

The Natural Environment of Edinburgh

“If I were to name the three most precious resources of life, I should say books, friends and nature; and the greatest of these, at least the most constant and always at hand, is nature. Nature we have always with us, an inexhaustible storehouse of that which moves the heart, appeals to the mind, and fires the imagination, - health to the body, a stimulus to the intellect, and joy to the soul.”

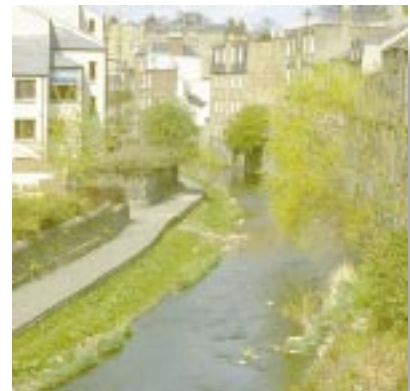
John Burroughs
Writer and naturalist (1837-1921)

The natural habitats of Edinburgh owe much to its geology and geographic position, with its many hills and steep rock faces, its low lying alluvial plains and raised beaches and its 15 miles (24kms) of coastline. Its north-easterly position and proximity to the North Sea provide a cooling influence, shortening its seasons and frequently exposing it to cold Arctic air-streams during the winter months. By far the greatest influence on Edinburgh’s natural environment, however, has been human settlement.

After the retreat of the last ice-sheet about 15,000 years ago, the land surface was recolonised by plants, animals and other organisms moving in from southern parts of Europe, which had escaped the ice. Most of what is now Edinburgh would have been covered in oak forests, even topping the Pentland Hills. Only rock-faces, lochs, wetlands and shorelines will have been without tree cover. Now, all but a few remnants of the ancient forest have gone, cleared for the demands of settlement and cultivation, for ship-building and wars and a significant destruction due to a sustained effort to rid the area of highway robbers and wolves for whom the forest was a refuge.

The re-establishment of woodland has been practised on a small scale since the end of the 17th century, when farmers and landowners began planting trees for sheltering steadings and fields, for boundaries and privacy and for landscape value. They not only planted native trees, but also beech, sycamore and exotic conifers, as well as woodland shrubs like rhododendron and cherry laurel, and herbaceous species, like few-flowered leek and pink purslane, which have now become naturalised in many wooded areas. The designed parklands of estates like Dalmeny and Cammo, the forestry plantings in the Pentland Hills and early plantings in areas that have now become urban, such as Corstorphine or the Hermitage of Braid, furnish Edinburgh with a valuable resource of long-established woodland habitat. When parks were created in the city, they were planted with ornamental species and with species that were relatively hardy in the harsh urban environment, like sycamore and English elm. In recent years, the City of Edinburgh Council’s Urban Forest Strategy and Community Woodland schemes have seen a rapid increase in tree-cover in open spaces, parks and city streets. Nevertheless, woodland still covers only 6% of Edinburgh’s land surface.

One of the benefits of opening up the land through tree clearance in the past has been the creation of grasslands. This habitat, almost always dependent on human intervention, is potentially of great value for a diversity of grass, herb and invertebrate species, together with the larger animals that feed on them. In Edinburgh during the last hundred years, most grassland has been subject to intensive improvement for agriculture, leaving only small areas of semi-natural grassland. The best of these are some isolated patches of unimproved calcareous grasslands on shallow mineral-rich soils in Holyrood Park and Craiglockhart Hills. Larger areas of tall, coarse grassland can also be found in Holyrood Park and Blackford Hill, with unimproved species-poor acidic grasslands still to be found on the fringes of the Pentland Hills.



Lochs and wetlands too will have naturally been more extensive than they are today. In the very centre of Edinburgh two large historic lochs have been lost. The Nor’ Loch was artificially created in 1438 for defensive purposes by damming the small burn which ran through the site of the present-day Princes Street Gardens, and the Meadows was the site of the Burgh Loch, which was for many centuries Edinburgh’s main water supply. Some historic lochs have survived, however, as at Duddingston and Lochend, and many artificial ponds, lochs and reservoirs of variable nature conservation value have been created and lost over the passing centuries.

