NATIONAL PARKS AS COMMON POOL RESOURCES: SCALE, EQUITY AND COMMUNITY

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Abstract: Conflicts between parks and people can be understood in terms of different ideas about the spatial scale at which these resources should be considered to be common. The reservation of land by the state in National Parks represents an assumption of common interests at the national scale, but also reflect international ('global') interests in biodiversity. Local resource use is conventionally prevented. This paper will provide a framework for analysing different kinds of use values (direct consumptive and non-consumptive use, indirect use and non-use values) of the species and ecosystems contained within national parks at local, national and international scale. It argues that the establishment of a property regime that excludes local consumptive use, and local resource users, is likely to persist as inequitable. Failure to balance resource uses between actors at different scales is a threat to the sustainability of protected area policy. New institutions are needed that link actors across scales (from global to local), and which link the enlarged community for whom the biodiversity resource is held in common.

Introduction

The last two decades of the twentieth century saw a growing emphasis on the question of people and conservation, and particularly people and protected areas (e.g. Ghimire and Pimbert 1996). There has been an enormous interest in policy circles in community conservation (Hulme and Murphree 1999, 2001) or 'community-based conservation' (Western Wright and Strumm 1996). These approaches can be thought of in terms of a continuum between 'park outreach' or 'park neighbour' programmes and community-based consumptive use programmes (Barrow and Murphree 2001).

The idea of an enhanced role for local people in the management of national parks is quite widely accepted (Inamdar *et al.* 1999). For example in Uganda, initiatives include community representation on park management advisory committees, revenue-sharing (e.g. of tourist fees) and the licensed legal harvest of resources from the National Parks (Infield and Adams 1999, Hulme and Infield 2001). However, the feasibility (and certainly the universal applicability) of such openness to local people has also been contested , and the importance of absolute defence of protected areas has been re-emphasised by the so-called 'back-to-parks' movement (e.g. Spinage 1998, Oates 1998).

At the same time, the agenda of international conservationists in attempting to promote the establishment of National Parks in the Third World, and enhancing their security (classically through donor support for military-style enforcement) has been widely criticised by human rights groups such as Survival International (Colchester 1998). There is a profound cultural distance between those who urge the importance of biodiversity in the face of global extinction rates, and those who oppose it in the name of human rights.

Whose National Park?

There is a growing literature on the political economy or political ecology of conflicts between parks and people (Neumann 1998, Adams 2001). It is recognised that there are important economic issues over the declaration of national parks (e.g. Emerton 2001), not least where people are evicted or prevented from exploiting natural

resources, and forego economic benefits. Where parks themselves generate significant new benefits (e.g. from tourism), there are also tricky issues of sharing of that revenue, which reflect different political interpretations of who are rightful owners of park resource revenue streams.

One example of such a dilemma is the generation of tourist revenue from tourists paying to watch habituated mountain gorilla groups in southwest Uganda (Infield and Adams 1999, Adams and Infield 2001, McNeilage 1996).

Mgahinga Gorilla National Park (MGNP) was created in Uganda 1991. The park covers 34,000 ha, and abuts the larger Parc National des Virunga in the Democratic Republic of Congo and Parc National des Volcans in Rwanda. It consists of the Ugandan slopes of three inactive volcanoes along the Rwandan border, and includes a range of montane forest and non-forest vegetation. Eleven primate species have been recorded, most notably the mountain gorilla. In 1991 there were 8 groups of gorillas, totalling 42 animals, which move across the national borders between the three parks . Land below the MGNP boundary is intensively cultivated and densely settled by Bufumbira people. Agriculture is intensive and permanent, and land is in short supply and very expensive to buy.

The present boundaries of MGNP are aligned on those of previous overlapping Game and Forest Reserve, gazetted in 1930 and 1939. Inter-departmental collaboration was limited, and effective conservation efforts within or outside the forest boundary was slight until the 1980s, when international interest in the mountain gorillas in this location developed. When the National Park was created in 1991, all human use of resources within the park became illegal.

The park included an area removed from the Forest Reserve, and cleared and settled for agriculture between 1941 and 1951. There were 113 houses, 2 bars, 4 stores and a church within the zone, and it supported several thousand people. A Memorandum of Agreement was signed in June 1992, under which it was agreed that all farmers and residents would leave the park. In return, Uganda National Parks promised some kind of 'compensation', and undertook to seek donor support to improve physical

infrastructure and agriculture in parishes neighbouring the park. USAID funded compensation an on average US$27 per person, paid for physical structures and permanent crops and trees, but not for land.

