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# Auchinoon Brae near Harperrig Reservoir geology and wildlife

(Front cover)

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## Location

Grid reference: [NT 09190 61733]

## How to reach Auchinoon Brae

By car or bike: take the A70 either from Edinburgh or via West Calder (off the A71), park in the lay-by [at NT 092 617] on the north side of the road beside the quarry. However, access is to the lay-by only; the quarry is on private land. Be careful of other vehicles accessing the lay-by and the fast moving vehicles on the road. The blind crest to the brae and the sharp bends to the west of the reservoir are accident blackspots.

The quarry lies adjacent to grazing land for sheep. Please keep dogs under control particularly at lambing time (April to June) and tupping time (November to December). Nature walks into the Pentland Hills can be taken from the parking place near the west end of the reservoir off the no-through road to Cairns Farm and to the east from a car park on the other side of the road at Little Vantage.

## Geology

### Nature walks

A nature walk can be taken from the small car park west of the reservoir off the no-through road to Cairns Farm. The walk crosses the bridge to Cairns Farm and skirts the ruins of Cairns Castle, of which only the almost square, main tower rising to three storeys can be seen. It was built in the fifteenth century for George Crichton, who was later made Earl of Caithness by James II.

Another starts from a car park to the south of the A70 at Little Vantage and heads south across the valley and up and through Cauldstane Slap.

### Why do geological features such as Auchinoon Brae need caring for?

Geology has a great influence on everyday life including this beautiful landscape and its management. Soils and rocks contribute to the essentials of life such as water and raw materials for manufacturing and construction. As land is needed for development of roads and buildings, mineral extraction, forestry and agriculture, it becomes necessary to consider protecting informative geological features from damage, destruction or burial.

Contact: [Edinburgh Geological Society](#) email: [labrigs@bgs.ac.uk](mailto:labrigs@bgs.ac.uk)

If you need further information about the Pentland Hills Regional Park please contact the Natural Heritage Service, Hermitage of Braid, 69a Braid Road, Edinburgh, EH10 6JF. t: 0131 529 2401 e: [pentlandhills@edinburgh.gov.uk](mailto:pentlandhills@edinburgh.gov.uk) online: [www.pentlandhills.org](http://www.pentlandhills.org)

Lothian and Borders GeoConservation A committee of the Edinburgh Geological Society, a charity registered in Scotland No SC008011. It is a member of the Scottish Geodiversity Forum and GeoConservation UK

## Geology and wildlife

## Introduction

Auchinoon Brae is a prominent feature on the A70 road or Lang Whang, about 12 miles from Edinburgh on the way to Ayr. It lies on the flank of Auchinoon Hill in open hill country in the southern part of West Lothian and the Auchinoon farmstead is situated farther east and south of the A70. Much of this road is over elevated exposed moorland and over the crest of this brae snow drifts can build up in wintertime. Legend has it that Robert Burns passed this way on his way to Edinburgh and also Burke and Hare brought bodies for the Edinburgh anatomy school along this road.

This glacially moulded rise, at an elevation of about 300m, affords a beautiful vantage point to the Pentlands Hill looking south across the Harperrig Reservoir. In fact the locality lies on the north-western boundary of the Pentland Hills Regional Park.

Auchinoon Hill is roughly aligned NE–SW parallel to the A70 and the valley to the south contains the headwaters of the Water of Leith. The Harperrig Reservoir lies in the valley which was dammed in 1859 to create a compensation reservoir to control the flow in the Water of Leith to the mills downstream towards Edinburgh.

This landscape has been moulded by the Quaternary ice sheets which moved north-east towards the Firth of Forth leaving hills formed by the harder rock-types.

The layby on the north side of the A70 about 1 km north of the Harperrig Reservoir and 4 km south of Livingston, lies beside the Auchinoon Quarry, a small pit in hard igneous rock. The excavation was made to produce road stone or aggregate, most likely for the local roads.

The quarry is dug into a sill of dolerite, an igneous rock sandwiched between layers of Carboniferous sedimentary strata. There is actually a larger sill of similar rock which caps Auchinoon Hill.

## The quarry

The quarry itself was excavated in a dolerite (microgabbro) sheet-like intrusion which dips 15 to 20 south-east within sedimentary beds of Lower Carboniferous age, that is about 330 million years old.

The dolerite is a medium-grained, dark grey rock of basaltic composition intruded later during the Carboniferous era. The dark spots seen in the doleritic rock are small gas bubbles formed in the molten rock which are now filled with chlorite. The topmost metre or so of the excavation consists of sedimentary rocks (paler rocks in the cover photograph) which are hardened by contact with the molten intrusion

The sedimentary rocks here consist of interbedded grey and brown siltstones and mudstones, part of the Gullane Formation of Carboniferous age. A full sequence of the formation also includes sandstones, coals and thin marine beds in cyclic deposition typical of the Carboniferous Period.

The rocks in the quarry are dipping south-east towards the reservoir on the north side of an open syncline (a trough structure), in beds lying above volcanic lavas of the same age as those around Arthur's Seat. The centre of the syncline underlies the reservoir, whereas the East and West Cairn hills to the south, that are formed of harder older Carboniferous sandstones, dip towards us on the other side of the syncline.

## The reservoir

Harperrig Reservoir covers 96 hectares and although it lies within West Lothian, it is owned by Edinburgh City Council as part of the Water of Leith flood prevention scheme when it took over ownership of the reservoir from Scottish Water in 2007. West Lothian Council propose to make it part of a Local Nature Reserve after consulting the land owners and other interested parties. Around the freshwater habitat are marsh and swamp areas including rushes and sedges as well as Floating Sweet Grass and Bog Pondweed.