Other wetlands have not fared so well. The Romans frequently drained marshes that interfered with their martial plans, and in the millennia that followed, both urban and agricultural land was subject to drainage schemes both large and small. Nevertheless, some wetland gems remain: Red Moss, a small raised bog nature reserve, the fens of Duddingston Loch nature reserve and, in the Pentland Hills, small wet flushes supporting rare plant assemblages.

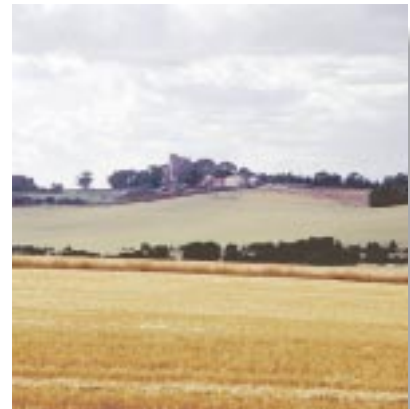


Edinburgh's shorelines have perhaps fared better than other natural habitats. Although several kilometres are occupied by docks, harbours and sea-walls, there are still stretches of shoreline which are recognised as Sites of Special Scientific Interest for the internationally important numbers of wintering waders and wildfowl which feed and roost there. The Forth Estuary itself is a proposed Special Protection Area and Ramsar site.

Edinburgh's underlying geomorphology has in many ways ensured the retention of significant local biodiversity. The volcanic plugs, sills and intrusions, which give the city its unmistakable skyline, also contribute hugely to the biodiversity and natural amenity of the urban landscape. Arthur's Seat, Corstorphine Hill, Blackford Hill and the Braids, the Craiglockhart Hills - all remain as largely undeveloped spaces where nature has been encouraged to reassert itself. Even Castle Rock itself and Calton Hill have steep sides, resistant to development, that support luxuriant regenerated tree-cover and specialised rock-face flora.

Away from the city centre, the geology breaks up the rural hinterland of Edinburgh with ancient rocks of volcanic origin protruding through the flatter sedimentary layers to form low hills of doleritic rock. These were once extensively quarried and sites like Craigie Hill and Dalmahoy Hill are now valuable wildlife sites. The volcanic heritage also provides us with the heather and grass covered uplands of the Pentlands.

Where agriculture predominates, as it does over a surprising half of the land surface covered by the Action Plan, a man-made environment with a diversity of habitats provides Edinburgh with a reservoir of wild plants and animals. Although 75% of farmed land is under cultivation and the remaining 25% set down to intensively managed grassland supporting dairy, beef and sheep, cultivated farmland may seasonally support a wide range of nesting and feeding birds or supply nectar for insects, while pasture may be used by birds such as wild geese, or in wetter areas, lapwing, snipe or curlew. Farms will also have hedgerows, dykes, uncut headlands and field margins of wild grass and herbs, field boundary trees, forested shelter-belts and woodland, tracks, wetland, ponds and ditches, an ever diminishing area of semi-improved grassland, and a variety of farm buildings suitable for nesting and roosting bats, barn owls and swallows.



Linking the rural outskirts with the urban centre, are rivers, burns and waterways, roads, railways and cycleways. These all support, to a varying extent, woodland, hedges and grassland verges, which are not only capable of being rich habitats in themselves, but provide crucial wildlife corridors that afford animals and plants the means of travelling or dispersing into the very heart of the city, into our urban nature areas, parks and gardens.

Although perhaps not the most auspicious of environments, Edinburgh's buildings should not be ignored as a wildlife resource. Buildings and walls are host to a surprising range of invertebrates, ferns, mosses and lichens, while house sparrows, pigeons, starlings, collared doves, swifts, house martins and kestrels all make use of city buildings for roosting and nesting. In 1881 a peregrine falcon even graced the spires of St Mary's Cathedral for a time.

It is from this natural wealth, that the Edinburgh Biodiversity Action Plan takes its reference.

