
GLENACARDOCH POINT

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OS Grid Reference: NR662378

Highlights

The coastal landforms at Glenacardoch Point comprise an assemblage of shore platforms and raised beach deposits. The site contains representative examples of all the principal landforms and deposits recognised in the south-west Highland region. These have resulted from sea-level change since the retreat of the last ice-sheet.

Introduction

Glenacardoch Point lies on the west coast of the Kintyre peninsula. The site comprises ac. 2 km length of coastline (between NR 667384 and NR 659366), and extends 0.25–0.55 km inland. It is important in demonstrating two shore platforms and a sequence of raised beach deposits which provide a record of sea-level changes in the south-west Highlands. Little research has been carried out on the site. Apart from a few brief mentions in the early literature (Nicol, 1852; Hull, 1866; Sinclair, 1911), the only recent work is by Gray (1978a) who mapped and levelled the two shore platforms.

Description

Several accounts of former shorelines in Kintyre appeared in the early literature, drawing attention to raised and intertidal platforms with well-developed rock cliffs and caves (Nicol, 1852; Hull, 1866). Sinclair (1911) also made an important observation that raised sea stacks on some of the platforms were covered by till and therefore pre-dated a period of glaciation. The geomorphology of the site is shown in Figure 10.3, and Figure 10.4 is a generalized cross-profile. As can be seen from these figures, the site consists of a series of terraces of marine origin. Four main features or groups of features can be recognized. The oldest is a till-covered platform occurring over a distance of about 400 m at, and immediately south of Glenacardoch Point, though poorer fragments occur both to the north and south. Till is exposed in a section in the cliff behind the platform (at NR 660377), and at this point the rock platform can be seen clearly to extend inland below the till (Gray, 1978a, p. 155). The platform at this point lies at 13.1 m OD. It is cut by a number of geos, and its front slope forms the low backing cliff of a second, lower, intertidal platform at 0.6 m OD.

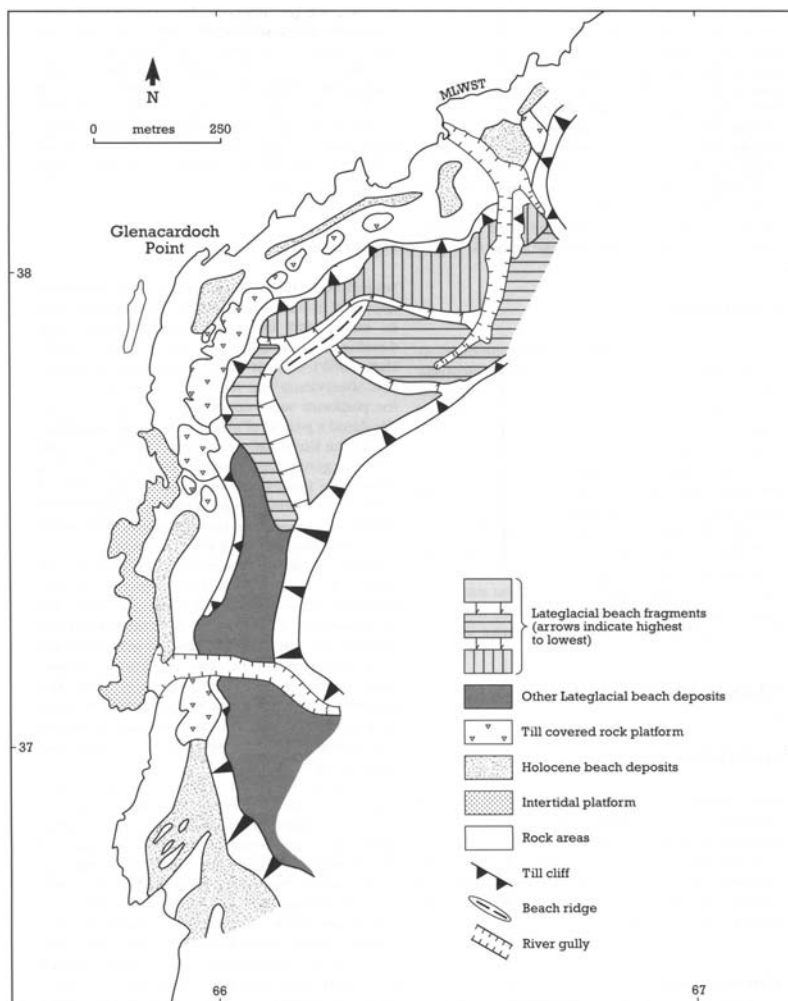


Figure 10.3: Geomorphology of the Glenacardoch Point area.

