotted standing on offshore rocks, at times adopting a distinctive posture, with extended and slightly drooping wings.

There are impressive seabird colonies that occupy cliffs on the eastern side of Islandmagee, at Isle of Muck and the Gobbins. These include significant populations of razorbill, kittiwake and common guillemot. Other speices of note include fulmar, black guillemot, shag and cormorant. The Gobbins is also the only mainland nesting site in Northern Ireland for Atlantic puffin. The Isle of Muck can be viewed from the cliffs at the top of the steps at Portmuck Harbour and there are plans to reconstruct part of the Gobbins Path, which was originally developed as a tourist attraction in the 1900s. This cliff edge walkway will provide visitors with a dramatic coastal experience with guided tours to explain the natural heritage.



Left: Coast near Glenarm Above: Shag at the Maidens

Sightings of harbour porpoise and dolphin are quite common at all times of the year. They are captivating creatures; when spotted by the Coast Road, cars pull in and an excited crowd gathers. Looking further out to the North Channel, the outline of the Maidens are visible on a clear day, a lighthouse on one small island and a tower and ruined light keepers' houses on another. These rock outcrops are an important breeding site for shag and home to colonies of grey seal and common seal. The waters surrounding the islands also include reef and sandbank habitats that support rare marine life.



Sea-kale, Garron

The plant perhaps most commonly associated with the coast is thrift, which forms cushions of deep green leaves with an abundance of pink or sometimes red, purple or white flowerheads on stalks. Other species with colourful flowers to look out for include red valerian (not native to Ireland but long-established and commonly seen growing on old stone walls near the coast), scentless mayweed, sea campion, common scurvygrass and rock-sea spurrey.

Sea-kale, a plant of shingle beaches, is generally said to be extremely rare in Northern Ireland. However, recently a large number of plants, some mature, were discovered growing on the coast near Garron. In 2013 Dennis McBride, a member of the Glenarm Wildlife Group, found seven more just above the strandline at Glenarm and in a search of the region four plants, one quite large and producing seed, were noted on the rocky coast nearby, at Whitebay. They all probably originated from seed washed up on the shore and now that sea-kale is established in east Antrim, it will be interesting to see if it continues to spread and becomes common.

Right: Thrift, Whitehead



Other rarities of the upper beach include rock samphire, a fleshy, aromatic plant with divided leaves that has been noted at Garron. Scottish lovage and oysterplant are also worth searching for: both occur sporadically along the Northern Ireland coast and were, in the past, recorded in east Antrim, where they may still be present, awaiting rediscovery.

On trips to Blackhead, look out for hare's-foot clover, which was first noted at this location in 1794 and tenaciously survives on a rock outcop by the sea. You can also find bristly oxtongue at the side of the steps from the coast path to Blackhead Lighthouse. This produces an upright flowering stem with clusters of pale yellow flower heads, though its most noticeable features are that it has an abundance of stiff, sharp hairs and the leaves are covered in what look like white blisters. It is generally considered to be less than beautiful. In County Antrim, bristly oxtongue has only been regularly reported from a small number of disturbed land sites near Whitehead. In 2013, over a dozen plants appeared at a new location in this area, on ground that had been stripped of topsoil by paths in the Diamond Jubilee Wood at Bentra, though these may have been introduced in a wildflower mix that was broadcast the year previously.



Bristly Oxtongue, Whitehead

Another interesting coastal area is Seapark, west of Carrickfergus, a small sandy beach with vegetated shingle banks. Species to discover include lyme-grass, sand couch, sea sandwort, scentless mayweed, sea rocket, sea radish, perennial sow-thistle and several species of orache.

The road from Islandmagee to Ballycarry cuts across the bottom end of Larne Lough on a causeway that provides a good vantage point to view the extensive intertidal mudflats. The upper parts of the mudflats are fringed with saltmarsh vegetation and to the north of the causeway a zonation of plants is apparent. Glasswort and in places common saltmarsh-grass occupy areas of bare mud, followed on slightly higher ground by a mixture of lax-flowered sea-lavender, saltmarsh rush, lesser sea-spurrey, common saltmarsh-grass, sea plantain, sea arrowgrass and sea aster. At the strandline, saltmarsh rush with red fescue and sand couch dominate. There are also records of some uncommon plants, including hard grass and annual sea-blite, which is fleshy-leaved and has small, greenish flowers.

Perhaps the best time to view this habitat is in August when, from the causeway, an abundance of the colourful yellow and purple flowers of sea aster can be seen, mingling with innumerable tiny purple-pink flowers of lax-flowered sea-lavender. Saltmarsh is rare in the British Isles and in Northern Ireland the total area amounts to only *c*. 250 ha.

Along the western side of Larne Lough at Magheramorne and to the south and north of Glynn, there are brackish water lagoons created where inlets were cut off from the lough when the railway line was constructed in the nineteenth century. Another lagoon was formed next to Larne town railway station when the dual carriageway to Larne Harbour was constructed in the 1970s. Brackish water habitats are uncommon and can be associated with rare species. These include the lagoon cockle which has been found at the sites just north of Glynn and at Larne town, and spiral tasselweed noted at Glynn. Eelgrass, which forms underwater beds that are an important habitat for marine life, has been observed at Glynn and both eelgrass and dwarf eelgrass occur in Larne Lough.

Smelt, a small, shoaling fish that lives in estuarine and coastal waters and spawns in the lower reaches of rivers, has been noted in sea loughs around Northern Ireland including Larne Lough. Mullet and flounder, which are also commonly found in estuaries, have been recorded from Larne Lough and some of the lagoons.

Larne Lough regularly supports nationally important numbers of overwintering birds including goldeneye, great crested grebe, red-breasted merganser and shelduck. Greenshank and redshank and common gull are present in nationally important numbers. Internationally significant numbers of light-bellied brent geese have been recorded at the southern end of the lough, overwintering after migrating from northern Canada. Little egret, a distinctive medium-sized white heron with long black legs, yellow feet and black bill, has in recent years extended its range northwards in Europe and is now breeding in Ireland and is regularly spotted at Larne Lough, feeding on the mudflats.



Brent geese, Magheramorne

There are two tiny islands in Larne Lough between Glynn and Magheramorne, Swan Island and Blue Circle Island, the latter created in the 1970s as a wildlife site by the company that formerly owned Magheramorne Quarry. These inconspicuous islands support common and sandwich terns and also small numbers of arctic and roseate terns. This is Northern Ireland's only colony of roseate tern, one of Europe's rarest breeding seabirds. Swan Island is, in addition, notable for the presence of the rare annual plant bur chervil. This is similar in appearance to cow parsley, but is more delicate and has pronounced hook-like bristles on the fruits.

Twite, the rarest of our breeding finches, has been spotted wintering by the coast in this area, around the saltmarshes in Larne Lough and feeding on seeds at Sandy Bay. Further north, at places like Drains Bay, small groups of light-bellied brent geese are sometimes seen on the shore in winter. Another sight to look out for at Drumnagreagh Port, between Ballygally and Glenarm, is a fragment of beachhead saltmarsh on the rocky upper shore with plants that include sea aster, common saltmarsh-grass, sea arrowgrass, sea club-rush and saltmarsh rush.

