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Island landscapes: Some preliminary questions

Oliver Rackham

Cambridge Centre for Landscape and People and Corpus Christi College, University of Cambridge, UK

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Abstract The ESLAND Project (<http://www.eslandproject.eu>) seeks to investigate 'European culture as expressed in island landscapes'. All the world's islands, except perhaps those of the high Arctic and high Antarctic, are cultural landscapes: the product of interactions between the environment, plants and animals, and human cultures. Any cultural landscape, whether of an island or otherwise, accumulates the results of such interactions, which typically go back at least for centuries and often involve more than one culture. For example, in the eastern half of the island of Tasmania, English settlers tried, with varying success, to replicate the hedges and fields of their distant homeland, to the extent of importing hawthorn and elm trees as well as wheat and sheep. This expression of European culture, dating from the early to mid nineteenth century, is superimposed on a pre-existing savanna of scattered giant eucalyptus trees, another cultural landscape resulting from thousands of years of land management by Tasmanian Aborigines.

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Introduction

European culture involves not only people's intentional actions but their inadvertent or incidental actions and their inactions and defaults, which tend to be especially significant on islands. Many an oceanic island has had its ecology and landscape irrevocably altered by rats escaping from a passing ship, or by goats left behind to feed future shipwrecked sailors. The landscape of Tasmania has been profoundly altered by the suppression of the fires that were part of its ecology: fear of fire

is one of the characteristic differences between English and Aboriginal culture. Another European characteristic is a passion for mixing up all the world's trees and flowers, often with a very different result from what the originators intended: thus the Chinese tree-of-heaven (*Ailanthus altissima*), introduced to Crete in the nineteenth century as an ornamental (by Sir Arthur Evans, the archaeologist?), has spread uncontrollably outside gardens and is now one of the island's commonest trees.

Island cultural landscapes thus depend not just on the most recent human culture but often on a succession of previous cultures, superimposed on the landscape before human contact; they may depend on the properties of the island's original plants and animals, and ultimately on the making of the island itself. This applies especially to distant oceanic islands, most of which had no experience of land mammals nor adaptation to them, and where human contact typically had catastrophic results. For example Easter Island (Rapa Nui), far out in the Pacific, lost all its palm-trees, either because Polynesian settlers

E-mail address: or10001@cam.ac.uk

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cut them all down or because European rats, introduced by visitors in 1722, ate all the seeds. Lack of resistance either to stone axes or to rats doomed the palms; which it was is controversial (Hunt and Lipo, 2011) and may never be settled, because every last palm is gone and no experiment is possible. Islands that had native mammals, such as Sardinia or Crete, have a less violent history of human contact: their plant life was already adapted to browsing and less easily destroyed. Sheep and goats took the place of native browsers and grazers, and many components of the present cultural landscape are inherited from the pre-human ecology.

What is an island?

An island should be a tract of land surrounded by water, but in English and many other languages this definition is not straightforward. There are islands surrounded by peatlands, such as the Isle of Ely in England and many in Ireland. Islands merge into peninsulas. In S England, St. Michael's Mount is isolated at high tide but joined by a causeway at low tide; the Isle of Portland is connected to the mainland by a shingle-spit and a bridge, but has that characteristic island feature a high-security prison. The Isle of Thanet in SE England is cut off by an insignificant (though formerly tidal) stream. The Isle of Purbeck in S England is a peninsula connected by a high ridge that never had a water barrier. The Île de France, the countryside around Paris, makes no attempt to be surrounded by water. Many inland places are called *Ynys* 'island' in Welsh or *Nisi* in Greek: the modern observer finds it difficult to detect anything insular about them.

Writers often claim to be able to count the number of islands in, for example, Greece or the Isles of Scilly, but these numbers are usually arbitrary because of problems of definition. Islands are fractals: the number of islands on a map increases without limit as the scale of the map gets bigger. Tides create further problems of definition: does an island count if it is joined to another island at extreme low tide?

How old is the island? What type of island is it?

The study of island landscapes begins by investigating the origin of the island and asking how long it has been an island. An island that is a fragment of an ancient continent, like New Caledonia, will be very different from islands of ancient or recent volcanic origin.