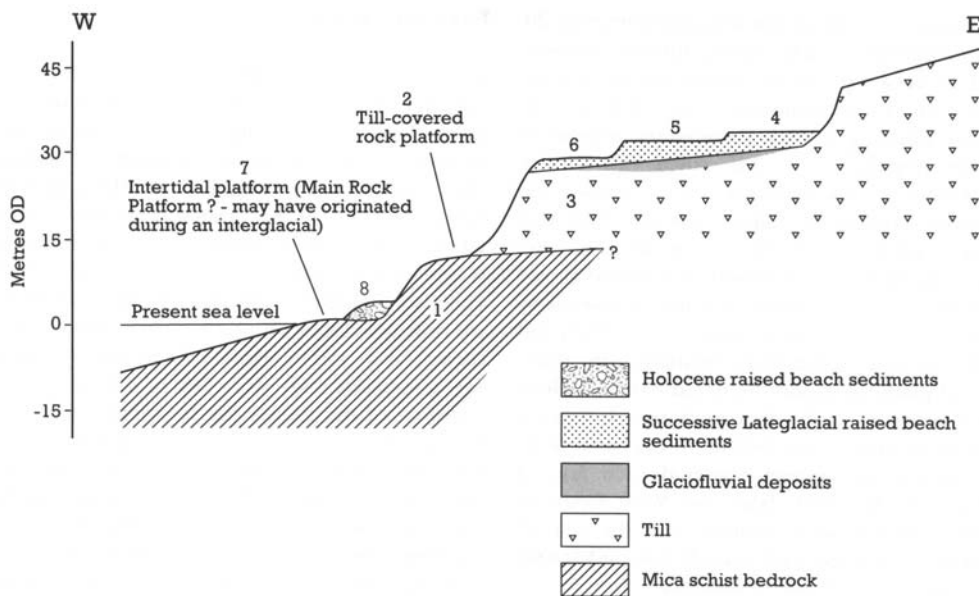


Figure 10.4: Coastal profile at Glenacardoch Point showing the relationships between the morphology and succession of the features and their probable sequence of formation (1–8).

In several places the rocky coast immediately above sea level is overlain by a thin veneer of

Holocene raised beach sediments, the clearest Holocene beach being at the extreme south of the site where a terrace, 100 m or more wide and a few metres above OD, is backed by the 20 m high till cliffline that runs through the site.

A higher terrace complex of raised beaches is present above this till cliffline. At least three levels occur immediately above Glenacardoch Point itself and, although these have not been levelled, the photogrammetrically determined contours on the 1:10,000 map of the area indicate that the three levels lie between about 28 m and 34 m OD. A possible storm ridge occurs at the front edge of the highest level, and at the back edge there is a further low till cliff. A section in the middle beach terrace (at NR 665378) reveals 2 m of well-bedded sand and gravel and (at NR 666381) sections in a stream valley show these beach sediments overlying till and glaciofluvial deposits.

Interpretation

The interpreted relationships between the different features is summarized in Figure 10.4, together with the probable sequence of formation. The oldest feature is the till-covered platform which pre-dates at least the main Late Devensian glaciation represented by the till. Following deglaciation, the till was trimmed by the sea and a sequence of Lateglacial beaches, now isostatically uplifted to c. 28–34 m OD, was formed. Subsequently, sea level fell to close to its present level and the platform in the present intertidal zone developed. From the overall platform distribution in Kintyre and neighbouring areas, Gray (1978a) suggested that the intertidal platform at Glenacardoch Point correlates with the Main Rock Platform of western Scotland either formed or last occupied during the Loch Lomond Stadial (Gray, 1974a, 1978a). During the Holocene, sea level once again rose, resulting in deposition of the beach gravels that occur below 10 m OD.

Glenacardoch Point is important in two main respects:

1. Till covered low-level platform. It is one of the few sites in Scotland where a low-level shore platform can clearly be seen to pass below till (see Port Logan and Dunbar). Similar situations are common in Ireland, but on the Scottish coast the Kintyre peninsula provides the best examples. Neighbouring equivalent sites a few kilometres to the south between Bellochantuy and Westport have been disturbed. The succession demonstrates that the platform pre-dates at least one glacial episode and although much work remains to be done on dating and correlating the platforms of western Britain, current opinion regards such low-level, till-covered platforms as having formed during interglacials. It is probably part of a suite of subhorizontal, low-level platforms in western Britain (Sissons, 1981a).
2. Sequence of sea-level changes. The site is also notable in preserving, within a compact area, evidence for several phases of sea-level change. It is important for demonstrating the morphological and stratigraphical relationships between several Scottish raised beaches and shore platforms (see also Milton Ness and Kincaid Point). Particularly helpful in this respect is the till, since this clearly overlies a rock platform yet is overlain and partly eroded by raised beaches. Although the latter cannot be dated at this site, comparison with elsewhere in Scotland allows division of the raised beaches at Glenacardoch Point into Lateglacial (>10 m OD) and Holocene (<10 m OD). Similarly, the intertidal platform cannot be dated, but altitudinal comparisons with other platforms in Kintyre suggests that it may belong to the Main Rock Platform of western Scotland (see Isle of Lismore, Northern Islay and West Coast of Jura) which many authors over the last 15 years have suggested is Loch Lomond Stadial in age (but see Isle of Lismore).

Conclusions

The landforms and deposits at Glenacardoch Point are important since within a 2 km stretch of coast it is possible to establish and demonstrate most of the major elements of the recognized sequence of sea-level changes which occurred in the south-west Highlands during Quaternary times. Of particular interest is a very clear example of a low-level, coastal shore platform overlain by glacial deposits (till), indicating that the former pre-dates at least one glaciation. Glenacardoch Point is therefore both a representative site and a valuable component in the network of sites demonstrating sea-level changes.

Reference list

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