Belfast Lough supports internationally important numbers of redshank in winter and nationally important numbers of shelduck, oystercatcher, purple sandpiper, dunlin, black-tailed godwit, bar-tailed godwit, curlew and turnstone. Outer Belfast Lough is particularly important for wintering populations of great crested grebe, oystercatcher, ringed plover, redshank and turnstone.

Otters can be spotted along the coast and if you take a stroll along the attractive footpath from Whitehead to Blackhead you might also be lucky enough to see a common lizard, our only native reptile, sunning itself on rocks or on one of the picnic tables. Lizards are frequently reported from this area and, in addition to coastal habitats, are particularly associated with sites that have coniferous woodland, heath or bog. However it is thought that in lowland areas populations may be small and isolated due to habitat loss.

Invertebrate species to look out for near the Antrim coast include the rock snail, a tiny and easily overlooked species with a flattened conical shell. It prefers places with limestone and in the central, southern and western counties of Ireland, regions where this rock is common, it is widespread. In Northern Ireland it is restricted to areas of white limestone which outcrop near the Antrim coast. The common pill-bug, a kind of woodlouse (slater), is also often found in central and southern Ireland and in the north is restricted to the coast. However, its absence in much of Northern Ireland is not thought to be because of geology but because it cannot tolerate cold, wet conditions and survives only in the milder climate near the sea. It has been found under rocks at the old quarry by Glenarm Harbour and is well worth showing to children, who marvel at its ability to roll into a ball when disturbed. Keen mini-beast hunters might try searching for the 24-spot ladybird. It is just 3-4 mm in length and the body is

covered in fine hairs. Reported in 1900 at Blackhead on tufts of grass at the cliffs, it has not been observed since at this location, or anywhere else in Ireland.

A walk at low tide along a rocky shore reveals a richness of marine life. This includes seaweeds, sponges and shelled creatures such as the common mussel, barnacle, limpet, whelk and periwinkle. However, there is concern about a growing number of non-native invasive species that have been accidentally introduced and are spreading in the local marine environment. These can take over habitat and displace native species and cause other problems including fouling the hulls of ships and impacting aquaculture industries.



Rockpool, Garron

Once established, marine invasive aliens are almost impossible to eradicate. The slipper limpet, a North American species, first appeared in Belfast Lough around 2005. A non-native sea squirt *Styela clava* has recently been noted in Larne Lough. This is from the north western Pacific and was first recorded in Britain in the early 1950s at Plymouth, where it may have been introduced on the hulls of warships following the end of the Korean War, and it now occurs at several places around the coast of the British Isles. In 2012, the carpet sea squirt *Didemnum vexillum,* which is thought to be a native of the waters around Japan, was found at Strangford Lough, and it may spread to other sites. Wireweed (*Sargassum muticum*), an alga native to the shores around Japan and Korea, has been present in Europe for several decades, growing up to 16m in length and quickly forming dense mats. It now occurs at several sites along the coast in County Down and County Antrim.



Grasslands



Butterfly survey, Carrickfergus Mill Ponds

Farming intensification has had a dramatic impact on grasslands. Because of the application of fertilisers and herbicides and also reseeding, most grasslands are dominated by a few species of grasses, and wildflowers are largely absent. It has been estimated that in Northern Ireland species-rich hay meadows may have declined by as much as 97% over the last 50 years. The best remaining grasslands are sites where nutrient levels are low and traditional farming practices are still followed.

Left: Species-rich grassland, Glenarm coast

Along parts of the Antrim coast there are shallow, freely draining soils overlying basalt and limestone. These grasslands have in places a diverse assemblage of plants including some uncommon species. At Galboly (Garron) there is spring sandwort, the hawkweed *Hieracium basalticola*, mossy saxifrage, least mountain bedstraw and ivy broomrape, a parasitic plant. This area is also home to one of Northern Ireland's rarest grasses, tor-grass, which is found at an old lane south of St Killian's College (Garron Tower).



Six-spot burnet moth on ragwort, near Glenarm

Driving along the coast southeast of Glenarm during the early summer, clumps of common bird's-foot-trefoil, the flowers golden yellow streaked with red, are particularly noticeable. It is well worth stopping at one of the car parks in this area to discover a delightful mix of wildflowers growing on the thin, well-drained soils. Here you can see wild thyme, eyebright, lady's bedstraw, fairy flax, kidney vetch, mouse-ear hawkweed, heath milkwort and harebell. There is also an important grassland fungi assemblage and on sunny summer days this is a great place to observe six-spot burnet moth and butterflies including the common blue, small tortoiseshell, meadow brown and dark green fritillary. The dark green fritillary, which has recently also been recorded at the Local Nature Reserve at Cranny Falls, is largely restricted to coastal habitats in Northern Ireland, though some colonies do occur inland.

Other areas of species-rich grassland include Ballygally Head, Castletown near Whitehead and Newlands on the slopes of Black Hill to the west of Larne Lough. At Newlands, species of note include quaking-grass, greater butterfly-orchid and frog orchid. Another important site is Rathsherry, on the eastern slopes of Carncormick, northeast of Ballymena, where there is a range of grassland habitats with a diverse flora that includes a number of orchid species.

There are several meadow plants that have a localised distribution in eastern Antrim. Wood crane's-bill is restricted to the Glenarm area, the main site is a small field at Feystown that is an Ulster Wildlife Nature Reserve. A small field at Lemnalary, north of Carnlough, contains great burnet, a tall elegant plant with sharply serrated leaves and deep purple-brown flowers. There are just two known populations in Northern Ireland: Lemnalary and one location near Donaghadee in County Down. Wood bitter-vetch has been recorded at a few sites to the west and northwest of Larne though the only place where it is now known to occur is on a roadside bank by the entrance to Ballyboley Forest. Another uncommon member of the vetch family is wood vetch, which in County Antrim is largely restricted to grasslands and woodlands near the coast.

A good place to see wet grasslands is at Ecos. This is situated on the floodplain of the River Braid and after periods of heavy rainfall, riverside fields are transformed into temporary ponds. Much of the land at Ecos is cut as hay meadows or managed by grazing with moiled cattle, a native red and white coloured breed that is suited to rough pasture. A permanent lake has been created by the Ecos Centre and stands of reed canary-grass and branched bur-reed have developed around the margins. In the surrounding land there



Wood crane's-bill, Feystown



Wet grasslands, Ecos

are plants typical of soggy ground such as marsh woundwort, water mint, ragged robin, brooklime, common marsh-bedstraw, marsh cinquefoil, marsh marigold, fool's water-cress and lesser spearwort. Other grassland species to look out for at Ecos include yellow-rattle, purple-loosestrife and greater bird's-foot-trefoil.

Wet grasslands are fragile habitats that can be damaged by drainage schemes. For example narrow small-reed, a grass that in Ireland has only been recorded by the shores of Lough Neagh and Lough Beg, has been lost at some sites, most likely because of changes to habitats following works undertaken to lower the level of Lough Neagh. However, the western shore of Lough Beg remains one of the most extensive areas of unimproved wet meadows in Northern Ireland. Here narrow small-reed still occurs, along with a number of other plants that have a localised distribution or which are rare including waterwort, Irish lady's-tresses orchid, pennyroyal and slender-leaved pondweed.