Oceanic islands are those distant enough to have no close connexion with a continent, for example Iceland and the Canary Islands. They tend to be of volcanic origin, and usually have no native land mammals except bats. Typically they have been isolated for tens of millions of years.

Offshore islands are those close to continents but separated by sea deep enough for them to remain islands during ice ages when sea-level is lower, for example Crete and Cyprus. Typically they have been isolated for millions of years. The limiting depth is usually about 120 m, but may be more or less than this because of local emergence or subsidence.

Land-bridge islands are separated by shallow seas that become land during ice ages: thus Britain was joined by land to Europe during the last glaciation, but Ireland may not have been joined to Britain. Such islands have been isolated for at most 10,000 years.

Island environments and wildlife

Climates

Islands tend to be drier than the mainland (unless they have mountains high enough to attract rainfall). Their oceanic climate makes them more windy, more foggy, cooler in summer and warmer in winter, less frosty.

Animals

Animals play a large part in determining vegetation and therefore landscape. Oceanic and offshore islands tend to have, or have had, different wild animals from the mainland. Human contact, even briefly from passing ships, tends to introduce the universal mammals that accompany humanity (rat, goat, pig, cat) and to begin a process of exterminating any special island mammals. Questions to ask include the following:

Were there land mammals before human contact? (Oceanic islands tend not to have had them, but sometimes had lizards and flightless birds.)

Were there *endemic* mammals (peculiar to the island) before human contact? (Several Mediterranean islands once had peculiar elephants, hippopotamuses etc.)

Are there any living endemic animals (e.g. small mammals, frogs, insects, snails)?

Are any animals missing from the island fauna? (Many offshore islands lack badger or hedgehog.)

Have any endemic island races of animals developed since human contact? The

Are any animals now confined to the island because they have become extinct elsewhere (e.g. red squirrel, which survives on the British islands of Anglesey, Isle of Wight, and Brownsea Island)?

Many islands have had unbalanced faunas. The Mediterranean islands had large herbivores but no effective carnivore. In successive generations they got smaller (elephant the size of a calf, hippopotamus the size of a pig). Newfoundland, in contrast, was biased towards carnivores.

Endemic species of mammal have often been replaced by introduced mammals, some of which in time evolve into neo-endemic races or subspecies. Thus the wild goat of Crete is derived from a Neolithic domestic goat. The small, remote Scottish islands of St. Kilda, inhabited since the Neolithic, have a special field-mouse and (formerly) a special house-mouse.

Plants and vegetation

Peculiar island plants tend to be more persistent than island mammals. Thus Crete has lost all its endemic mammals except a shrew, but still has all its known endemic plants, which amount to about one-seventh of the total flora.

Island plants may behave differently from the same species on the mainland. Thus prickly oak, *Quercus coccifera*, is the commonest wild tree in Crete and in Greece. In Greece it is a lowland tree, but in Crete it ascends nearly to the tree-limit at 1700 m in the mountains; presumably it is a special insular variety.

Islands may have peculiar introduced plants: thus in the Isles of Scilly a common plant is *Gladiolus byzantinus*, a plant apparently of garden origin that is a relic of the trade in cut flowers.

Islands may be less tree'd than the mainland. Thus in Scilly there are virtually no native trees except *Salix cinerea*; this is not for environmental reasons, for elms (*Ulmus sarniensis* and *glabra*), which may be introduced, grow into big trees.

Islands may have plants that do not survive on the mainland. In Scilly there is no Dutch Elm Disease, and elms grow into big trees, whereas in adjacent Cornwall most elms have been reduced to suckers.

Arrival of humanity

The first question to ask is, When was the first human presence? Many islands are thought to lack Palaeolithic people, but this may be because evidence is hard to find. Crete was thought to have had no human presence earlier than Neolithic, c.8100 years ago, but in 2006 Palaeolithic and Mesolithic tools were found on the outlying islet of Gávdhos (Kopaka and Matzanas, 2009) and in 2008 on Crete itself (Mortensen, 2008). It is now likely that people reached Crete in a previous interglacial, which raises the possibility that they exterminated the endemic mammals (whose disappearance is otherwise unexplained).