The reservoir is a refuge for over wintering birds and waders; also commonly seen birds in the area are buzzards, gulls, owls, heron and lapwing. Smaller birds such as finches live among the pine trees and scrub to the west of the reservoir, where in the marshes otters have also been recorded.

Fishing rights are shared between the bank owners, collectively known as Harperrig Fisheries Ltd. The waters are stocked with Brown Trout up to 2.5lbs in weight to supplement the wild population. Fly fishing can be done from the bank or hired boat between March and October. Day Tickets and seasonal memberships can be obtained from various outlets throughout the Lothians.

## Figures

(Front cover)

(Figure 1) Location map.

(Figure 2) Harperrig Reservoir.

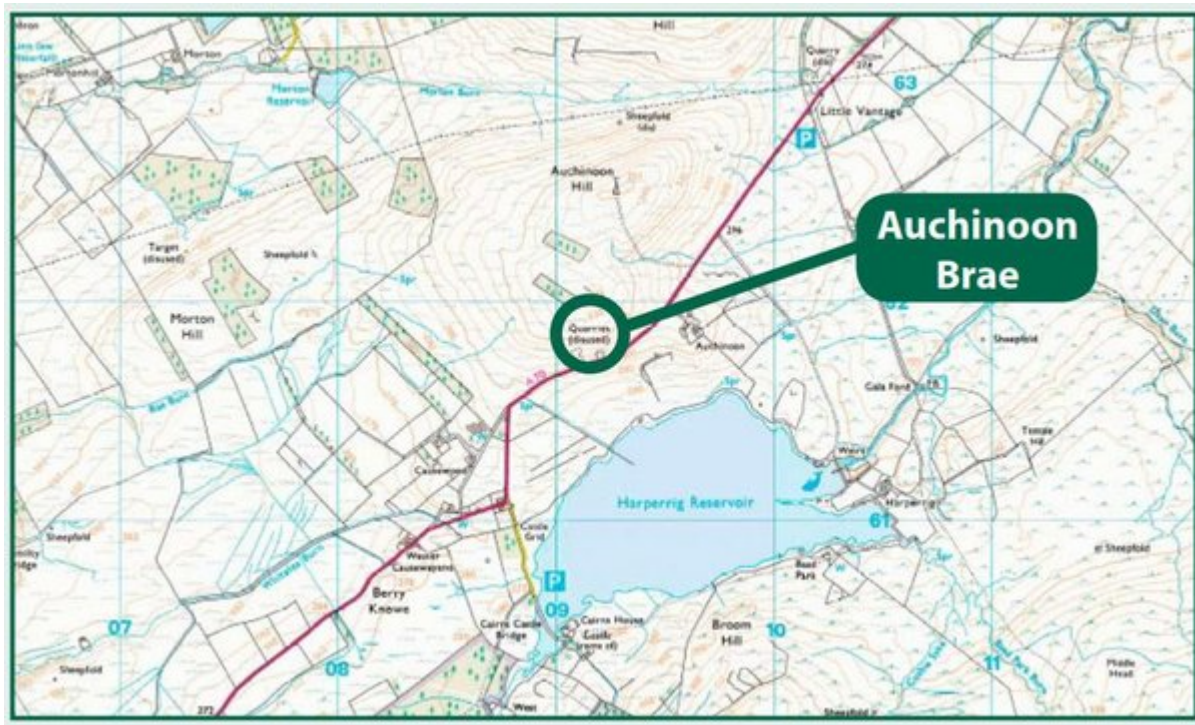
(Figure 3) Auchinoon Brae quarry.

(Figure 4) Vertical section through the rocks at Auchindoon Brae showing the open syncline structure.

(Figure 5) Harperrig Reservoir. Cairn House and the remains of Cairn Castle in the trees.



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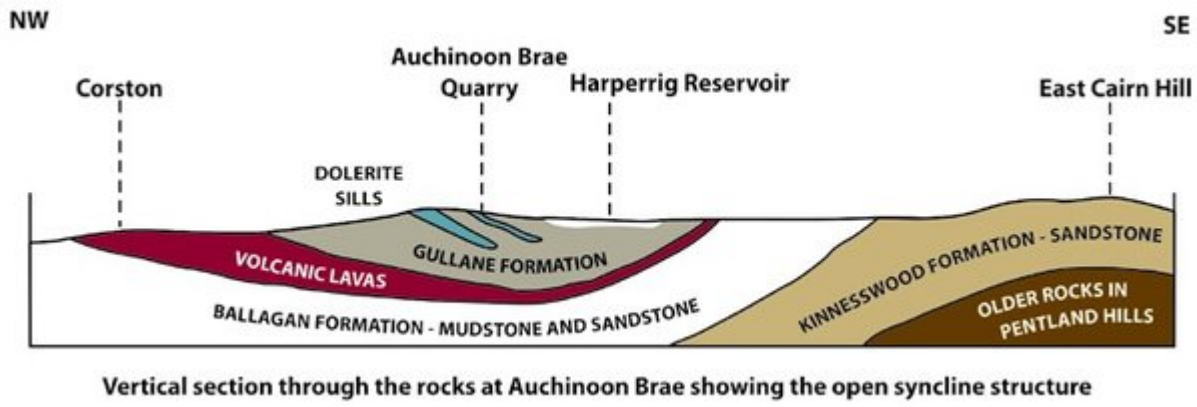


(Figure 2) Harperrig Reservoir.





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