The wet meadows at Lough Beg support snipe, redshank and curlew, though there has been a decline in the numbers of these waders, in part due to the spread of common rush. Rush infestation in wet grasslands is a widespread problem and RSPB, in partnership with farmers, is implementing a landscape-scale project to address this issue, using a specially adapted tractor. This has tracks rather than wheels and is being used on the western side of the lough to cut rush growing in soft, waterlogged ground.

Although agriculturally improved grasslands are generally of little conservation value, in winter months whooper swans are attracted to large, flat fields around parts of Lough Beg and Lough Neagh, where they graze on the grass. Driving around the country roads by these loughs it is often possible to find a place to stop safely and watch as groups of these impressive large birds come in to land. This is a dramatic sight well worth looking out for.

The fields fringing Lough Beg and Lough Neagh are also a hotspot for tree sparrows, which feed in the agricultural land around the shores of the loughs and by drains and ditches. Tree sparrows are in decline across the UK and to help support this species, over 2,000 nest boxes have recently been sited by rivers in this catchment, and supplementary feeding stations have been established. Members of the public are also being encouraged to report sightings and information boards highlighting the importance of the area for wildlife have been erected at several locations.

The Irish hare prefers areas with both improved grasslands for feeding and fields with rushes or long grasses where they lie up during the day. They used to be common and are still often spotted around Glenwherry and the southern Antrim Hills towards Larne, though in many other regions they now have a patchy distribution. There is also concern that the European brown hare, which was introduced into Ireland on a number of occasions, has been shown to hybridise with the Irish hare and may displace the native species.



Irish lady's-tresses orchid, Lough Beg



Trees and woods

Around the coast of County Antrim, patches of semi-natural woodland are common on scarps and steep river valleys, sites that cannot easily be farmed. They generally comprise hazel and ash and variable amounts of hawthorn, blackthorn, birch, rowan and willow. This kind of woodland is also present further inland, for example at North Woodburn Glen near Carrickfergus and at Glen Burn, east of Buckna.

These hazel/ash woods generally have a diverse groundflora including bluebell, wood anemone, wood-sorrel, opposite-leaved golden-saxifrage, wild garlic and primrose. Stems of honeysuckle are often conspicuous, clambering up tree trunks. Dead trunks of elm indicate that, prior to the spread of Dutch elm disease, this was a species associated with some of these woods, and the recent reports of the fungus *Chalara fraxinea*, which causes ash dieback, is causing concern that ash may also become less common.



Wild garlic, Straidkilly

An easily accessible route to explore one of these woodlands is the riverside path that leads to the waterfall at Cranny Falls, Carnlough. Here there is a canopy of hazel, ash and sycamore and the plants lining the route include sanicle, wood avens, woodruff, wild garlic, bluebell and wood anemone. Wood barley, a scarce grass, has been found at this site. Another fascinating place to discover is the Nature Reserve at Straidkilly, between Glenarm and Carnlough. Hazel predominates with occasional rowan and hawthorn and a few tall ash, goat willow and downy birch, and in spring the ground is carpeted with wildflowers. Uncommon species recorded at Straidkilly include wood vetch, toothwort, yellow

Left: Portglenone Forest

bird's-nest and bird's-nest orchid. An interesting feature to look out for are occasional dead twigs that at first glance appear to be balancing on hazel branches but which are actually firmly attached by the aptly-named glue fungus, which has formed where two boughs touched.

Many of the earliest records of large scale tree planting are from large private estates. Trees in demesnes (the grounds surrounding mansion houses) were also often not felled for timber but retained into old age to enhance the landscape. Today these can be important sites for old woodland and veteran trees. Some demesnes have areas of grazed grassland with widely spaced, mature trees, habitats known as wood pasture or parkland. There is often a predominance of tall-growing natives such as oak and ash, though exotic species such as giant redwood, cedar, Turkey oak and the evergreen holm oak are sometimes present.



Veteran oak, Glenarm Demesne

The Glenarm Demesne contains areas of hazel woodland and also woodland and parkland dominated by oak. Many of the old oaks have several boughs growing from near ground level. It is possible that they developed this unusual form because, at some time in the past, the land was heavily grazed and animals browsed young oaks, eating the shoots and causing the trees to resprout with numerous stems. Alternatively, the multi-stem trees seen today may represent regrowth from the stumps of mature oaks that were long ago felled for timber.

Glenarm, with its mixture of veteran trees, woodlands and grasslands, supports a diverse invertebrate fauna, including rare saproxylic beetles (beetles associated with dead wood), lichens and bracket fungi. This is considered to be one of the richest areas in Northern Ireland for woodland plants. Three species of bat, Leisler's bat, Daubenton's bat and brown long-eared bat, have been found at Glenarm and notable invertebrates include the silver-washed fritillary butterfly.

The estate is privately owned though the charity Ulster Wildlife has a woodland nature reserve at Glenarm, and organises public wildlife walks and also

undertakes management projects. Conservation activities have included collecting acorns from the veteran oaks, growing them in a nursery and planting the saplings back at this location, clearing vegetation that is shading veteran oaks and also coppicing some of the hazel woods.

Coppicing is a process in which trees are cut at near ground level to provide a crop of timber and then allowed to regrow, normally for around 10 years, when they are cut again. This has been undertaken at Glenarm to add diversity and to open up the canopy to increase light and thereby encourage the development of the ground flora. It is hoped that coppicing will also improve habitat for the wood warbler, a rare breeding bird that has been heard calling at Glenarm in recent years. The wood warbler, which in Northern Ireland is at the edge of its range, is found sporadically at sites in the Glens of Antrim and also in the Sperrin valleys and Fermanagh, in deciduous woodlands where there is little undergrowth.

Three uncommon species of snail associated with woodlands are found in the Glens of Antrim. The copse snail, which is only known from a few sites in Ireland, occurs on the margins of hazel woods and on white limestone scree around the Antrim coast. The Pyrenean glass snail, which is present only in the Pyrenees, northwest France and in a few places in Ireland, is a woodland species that prefers conifers, and has been noted at Glenariff and Glenarm. It is thought to be non-native, perhaps introduced by early man. The plated snail, an ancient woodland relict species restricted to the British Isles and two small areas in Germany and Sweden, has been noted in Glenariff Forest and at Glenarm, and it is thought that detailed surveys might show it to be present in the hazel woods along the coast. However it is declining in Ireland, perhaps because of climate change, as it cannot retreat into the soil or seal its shell and is therefore vulnerable to drying.

Spindle, an attractive shrub that is noticeable in winter when the leafless twigs have berries that are bright red or pink, is quite common in the region around Lough Neagh and Lough Beg. It has also been recorded from the Carrickfergus area, including Knockagh and North Woodburn Glen, but it is rare and perhaps absent from north Antrim. Several species of whitebeam (*Sorbus*) also have a restricted distribution in Antrim. Irish whitebeam, a rare species generally found in glens and rocky scarps in scrub woodland, has been discovered at Drumnasole and Garron. A closely allied species, rock whitebeam, has been found on cliffs by the coast in this region. Common whitebeam also occurs on cliffs near Garron Tower and these trees are thought not to have been planted and to represent a native population.

