

History in geography: the importance of change over time in geography

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The National Curriculum (2014 on) requires that students are able to 'explain how the Earth's features at different scales are shaped, interconnected and change over time'. They are also required to investigate 'geological timescales' in relation to physical geography. However, there is no explicit requirement to conceptualise geographical change within the context of historical understanding. This article will argue that historical change must be seen as an ongoing process.

Figure 1 shows a standard map, regularly found in atlases and used in the classroom, of world biomes. Such maps are extremely useful and communicate clear and effective geographies. However, they are also static representations of a very dynamic world. As Ken Thompson says, in his thought-provoking book *Where do Camels Belong?*, 'The Earth is home to just short of two million species of living organisms. At least, those are the ones we have recognised, described and named. There are certainly many more, maybe up to 10 million, possibly even more. Each of those species has a characteristic distribution on the Earth's land surface, or in its oceans, lakes and rivers ... Run the clock back only 10,000 years, less than a blink of an eye in geological terms, and nearly all those distributions would be different, in many cases, very different.' (Thompson, 2015, p. 3)

Changes in species distribution

On this sort of timescale, plant associations are ephemeral. The changing nature of plant distributions can be linked to climate change, both historic and contemporary. Thompson again (2015, p. 16): 'The British Isles are particularly interesting, because sea levels fall dramatically (by about 120m) during a glaciation, creating a land connection between Ireland, Britain and mainland Europe. As the ice melts, Ireland and Britain once again become islands, Ireland significantly earlier owing to the greater depth of the Irish Sea. So there are always species that manage to reach Britain as the climate warms, but fail to reach Ireland, which is why (with apologies to St Patrick) Ireland has no snakes in the present interglacial.'

During the last glaciation, species we now consider native were to be found in warmer climates elsewhere in Europe. 'The oaks, shrews, water voles and (now extinct) bears that live in Britain in the present interglacial spent the glaciation in Spain, while the tawny owls, grasshoppers, newts and alder and beech trees reinvaded from the Balkans.' (Thompson, 2015, pp. 16-17)

Equally, elements of our countryside that we consider British may be quite recent arrivals. The Romans introduced pears, garlic, onions, cabbage, turnip, radish, 'real' apples (as opposed to the

Charles uses examples from environmental geography to argue that a lack of historical thinking can result in static, inaccurate and potentially misleading geographies.



Accompanying
online materials

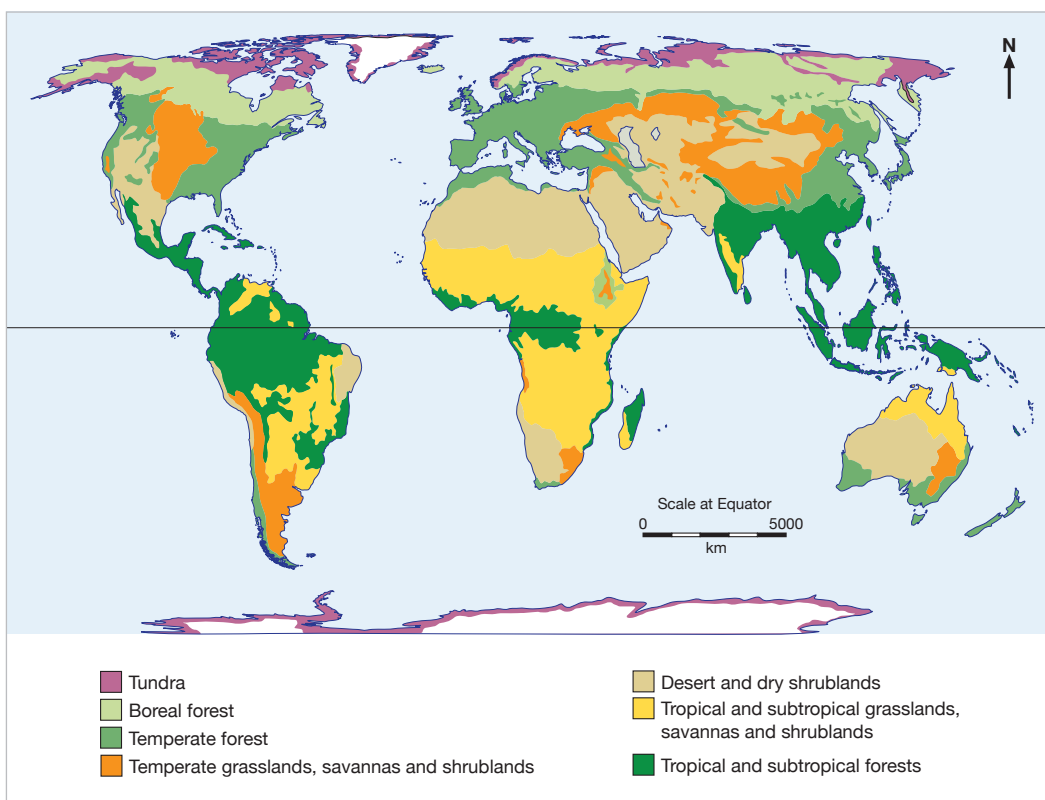


Figure 1: World biomes.

Source: www.carbon-biodiversity.net/content/text/carbon-stored-by-biome.jpg

native crab apple), chickens and rabbits, while medieval introductions include the wallflower, horseradish, chicory and sweet chestnut. Rather curiously, the sweet chestnut is now considered to be an 'honorary native' by the Woodland Trust.