What was the impact of humanity? On oceanic islands, which had no experience of mammals at all, human contact was often disastrous: not so much from people themselves as from rats, cats etc. which exterminated endemic animals, and of domestic livestock which destroyed native vegetation that had no resistance to browsing. This is well documented for St Helena (Cronk, 2000). In the north Atlantic, Madeira and the Azores, both first discovered in the middle ages, fared almost as badly. The landscape consequences of the prehistoric discovery and settlement of the Canary Islands are as yet little known.

On offshore islands the impact of people would have been different and less dramatic. The vegetation would already have been adapted to herbivorous animals. Cattle and sheep would have replaced elephants and hippopotamuses, possibly after an intermediate period without browsing animals at all and in consequence with increased vegetation. The result would be a landscape not utterly different from the pre-human, although somewhat altered, for domestic animals would not have the same browsing preferences as wild beasts.

On islands where the vegetation was combustible, fires would probably be more frequent and less fierce after human contact than when lightning was the only source of ignition. (Very small islands (<1 ha) burn rarely if at all because of insufficient area to intercept lightning (Wardle et al., 2012).)

Development of human cultural landscapes

Each island has its own succession of human cultures, which may or may not be an extension of those on neighbouring islands or the mainland. Some of these left an impact on the present landscape.

Sardinia has a very distinctive Iron Age culture (last millennium BC), based on at least 4500 *nuraghes*, castle-like towers in conspicuous places, which are landscape features in their own

right, along with the remains of hamlets and villages around them: a very different pattern from the towns and large villages of present Sardinia (Grove and Rackham, 2001). *Nuraghes* are peculiar to the island and are absent even from neighbouring Corsica. On Crete the distinctive human culture was Bronze Age (2900–1150 BC), but this has left fewer monumental structures that have an obvious impact on landscape. There was another period of dense population, with its own, though less distinctive, human culture in the Late Roman (300–800 AD). Both periods have left a scatter of archaeological sites: the extent to which either has contributed to the present *landscape* of Crete is a matter for investigation (Rackham and Moody, 1996).

Islands were colonised by settlers coming from somewhere else, some of whom tried to re-create the landscape of the homeland varies. Thus the Canary Islands were a colony mainly of Valencia in Spain, and had an irrigation system based on Valencian models (which they later exported to the Canarian colony of San Antonio, Texas) (Glick, 1972). In Tasmania there is now a mosaic of Aboriginal and English types of landscape, now giving a conservation problem as the great eucalypts, stranded in farmland, die and are impossible to replace (Figs 1 and 2).

Special features of islands

Many features of island landscapes are not special to islands. Hedged fields, strip cultivation (as on Sardinia), terraces (as on Greek islands), mining: these occur, or not, on islands much as on the mainland. Islands tend to have more dispersed settlement than the mainland (hamlets or single houses rather than villages or towns), but there are many exceptions, such as the large villages of Majorca and the small towns of Sardinia.

Islands may develop their own dialects or languages (Gaelic of the Isle of Man). They may retain a language that died out on the mainland (Scots Gaelic in Skye and the Western Isles of Scotland); or they may lose the local language earlier than the mainland (Cornish in the Isles of Scilly). Such changes affect landscape through place-names.

Islanders may or may not be specialist seafarers. Crete (except for its remote province of Sphakiá) was historically not much of a seafaring island, in contrast to the smaller Greek islands of Hydra and Spetsai.

Islanders, like other coast-dwellers, are at risk from pirates: in 1627 African corsairs raided as far as Iceland. Many islands with fewer than a thousand people were inhabited only intermittently, whenever the seas were secure. Even the east end of Crete was abandoned in the middle ages. Inhabitants of larger islands might be pirates themselves. Small islands might be seized by pirates as forward bases, as was Gávdhos south of Crete in the early 17th century.

Some islands have been fortified, either as naval bases or to prevent them from becoming someone else's naval base. The most famous among many examples is Malta, headquarters of the Knights Hospitallers, pirate-monks, from the 16th to the 18th century, and again a naval base against Hitler in World War II. Supplying a big garrison could affect the economy even of a large island such as Crete, without however necessarily altering the landscape.