In the northeast of Ireland, juniper is largely confined to cliffs by the coast of County Antrim and north Londonderry and to the Mourne Mountains. However in a recent search of the southern glens just two trees were noted: one on the cliffs at Garron and another on top of a large boulder situated on the south side of Glenariff. There are historical records for another native evergreen tree, yew, on the cliffs around Glenarm and Genariff as well as Cave Hill and Benevenagh. These kinds of locations, however,

Overleaf: Lone juniper bush crowning a large boulder, southern Glenariff





are not the preferred habitat for yew; yew foliage is poisonous and it is generally removed from agricultural land, only surviving at places that are not grazed, such as inaccessible cliffs.

In Mid and East Antrim, Forest Service has plantations of coniferous trees by the Woodburn Reservoirs and Lough Mourne/Copeland Reservoirs near Carrickfergus and at Ballyboley, Capanagh and Cleggan in the Antrim Hills. Forest Service has also developed mixed coniferous/broadleaved woodlands in part of the Glenarm Demesne, at places by the Bann where river banks used to dump dredged material were subsequently planted and also at Portglenone Forest.

Portglenone Forest is thought to be a long established woodland site. Unfortunately no veteran trees remain, though there are records for some uncommon woodland plants and the plated snail, an indicator of ancient woodland, has been noted. Beech dominates large areas at Portglenone and the dense shade cast by these trees in summer restricts the development of scrub species. However, in early spring, before the leaves appear, light reaches the ground and this has encouraged the spread of spectacular expanses of bluebell. There is an extensive network of public paths through the woods and by the Lower Bann, and every year on the first Bank Holiday in May, the wildlife is celebrated through the Bluebell Festival, a public event organised with the Portglenone Enterprise Group. Stalls are put up among the trees and there is music, food, arts activities, environmental games and woodland walks.

Mature, planted woodlands with a diverse mix of trees, often including broadleaved and coniferous trees and both native and non-native species, are quite common in the lowlands. These were mostly created by estate owners in the nineteenth century; a typical example is the woodland at Carnfunnock Country Park. This was formerly the grounds of a private house and is now open to the public with trails to explore and information boards to help visitors identify the trees.

The largest new broadleaved woodland is the 60 acre Diamond Jubilee Wood next to Bentra Golf Course, Whitehead. This was created by Carrickfergus Council in 2012, when over 60,000 native saplings were planted. A network of paths has been developed and a programme of events organised to encourage local residents and visitors to enjoy this new public site. These include foraging, pond dipping, bird watching and hedge laying. Several other new broadleaved woods with public access have been developed by the Woodland Trust. These are Galgorm Wood (Cullybackey), Keel Wood (Ballymena), The Drum (Cargan), Seaview Wood (Larne), Clements Wood (Kilwaughter) and Oakfield Glen (Carrickfergus).

Red squirrels can still be found in northeast Antrim, in an area stretching from Whitepark Bay to Glenarm. However, in much of Ireland the red has disappeared, replaced by the grey squirrel, an alien from North America which has spread rapidly from one site in Longford where it was introduced less than a century ago. To try to retain the red in Antrim, the Glens Red Squirrel Group was set up in 2008 with volunteers putting up feeders, culling greys and manning a hotline for members of the public to report squirrel sightings.



Community tree planting event, Carnfunnock

Evidence of badgers, such as narrow pathways, latrines and badger bristles caught on a low strand of barbed wire, is common in most woods, though setts are also seen in hedgerows and undisturbed areas in fields. Pine martens generally inhabit woodland or scrub. They are elusive creatures that are rarely spotted but it is thought that numbers are increasing, and there are some recent records from northeast County Antrim.

Hedgerows are mainly dominated by hawthorn, planted because it has sharp spines and the cut branches form an interlocking network of twigs that farm animals cannot easily push through. Hedges often also contain some ash and other tree species such as blackthorn, hazel, elder and elm together with dog rose, ivy and honeysuckle. In more upland areas such as Glenwherry, beech was often used for hedging, perhaps because cut beech trees retain their leaves in winter, when they may provide better shelter than hawthorn for farm animals. Where farmers have not regularly cut these beech hedges, they grow to form a distinctive farm landscape of rows of tightly-spaced, tall trees. Hedges of privet are normally confined to urban areas, but are also a feature of the land around the reservoirs in the hills near Carrickfergus, where they were probably planted by the Belfast Water Commissioners. Non-native fuchsia, which has beautiful lantern-like flowers, is sometimes used for hedging at farm houses and urban properties near the coast, where frosts that would affect this plant are rare.



Rivers, lakes and reservoirs

In Mid and East Antrim, the largest rivers form part of the Lough Neagh system, which reaches the sea via the Lower Bann. Other small rivers flow eastwards to the sea and around Carrickfergus there are streams that flow southwards into Belfast Lough. Many river stretches throughout this region are of good ecological status though some are impacted by organic pollution and nutrient enrichment from sources such as agriculture and sewage discharges. Some waterways have been affected by water abstraction, the introduction of hydropower schemes and the construction of embankments, weirs, dams and culverts. The Lower Bann has been deepened for navigation and flood alleviation, and sections of many rivers, including parts of the Maine and Braid, have been subject to arterial drainage schemes undertaken in the early 1950s and early 1970s.

The Maine (sometimes spelled Main) and Braid are conspicuous features of the landscape around Ballymena. They meet at Galgorm and the waters flow southwards, entering Lough Neagh near Randalstown. Electro-fishing in the lower reaches of the River Maine has found trout, roach, gudgeon, stone loach, minnow, three-spined stickleback, bream, perch and, below Randalstown, hybrids of roach and bream. Pike are also present and are becoming more common. The upper reaches of the tributaries of the Maine are spawning areas for salmon and also trout: the Clough is an important juvenile salmon river and the Kells Water is an important nursery stream for trout.

The Six Mile Water rises near Ballyboley Forest and flows westwards, discharging into Lough Neagh at Antrim. A Rivers Trust was set up for this catchment in 2009, with the principal aims of improving water quality and habitat. The river has important trout spawning areas in its upper reaches and the Six Mile Water and its tributaries is the only location in Ireland for river water-crowfoot, a subaquatic plant with long, leafy stems. Recently native white-clawed crayfish have been reported from an upper section of the catchment. This is an unexpected discovery as crayfish were considered to be absent from County Antrim. White-clawed crayfish are declining across Europe and although Ireland has the largest remaining population, this is at risk from crayfish plague which is carried by non-native species.

As Ireland had no freshwater connection to the rest of Europe at the end of the last ice age, all purely freshwater fish are thought to have been artificially introduced to Ireland and the initial fauna is considered to have comprised migratory species. Of particular significance for local biodiversity are eel, salmon, trout, lamprey and pollan.

Left: Kingfisher, Glynn

The Lough Neagh eel fishery is the largest wild caught eel fishery in the world, and is an industry of considerable economic importance. However it has been affected by a pan-European crash in the population of elvers returning from the remarkable migration that adult eels make to breed at the Sargasso Sea. In response, the European Commission has set up an eel recovery plan and management schemes are being created for river basins. The reasons for the crash are not clear, though factors such as loss of suitable habitat, the construction of hydroelectric schemes, pollution, over-fishing and changes in ocean currents linked to climate change have been implicated. In addition, a parasitic nematode worm introduced by accident from Asia in the 1980s may reduce the fitness of eels, making it more difficult for them to undertake their migration to the Sargasso.