If we then consider some iconic representations of elements of Britishness, the waters become even muddier. For instance, the red rose of Lancashire (*rosa gallica*) came from Central Europe, while the leek, the national symbol of Wales, was brought in by the Romans. If we add in St George being a Turk, it becomes clear that providing an effective historical perspective can deepen geographical understanding significantly.

Invasion biology

A further historical perspective, on ecosystems, provides an effective counter-balance to some contemporary writing in the popular press about harmful 'alien' species invading the habitats of 'native' species. This 'invasion biology' uses militaristic language drawn from the work of Charles Elton (1958), who during the Second World War worked for the Ministry of Agriculture on pest control in the drive to maximise food production. In reality, the threat of invading alien species is overblown. As human populations have grown and trade and travel increased, ever greater numbers of species have been moved between countries and continents. 10% of all plants imported into Britain go on to escape, to some extent. Of these, 90% remain 'casuals', surviving only as long as they continue to escape from cultivation; the other 10% establish self-sustaining populations, and about 10% of these become pests. In other words, 12,500 have been introduced, 200 have become fully established and between 11 and 39 have become pests (Thompson, 2015).

Few people who visit Britain's countryside when *Rhododendron ponticum* is in flower can comprehend the damage that has been caused to our **native** flora and fauna by this exotic Victorian introduction.

The plant is responsible for the destruction of many **native** habitats and the abandonment of land throughout the British Isles. The reason for this is simple. Where conditions are suitable, *Rhododendron* will out-compete most **native** plants. It will grow to many times the height of a person, allowing very little light to penetrate through its thick leaf canopy. This effectively eliminates other competing **native** plant species which are unable to grow due to insufficient light. This in turn leads to the consequent loss of the associated **native** animals.

Figure 2: *Rhododendron*: a killer of the countryside. **Source:** www.countrysideinfo.co.uk/rhododen.htm (The author has added the emphasis.)

One of the most frequently cited successful invaders is *rhododendron ponticum*, which was introduced into Britain in the late eighteenth century. It was planted extensively by nineteenth century gardeners and used as ground cover for the Victorian passion of shooting. Yet it is now reviled in some quarters (Figure 2) while being fêted in others (Figure 3). These changing and varying contexts provide an opportunity to develop a rich understanding of how landscapes develop and the multitude of social and economic influences that create them.

Figure 3: Figure 3: Sheffield Park, Sussex. **Photo:** © Chris Fisher.



Equally, if we take a longer perspective on 'invasive' species, we can question the tone of some of this reporting. Thompson (2015, p. 157) discusses ecological succession in second-growth forests in Ohio, which '... all developed on abandoned agricultural land ... it's clear that in the early stages species from Europe and Asia, including Japanese honeysuckle, bindweed, wild carrot and multiflora rose, are both frequent and abundant. But as succession proceeds, all these species become less common. Few remain after 60 years, and after 140 to 160 years not only have almost all disappeared, the few survivors are distinctly uncommon and it's not certain if any of them have a long-term place in mature forest. In other words, the best way to get rid of these species, at least if native forest is your aim, is to ignore them.' Most aliens do no harm at all, and may do some good (in another context, however, the brown tree snake has eaten all the birds on Guam!).

The role of humans

In providing such an historical context, it is also vital that we acknowledge the increasing role of humans in environmental geographies (Rawding, 2018). By some accounts, humans now move more rock and soil than all of nature's forces (water, ice, wind and landslides) combined (Ruddiman, 2007). At the same time, the wholesale transformation of the landscape by humans makes it far less favourable for some species and much more favourable for others. If the former happen to be native and the latter 'alien' how much 'human agency' is involved in the replacement of the one by the other? (Thompson, 2015, p. 36)

Thompson concludes that this process results in both winners and losers. 'Winners were big, fast-growing, fecund, early maturing plants, well able to cope with the modern fertile, disturbed agricultural and urban landscape. Losers were the exact opposite: often small,

slow-growing, long-lived, poorly dispersed and essentially confined to declining fragments of an older, less intensive agricultural landscape.' (Thompson, 2015, p. 118)

The discussion of such issues ensures that the world map of ecosystems shown in Figure 1 should be regarded not as a fixed entity but as a snapshot of the current situation.

Conclusions

If we now consider landscape change over time, it becomes clear that an historical perspective is not only essential but also extremely useful in developing a more holistic approach to understanding geography as an academic discipline (Rawding, 2013; 2014). For example, the Capability Brown-designed landscapes that adorn the parklands of aristocratic estates were a statement of high fashion and the politics of the late eighteenth century, yet they have come to represent a particular view of the English landscape which has been packaged by tourist authorities and bodies such as the National Trust as quintessential England for consumption by domestic and foreign tourists alike. An ahistorical approach fails to appreciate the context within which such landscapes developed.

Adopting an historical approach also offers opportunities to make effective cross-curricular links, not only to history, but also to English literature and art. We cannot treat landscape in a vacuum: it must be considered in the context of relationships between people and the world they inhabit (Cosgrove, 1998).

A deep understanding of geography cannot be achieved without understanding change. In turn, change can only be understood in the context of historical processes. As such it is essential that geographers fully accommodate historical approaches when teaching their subject. | **TG**

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