Islands tend to attract shipwrecks, especially the Isles of Scilly and their French counterpart Ushant (Ouessant).

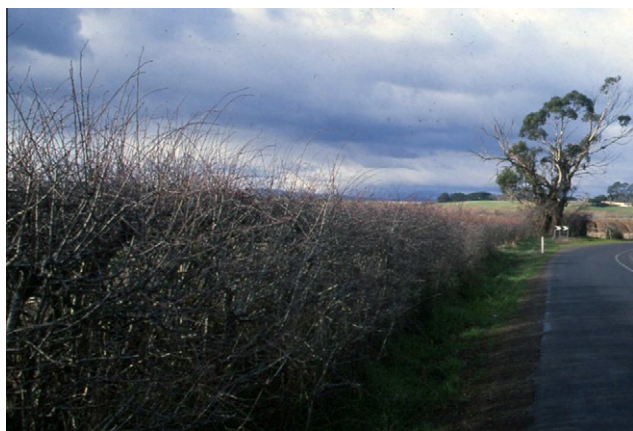


Fig. 1 A straight road bordered by straight lines of hawthorn hedge, a landscape feature of the 19th-century Midlands of England, transplanted to an island at the ends of the earth, Tasmania. But the road is aligned on a giant eucalyptus tree left over from the cultural landscape of the Tasmanian Aborigines.



Fig. 2 Tasmanian savanna of scattered eucalyptus trees, surviving among the straight hawthorn hedges and bright green agricultural grassland of an English-type cultural landscape.

Second-hand timber from shipwrecks, or driftwood from the cargoes of timber ships, may go far to substituting for islands' lack of trees. Shipwrecks on small islands could be catastrophic, if human survivors or escaped rats ate up the islanders' provisions.

Surprisingly small islands have a fully developed road system, maintaining vehicles despite the limited scope for using them. St. Mary's, the biggest of the Isles of Scilly, has cars and buses like the mainland — even new vehicles, not those retired from more arduous service elsewhere — although it is impossible to drive more than 4 km.

Islands have been places of punishment and relegation, from Octavia, unwanted wife of the Roman Emperor Nero, banished to an island and murdered, to the island prisons of the present. In the 19th century there was the bizarre Euro-American practice of relegating leprosy patients to islands, such as Molokai in Hawaii and Spinalonga in Crete.

NW Europe has many sacred islands, the seat of hermits and monks, despite being exposed to pirates. Iona, a remote

small island in Scotland, was one of the most famous early monasteries in Western Europe, the burial-place of Scottish, Irish, and Norwegian kings. England, Wales, Scotland, and Ireland each has a Holy Island (the Irish one being in a lake) related to early monasticism. Other monastic islands include Bardsey in Wales and Skellig Michael, an Atlantic rock off the west of Ireland.

Ecclesiastical practices may be different in islands: Crete and some other Aegean islands have a multitude of scattered chapels instead of the large parish churches typical of mainland Greece as of the rest of Europe (Nixon, 2006).

Conclusions: what makes islands special?

Island cultures have many aspects, some of which have links with landscape, others not. It is unlikely that there will be more than a tenuous link, if any, between costume or music and landscape. Small animals, ceremonies, and even crops, however significant in an island's identity, do not necessarily produce visible features at the landscape scale.

A study of island landscapes implies the question 'What makes islands different?'. Some comparison with a mainland is usually implied: either the geographical mainland (Tasmania versus Australia) or the source of the culture (Tasmania versus England). ESLAND is mainly limited to investigating the effects of European culture on European islands, and thus looks for more subtle distinctions than those present on Europeanized islands outside Europe. It is easier to look for differences between Tasmania and England than between the Isles of Scilly and adjacent Cornwall. (Are the landscape description, character, and identity of the Croatian islands of Korcula and Mljet different from those of the peninsula of Peljesac, connected to the mainland by a narrow isthmus?) Investigation of an island should not be limited to applying standard methods of description or characterisation, which may miss the more subtle of the features that make the island distinctive.

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