There is concern that the population of salmon, like eel, is declining rapidly. In Northern Ireland, following public consultation, the mandatory cessation of all commercial wild salmon fisheries and the mandatory catch and release of rod caught salmon have been introduced. Studies of fish returning to rivers show evidence of poor growth rates, and this may indicate that they had difficulty obtaining food in the marine environment. It is possible that an underlying cause is climate change, and this may also explain recent research which noted that young salmon in the Bush are migrating to the sea earlier in the year.

A number of different strains of trout are recognised, distinguished by their behaviour, the colour of the flesh and colour and patterning of the skin and fins. Some strains also differ in shape. Anglers refer to brown trout, slob trout, sea trout, ferox trout and dollaghan, a distinctive trout found only in Lough Neagh and many of its tributaries. Dollaghan spend much of the year in Lough Neagh, returning to the rivers in autumn to spawn, and the Dollaghan Trust has recently been set up to raise awareness of this unique fish and safeguard its future.

Three kinds of lamprey are present in river catchments in Northern Ireland: brook lamprey, river lamprey and sea lamprey. They have not been well studied though records suggest that the brook lamprey are widely distributed. River lamprey are present in several river systems in Northern Ireland including the Neagh/Bann catchment and, although this species normally migrates to estuaries or the sea, it has been suggested that there may be a population restricted to the Lough Neagh system. Sea lamprey, the biggest of the three species, occur in the lower reaches of the Bann and have been observed spawning below the weir at Carnroe, a structure that they may not be able to migrate past.

Pollan is a species of particular importance to the Lough Neagh system. Pollan are thought to have entered Irish rivers as a migratory fish at the end of the Ice Age but over time became restricted to freshwater. In addition to being found in Lough Neagh (and sometimes the Lower Bann), the species also occurs in the Erne and Shannon systems, though it is extinct in Upper Lough Erne and has declined in Lower Lough Erne since the 1970s. Pollan is commercially fished in Lough Neagh and there is concern that fewer large, mature fish are being seen.

Habitat improvement projects undertaken on the Maine and Braid have included tree planting on banks and introducing stone groynes, gravel beds and deflectors to create spawning, nursery and resting areas for fish. In the 1990s the Maine Enhancement Partnership (MEP) was set up and the Maine Rivers Trust has recently been formed to promote the sustainable management of the Maine, Braid, Kells, Clough and Glenwherry Rivers.

Throughout this region there are attractive walks along riverbanks, quiet places away from traffic where wildlife can be enjoyed. In Larne there is the Inver River Walk. In Ballymena there are surfaced paths along the Braid at Tullaghgarley Bridge and from the town centre to Ecos, along the Maine from Galgorm to Cullybackey and at Lisnafillan, and by a section of the Deerfin Burn at Ballee. There are also paths by waterways at Kells, Broughshane and along parts of the Lower Bann. The small National Trust property at Gleno includes a spectacular waterfall.

Rivers are a focus for birds such as heron, dipper and kingfisher and also cormorant which travel from their coastal roosts to fish on inland waterways and loughs. Lough Beg is of particular importance for wintering wildfowl including pochard, teal, shoveler and whooper swan. Recent work undertaken by the Ballymena Birdwatchers Club has benefited common tern which the club noted were using the lough for feeding but did not have suitable nesting sites in the area. In 2008, the club



River Braid, Broughshane

obtained funding to construct a large timber and steel raft that was anchored in the south of Lough Beg. To make it attractive for terns, the raft surface was covered with rounded pebbles and some ridge tiles were placed randomly to provide shelter for young birds. In the first year terns were seen visiting the structure and, by 2012, there were 25 pairs nesting on the raft.



Pond dipping, Ecos

Another notable species that is sometimes spotted at Lough Beg, Lough Neagh and Portmore Lough is osprey, which had been driven close to extinction in the British Isles because of persecution, but is now recovering in numbers. Although not breeding in Ireland, they are a welcome visitor, stopping off on migration between Scotland to Africa. The Ballymena Birdwatchers Club has created platforms at Lough Beg by fixing pallets to the top of some tall pine trees in the hope that, in time, they will be used by osprey for breeding.

Lakes and small waterbodies at Garron are associated with some rare invertebrate and plant species including opposite-leaved pondweed, which occurs at Loughnatrosk, situated in the hills above Carnlough. Species of biodiversity interest can also be found at man-made ponds in heavily modified environments. For example, a recent survey of the Mill Ponds by the Amphitheatre Leisure Centre in the heart of Carrickfergus noted an uncommon, pea-sized bivalve, the lake orb mussel, which thrives on the muddy bottom. The fluctuating water levels of the North and South Woodburn and Copeland Reservoirs in the uplands near Carrickfergus provide habitat for some rare mosses which grow on mud exposed around the margins of these waterbodies.

Swan mussels have been reported from Lough Beg though in the Erne system in Fermanagh there has been a decline in this species that is attributed to the spread of the non-native zebra mussel. Zebra mussels in addition have an impact on water quality and block water pipes. There is concern that zebra mussels have recently been found in Lough Neagh, most likely accidentally transported on the hulls of pleasure boats, and may spread further.



Glenarm River

Alien invasive water plants are appearing in lakes and rivers, introduced deliberately in the erroneous belief that they could improve waterways for fish or by accident when, for example, garden ponds stocked with exotic material overflow. Non-native Himalayan balsam, Japanese knotweed and giant hogweed are also spreading along river corridors. These are recognised as problem plants as they out-compete native species, leading to a reduction in biodiversity, and may be associated with bank instability and erosion. Contact with giant hogweed also causes painful blisters. However, despite these problems, most rivers and lakes are fringed by wet grasslands that provide important habitats for wildlife including otters. These shy creatures are thought to be present on most rivers in Antrim, though they are rarely seen.



Lowland raised bogs

Raised bogs have a fascinating history. They are generally located in shallow basins and in the flood plains of rivers, places that would have been poorly drained. With the growth of vegetation these sites develop into marsh and fen and, over a long period of time, the continued accumulation of organic material creates conditions that encourage the growth of peat-forming mosses. Lowland bogs typically have a raised, domed, profile. They are rainwater-fed and associated with a distinctive range of plants that can survive the waterlogged, nutrient-poor and acidic environment.

The majority of lowland raised bogs have been affected by cutting and at Ballyscullion Moss to the east of Lough Beg there is large-scale mechanical peat extraction. It has been estimated that only 14% of lowland raised bogs in County Antrim still have an intact surface. Remnants of raised bogs are common, often colonised by stands of birch and willow scrub with some rowan, or planted with conifers. In the valley of the Maine to the south of Ballymena there are substantial areas of cutover raised bog including sites at Killybegs Lower near Slaght and at Sharvogues. Despite drainage and cutting, Sharvogues retains some conservation interest: it is the only County Antrim site for bog-rosemary and in recent years marsh fritillary butterfly was recorded from this location, though unfortunately is believed that the population has now died out.

Cottongrass, Frosses Bog



Above: Bog-rosemary, Sharvogues
Overleaf: Sharvogues Bog







Bog asphodel, Frosses

The best remaining examples of raised bogs in mid Antrim are in the valley of the River Maine north of Ballymena. These include Caldanagh Bog, Dunloy Bog, Killycreen Bog and Frosses Bog. Turf cutting has taken place at all of these sites and they have also been affected by the Maine drainage scheme which involved deepening and straightening the river and ditches. However in some places the margins of the Caldanagh and Dunloy Bogs have not been damaged and there is a transition from bog to habitats on shallow peat or mineral soils. The most southerly Killycrean and Frosses Bogs lie within the mid and east Antrim council area.

The Frosses Bog is situated between the Maine and the Frosses trees, a well-known avenue of Scots pine on a section of the Ballymena to Ballymoney road. This bog has a relatively intact dome and the bog surface includes pools, hummocks and lawns. The hummock-forming bog moss *Sphagnum imbricatum* is present and the rare *Sphagnum pulchrum* is abundant in places. Mounds of the highly branched, pale grey-green reindeer-moss lichen are also common. The margins of the bog have in places been extensively cut, resulting in a mosaic of habitats ranging from acidic pools with *Sphagnum* mosses and bogbean to fen, swamp, heath and grassland dominated by purple moor-grass. In drier areas there are stands of birch with rowan and willow and some young self-seeded Scots pine trees.

The plants in bogs impart wonderful subtle colours to these landscapes; colours that change with the seasons. In early summer the surface of the Frosses Bog is transformed by the appearance of innumerable fluffy, white heads of common cottongrass and hare's-tail cottongrass. By mid July these have almost all vanished and vast numbers of spikes of bog asphodel with ochre-yellow flowers appear, particularly in wetter hollows. By the beginning of autumn, the pink flowers of cross-leaved heath and purple flowers of heather dominate and the bog



Sphagum and cranberry, Frosses Bog

asphodel spikes change in colour to brown and, for a while, to vivid orange. As winter approaches, and the vegetation dies back, russet, silver and grey colours predominate on the bog surface.

Shrubby species at the Frosses Bog include bilberry which is frequent on drier, shallower peats and has berries that by end July have changed in colour from red to blue-grey and bog myrtle, which grows in wetter areas and has an attractive eucalyptus-like fragrance. A notable feature of the Frosses Bog is the presence of the dwarf shrubs crowberry and cranberry. Crowberry is a low-growing evergreen with short, stubby, glossy-green leaves that spiral up the stem and berries that start green, turn pink, purple and then black. Cranberry has slender, wiry stems, small oval leaves and conspicuous berries that are red when ripe.



Uplands and blanket bogs

A journey into the Antrim Hills will pass upland fields that are dominated by common grasses and clumps of soft rush, though in places the view is enlivened with wildflowers typical of damp places. Look out for ragged robin with bright pink, raggedy, star-shaped blooms; lesser spearwort which is a member of the buttercup family and has yellow, cup-shaped flowers and the wonderfully-named devil's-bit scabious that has rounded, violet-blue flower heads on long stalks. These species-rich grasslands are associated with purple moor-grass and a range of rushes and sedges.

Other plants common in the hills include meadow thistle, autumn hawkbit and tormentil. Tormentil, which is low-growing with creeping stems and cheery flowers with four bright yellow petals, is said to have received its name because it was used in preparations to alleviate the torment of stomach cramps and toothache.

Moving onto higher ground, trees are absent, there are large tracts of unenclosed land and the open, windswept landscape includes extensive regions of upland heath, which develops on mineral soils or thin peats, and blanket bog. Dry heath tends to be dominated by ling, bell heather, bilberry and crowberry and often occurs on the margins of the uplands including some areas around Slemish, and on the northeastern fringe of the Garron Plateau at Galboly. Wet heath typically has a mixture of heather, cross-leaved heath, deergrass and purple moor-grass with an understory of mosses, often including *Sphagnum* species. West of Sallagh Braes there are areas of dry heath and also pockets of wet heath in hollows.



Left: Slemish

Above: Tormentil, near Carnalbanagh



Star Bog

Blanket bog generally occurs at altitudes of over 200m, where rainfall is high and temperatures are low. It can be several metres in thickness and cover large areas of flat or undulating landscape. The vegetation includes ling, bell heather, cross-leaved heath, deergrass, cottongrasses and several of the *Sphagnum* bog moss species. Like raised bogs, the more noticeable plants include cottongrasses which flower in early to mid summer, bog asphodel and, in late summer and early autumn, the purple and pink flowers of heathers and cross-leaved heath.

Many areas of blanket bog have suffered from drainage and cutting for fuel, have been reclaimed for agriculture or planted with conifers. The Star Bog to the northwest of Agnew's Hill is one such example: driving along Star Bog Road, on one side are rows of conifers planted to create Capanagh Forest and on the other side old, abandoned peat cuttings can be seen. Some lines of turf set out to dry show where hand cutting is still undertaken. In the hills to the west of Carnlough, in addition to

exploitation for fuel, in the early 1900s peat was cut and conveyed two miles by aerial ropeway to supply a factory near the town where it was used in a process to manufacture fertilizer. At Long Mountain, northwest of Ballymena, there are records for several notable plants in blanket bog and although some intact peatland and heathland survives, large areas have been affected by drainage, peat cutting and agricultural intensification. In the uplands immediately to the north of Carrickfergus there are only remnants of bogs, such as Keeran Moss near Slimero which has areas of heather heath on old peat cuttings and Rigg Moss, northwest of Ballycarry.

The largest remaining area of blanket bog in mid and east Antrim is at the Garron Plateau. Here a partnership among RSPB, Northern Ireland Environment Agency, Northern Ireland Water and local farmers is currently implementing a landscape-scale conservation initiative. This includes managing grazing and undertaking practical conservation work including blocking drains to maintain a high water table, encourage the growth of bog vegetation and prevent peat erosion.

A great way to explore these landscapes is to walk a section of the Antrim Hills Way. This starts at Glenarm and heads into the uplands to the south, passing Scawt Hill, Sallagh Braes and Agnew's Hill, and eventually arrives at Slemish. At Slemish there is a car park, information about local wildlife and heritage and a path to the summit that is well worth taking for spectacular views of the countryside. Another long distance footpath, the Dungonnell Way, winds through the uplands around Cargan, Glenariff and Garron.

A number of rare plants occur on the basalt scarps near the Antrim coast. Mossy Saxifrage is found on grassy scree slopes and rock faces and is locally abundant, though its distribution is becoming restricted because of excessive sheep grazing. Spring sandwort is present at Sallagh Braes, Knock Dhu, Scawt Hill, Garron and scarps at Glenariff. Least mountain bedstraw occurs on cliffs and screes including Knock Dhu and Garron. The only site for mountain avens in Antrim is at the cliffs at Knock Dhu. Sallagh Braes is the type locality for the hawkweed *Hieracium basalticola.* There are historical records for one-sided wintergreen, an evergreen perennial, at Sallagh Braes and also at Glenarm, Agnew's Hill and Cranny Burn though in a recent survey the only County Antrim site where it was noted was Cranny Burn. In addition, some parts of Sallagh Braes have diverse grassland fungi and the rocky scarps, ravines and scree slopes are one of the most important locations in Northern Ireland for mosses.



Mossy saxifrage, Knock Dhu

The blanket bog at Garron is the main Irish location for both few-flowered sedge and tall bog-sedge and the only Northern Ireland site for marsh saxifrage, a delicate yellow flowered perennial. Other rare

plants at Garron include bog orchid, alpine meadow-rue which occurs by Pollan Burn, and Irish lady's-tresses orchid which was recently discovered at Gortnagory, an upland site near Loughnatrosk on the southeastern margin of the Garron Plateau, and at a second site about one mile west of Gortnagory. Marsh honey fungus occurs at a site east of Dungonnell Dam, one of only four locations where this fungus has been found in the British Isles.



Carabus nitens

Garron provides habitat for some rare insect species, including a ground beetle with the Latin name *Bembidion geniculatum*. This is an inconspicuous black beetle associated with gravel beds by rivers, and is unlikely to be noticed. Much more visible is *Carabus nitens*, a quite large, brilliant metallic green and red coloured ground beetle that fishermen by the shores of the Garron lakes often see in spring. Although declining in mainland Europe, it is common in the peatlands of Garron.

The Antrim uplands are the main stronghold for the hen harrier in Northern Ireland. This raptor normally nests on the ground though, perhaps because of overgrazing or predation, in County Antrim it has been observed nesting in trees in forestry plantations. Hen harrier needs large expanses of open habitat for feeding, its prey comprising mainly small birds and mammals. Merlin, another raptor sometimes seen in the Antrim Hills, similarly used to be ground nesting and now often nests in trees on the edge of forestry plantations. It feeds in areas of moorland, moving to lowlands in the lean months of winter. Buzzard and peregrine falcon are also regularly seen in the Antrim Hills and yet another indicator of the importance of Garron is that this is one of a small number of sites in Northern Ireland where golden plover breed.

Red grouse occur in the Antrim Hills, feeding on young heather shoots and nesting in areas of taller heather. Some heathlands used to be managed for grouse by controlled burning to provide a variety of heather habitats. However a recent survey found that numbers are perilously low due to factors such as overgrazing, lack of management and habitat fragmentation. Many of the remaining populations are also isolated and therefore may not be viable. Red grouse in Ireland are said to exhibit slight differences in plumage to British birds and are thought by some to be a distinct race.

Curlew, which is perhaps the most evocative bird of the Irish countryside, with its haunting call and distinctive downwards curving beak, is unfortunately rapidly declining in numbers in Ireland. Upland



Sallagh Braes

rough pasture around Glenwherry provides habitat for one of the few remaining viable breeding populations of curlew, with 33 pairs in 2012. This area is also important for lapwing and snipe, as well as whinchat, a rare summer visitor to uplands in Northern Ireland, particularly in County Antrim. RSPB is undertaking regular surveys of breeding waders in this region and is working with local landowners to provide advice on the management of uplands.

At Glenwherry Hill Farm, Greenmount Agricultural College manages some areas for breeding waders and has developed a programme to encourage red grouse. This has involved reducing stocking levels of sheep on uplands, controlled burning and monitoring of heather on selected upland areas, control of predators (foxes and crows) and the provision of medicated grit which the birds peck at and store in the gizzard to break down their diet of heather. The project has been very successful and an added bonus has been an increase in the hare population. Projects are also being undertaken at Glenwherry Hill Farm to promote the hen harrier and red squirrel.



Urban and industrial land

Even in the most built-up urban areas there is usually some greenery within view; perhaps a park, gardens or even a derelict, overgrown gap site. These are places to find wildlife, particularly where there are greenways like hedgerows, an urban stream or avenue of street trees that form wildlife corridors and connect refuges. The People's Park in Ballymena is an excellent example of a large urban green space where there is woodland, grassland and wetland. The Mill Ponds by the Amphitheatre Leisure Centre in the heart of Carrickfergus is an important wildlife area that includes mature trees, hedgerows, scrub vegetation along a railway embankment, a stream and a pond with a family of swans. In the village of Martinstown, frogs and also newts have been spotted in a small pond recently created at Glenravel Community Park.



Left: Larne and Larne Lough *Above: Black Guillemot, Glenarm Harbour*

All kinds of man-made structures can become important wildlife sites. For example, black guillemots traditionally nest in crevices on rocky coasts but also make use of jetties and harbours. There are even stories that they used to occupy the cannon muzzles at Carrickfergus Castle! The best place to see black guillemot is at Glenarm Harbour, where they nest in holes in the stonework of the pier. Between spring and late summer it is sometimes possible to see up to 50 birds on the water at the marina and flying to and from their nests. They are attractive to watch and have a distinctive call – a high pitched, light, wailing whistle.



Peregrine watch, Beach Road, Whitehead

Large industrial premises can provide a variety of habitats suitable for rare plants and animals. Hares and foxes have been observed in the grounds of Kilroot power station, and there are stories of peregrine perching at the lights high up on the tall chimneys. At Ballylumford power station, wildflowers including bee orchid occur on thin well-drained soils on rocky infill next to the buildings.

Disused quarries are also often havens for wildlife. Plants found at the huge excavation at Magheramorne, by Larne Lough, include the hawkweed *Hieracium grandidens,* bee orchid and pyramidal orchid and local people recall sand martins nesting in the spoil heaps, peregrine perching on the cliffs and hares running around the old workings.

A former quarry at Beach Road, Whitehead, is now a local nature reserve and most years the cliffs are occupied by a family of peregrine that are a highlight for the annual spring birdwatch held at the site. A small gravel bank at the disused quarry at Glenarm until recently supported a colony of sand martins. The old limestone quarries by Cranny Falls have become wetlands and woodlands and the spoil heaps are now species-rich grasslands.

Urban areas are increasingly being used for imaginative projects to promote wildlife. One example is a scheme for swifts in Larne. Swifts commonly nest under the eaves of buildings and are a feature of our towns in late spring and summer, recognisable from their sickle-shaped wings, characteristic high pitched call and habit of forming 'screaming parties' that dash around rooftops. However their nest sites are often lost during renovation works and to provide a new location, swift boxes were recently incorporated into the clock tower of Larne Town Hall. The boxes are accessed via the louvres and to encourage birds, in early summer 2013 an amplifier and speakers with a recording of swifts calling was also installed. Within days there were sightings of swifts circling the tower, and hopefully in time they will take up residence.



Bee orchid



Mid and East Antrim local biodiversity action plan

Objective 1:
Help conserve habitats and species

- To undertake wildlife surveys and practical conservation work on a range of habitats across the region. Species and habitats selected for initial action:

  Lagoons in Larne Lough. Commission surveys of flora and fauna of coastal lagoons in Larne Lough. Information obtained about the lagoon at Larne will be used to contribute to development plans for this site.

  Blanket bog. Assist RSPB and Northern Ireland Water in monitoring water levels at blanket bog at Garron as part of the Sustainable Catchment Management Plan.

  Lowland raised bog. Work in partnership with NIEA and the Biodiversity Officer for the Causeway Coast and Glens council cluster to investigate options for managing water levels at lowland raised bogs by the River Maine.

  Ancient woodland. Contribute to the study and promotion of hazel/ash woodland throughout Mid and East Antrim and ancient woodland and parkland at Glenarm.

  Wet grassland. Examine ways of managing the wet grasslands at Ecos including rush control, grazing and grass cutting and the removal of willow biomass plantations.

  Red squirrel. Support the Glens Red Squirrel Group in setting up new local groups in Mid and East Antrim.

  Black guillemot. Develop a partnership among individuals and organisations to survey and promote black guillemot nesting at man-made structures along the Antrim coast from Carrickfergus to Garron including the important colony at Glenarm Harbour.

  Swift. Develop partnerships to identify and monitor swift breeding sites and investigate the possibility of installing swift nesting boxes in urban areas in Mid and East Antrim.

Left: Diamond Jubilee Wood, Whitehead

Common newt. Monitor the newt population in the pond at Glenravel Community Park, Martinstown and provide advice and assistance in managing vegetation in the pond.

White-clawed crayfish. Support the conservation of crayfish in the upper reaches of the Six Mile Water.

- To work in partnership with volunteers to map the distribution of rare plant and tree species, monitor and where appropriate discuss with NIEA and landowners options for site management and propagation through collecting seed or taking cuttings and transplanting to suitable sites. Species selected for initial action:

  Irish whitebeam, reported from sites in the Glenarm/Garron area.
  Juniper, found at sites along the east Antrim cliffs.
  One-sided wintergreen, reported from upland cliffs including Cranny Burn.
  Bog-rosemary, present at Sharvogues Bog.
  Sea kale, recently noted on beaches near Garron and Glenarm.
  Rock samphire, found on rocky beaches near Garron.
  Wood crane's-bill, present at Glenarm and Feystown Nature Reserves.
  Wood bitter-vetch, present at a road bank by Ballyboley Forest.
  Wood vetch, found mainly near the coast in County Antrim.
  Hare's foot clover, present by the coast path near Blackhead.
  Bristly oxtongue, found by the path to Blackhead.

- To survey and monitor invasive alien species and provide information on control measures.

- To support public bodies in Mid and East Antrim to further the conservation of biodiversity and ensure that biodiversity is taken into account in local strategies and development plans.

Objective 2:
Raise awareness of local biodiversity

- To increase public awareness of biodiversity and highlight threats to local biodiversity through a programme of public walks, talks and events.

- To publicise information about wildlife through the media including the BiodiversityNI website. Forward records to CEDaR, the Centre for Environmental Data and Recording, and details of biodiversity activities to BARS, the Biodiversity Action Reporting System.

- To investigate options for local environmental interpretation through web-based information, publications and signs at sites of wildlife interest.

- To encourage the creation of Local Nature Reserves at suitable sites.

Objective 3:
Involve people in biodiversity projects and develop partnerships

- To provide encouragement and support to key stakeholders, local environmental organisations and communities and promote partnership working.

- To develop local community wildlife projects such as wildlife surveys, tree planting/tree care, creating wildflower meadows, constructing bat and bird boxes and organising clean-up days.

We can all help wildlife



Seashore safari, Whitehead 2013.

Maintaining a healthy environment is not simply an add-on, it is essential for our future. Everyone has a part to play to help protect and promote biodiversity.

Get out, explore and take part

We are fortunate to have an extraordinary richness of plant and animal life in Mid and East Antrim. There are many easily accessible sites where wildlife may be observed and if you want to discover more, why not join a local walking club, bird watching group or environmental charity. A wide range of enjoyable environmental activities are also regularly organised through the council and by voluntary groups.

Citizen science

There are still many gaps in our knowledge about wildlife and everyone can help gather records. If you would like to know about wildlife identification training courses or are interested in surveying – bees, butterflies, birds, squirrels, wildflowers or whales – please contact the Biodiversity Officer.

Set up a scheme

Advice is available if you would like to set up a biodiversity project such as tree planting or making a wildlife pond in a community open space or school grounds.

Garden for wildlife

Start composting green waste, put up bird and bat boxes and minimise your use of chemicals. If you have space, give a tree a home in your garden, put up a bird table and spare some ground to experiment with a wildflower seed mix. Encourage birds and other wildlife by not tidying the garden too much and create a log pile where insects and fungi will thrive. Throw any old apples on the lawn for your local blackbird. Even if you don't have a garden you can brighten your home and attract bees and butterflies by planting flowers in a window box or putting up hanging baskets.

Shop for wildlife

Look at food labels before you buy: choose locally produced food, support organic farmers and sustainable farming, forestry and fishing.

Big benefits from making small changes to your life

We can all help eliminate waste and protect the environment by ensuring that we reduce, reuse and recycle. Buy products with minimal packaging. Help switch off global warming by keeping your energy use low. Insulate your house. When you can, take the train, bus or boat.

Talk to us

If you have suggestions, questions, ideas or concerns, please contact:
Mid and East Antrim Biodiversity Officer, Smiley Buildings, Victoria Road, Larne BT40 1RU
Tel: 028 2827 2313 Email: admin@larne.gov.uk

Overleaf: Blackhead path, Whitehead





Further information

If you would like to find out more about conservation in your area, contact the appropriate organisation listed below. Information about designated sites is available on the Northern Ireland Environment Agency (NIEA) web site. For forests with public access see the Forest Service web site. The location of parks and greenspaces are given in the local council website. Other protected areas managed by National Trust, Ulster Wildlife and Woodland Trust and are described in their websites.

Ballymena Birdwatchers Club - www.ballymenabirdwatchersclub.co.uk
Ballymena Borough Council - www.ballymena.gov.uk
Biodiversity in Northern Ireland - www.biodiversityni.com
Brighter Whitehead - www.brighterwhitehead.co.uk
Broughshane and District Community Association - www.broughshane@nacn.org
BTO - www.bto.org
Butterfly Conservation - www.butterfly-conservation.org
Carrickfergus Borough Council - www.carrickfergus.org
Causeway Coast and Glens Heritage Trust - www.ccght.org
Conservation Volunteers - www.cv.org.uk
Copeland Bird Observatory - www.copelandbirdobservatory.org.uk
Forest Service - www.dardni.gov.uk/forestry
Friends of Larne Lough. c/o 2 Branch Road, Drains Bay, Larne BT40 ITX
Glens Red Squirrel Group - www.glensredsquirrelgroup.com
Habitas - www.habitas.org.uk
Irish Whale and Dolphin Group - www.iwdg.ie
Larne Borough Council - www.larne.gov.uk
Lough Beg for Life - www.loughbegforlife.org
Maine Rivers Trust - www.maineriverstrust.org
National Trust - www.nationaltrust.org.uk
Northern Ireland Bat Group - www.bats-ni.org.uk
Northern Ireland Environment Agency - www.doeni.gov.uk/niea
Northern Ireland Environment Link - www.nienvironmentlink.org
Portglenone Enterprise Group - www.portglenoneenterprisegroup.co.uk
Royal Society for the Protection of Birds - www.rspb.org.uk
Six Mile Water Trust - www.sixmilewatertrust.co.uk
Transition Town, Whitehead - www.transitiontownwhitehead.org.uk
Ulster Wildlife - www.ulsterwildlife.org
Water Management Unit - www.doeni.gov.uk/niea/water
Woodland Trust - www.woodlandtrust.org.uk

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