Creation of the park cut local people off from the resources that they had previously been able to use, or that they might have expected to be able to use. In economic terms, it ended the availability to local people of use values and option values of the forest. Lost resources included farmland, grazing land, non-timber forest products (food and fibre), and access to dry season water supplies. Surveys in Parishes adjoining the Park report associated problems of loss of farmland, the inadequacy of compensation, poverty and hunger (Adams and Infield 2001). These problems are reported widely among farmers, but are probably more acute among the remnant Batwa people, former hunter-gatherers now living a marginal existence around the park.

In response to these problems, a number of 'community conservation' initiatives have been implemented. In 1994 UNP instituted a revenue-sharing programme, at Mgahinga as elsewhere. Tourists pay significant fees to walk to see groups of habituated mountain gorillas. Gorilla tracking began at Mgahinga in 1993. Political instability in Rwanda and the DRC had drastically reduced the potential for tourism, and Ugandan tourism profited (Butynski and Kalina 1998). One group of habituated gorillas visit Mgahinga from DRC and Rwanda for extended periods. Six people can visit them per day. Butynski and Kalina (1998) report that 1100 tourists at Mgahinga in 1996 generated US$140,000 in revenue. A proportion of this revenue is made available for sharing with local communities. From 1995 to 1996, 12% of all visitor-derived revenues were in theory set aside for revenue sharing. Of this, 8% was allocated to local community projects, 2% to local District Administrations, and 2% for a national pool. In practice less than this has been available (USh. 5 million[1]), spent on the construction of classrooms for primary schools. In addition to this, Mgahinga has (with the larger Bwindi Impenetrable National Park) been the target of a series of development investments, including CARE's 'Development Through Conservation' programme in park-neighbour parishes, a US$4m community projects fund set up by the GEF (Mgahinga Bwindi Impenetrable Forest Conservation Trust, MBIFCT), and investments in water supply.

Almost all of these initiatives are aimed at MGNP's immediate neighbours. However, not all the former land holders (and stakeholders) at Mgahinga live in these parishes. The engagement between conservation and local people at Mgahinga reveals a problem of scale: how large is the community which a 'community conservation' programme like that at Mgahinga should seek to serve? The land in the Mgahinga Gorilla National Park is now legally nationalised, and one argument would suggest that any revenues should be seen as national revenues, to be shared out at that level. Why should the people of Mgahinga benefit from the large gorilla-related revenues when many other equally poor communities around parks elsewhere cannot? At the same time, there is a view that the park's land morally still belongs to local people, as the continuation of the forest that they have been clearing for some generations. On this basis, local people need help (and arguably deserve compensation), so any revenues should be used for the local community. This is the conventional basis for many 'park-outreach' types of community conservation projects.

Scale and Interest in National Parks

Interests in national parks are pursued by different political actors interests at a number of distinct scales. Three are differentiated here:

- **Local scale**: people living near to (and sometimes with former rights in) a protected area; their non-governmental or local governmental representatives. At the local scale, concern is generally focused on a single protected area, often (in the case of a National Park) as a policy imposition of central national government.
- **National scale**: represented by national government agencies, non-governmental organisations and politicians. At the national scale, concern addresses a series of protected areas, and a conservation programme informed by national political and economic and social objectives, and international influences (e.g. the constraints of Treaties, the constraints and opportunities of donor funding priorities)
- **International scale**: represented by international non-governmental organisations (especially conservation organisations such as Conservation International, WCS,

WWF, IUCN, FFI), donor and lending organisations (Multilateral and Bilateral), and convocations of national governments (e.g. regional trade organisations, Treaty or Convention Organisations, United Nations Organisations). At the international scale, concern about the values of protected areas focuses on global issues of biodiversity and extinction, and reflects domestic agendas set in donor countries (especially Europe and North America) such as concern for large mammals and opposition to hunting.

Table 1 Possible 'Communities' at Mgahinga Gorilla National Park

Scale	'Community'
Local	the people currently living in immediately adjoining parishes, who suffer the direct costs of living next to a national park (e.g, crop raiding)
	people who can prove they once held land or other property within the Park, wherever they now live
	the destitute and landless Batwa who do not currently have land rights in parishes around the park, but who were (before settlement) presumably the residents of the forest that has become both park and the farmland.
	the citizens of Kisoro District, for whom the park now represents an attractive economic resource
National	Uganda National Parks, to allow cross-subsidy of the national park system nationally, including parks without gorillas for revenue generation.
	Uganda's central government exchequer, to meet the costs of UNP and conservation policies nationally
	the governments of Rwanda and Democratic Republic of Congo, to meet the costs of maintaining the National Parks where the 'Mgahinga' gorilla groups were originally habituated
International	the people living around the National Parks in Rwanda and Democratic Republic of Congo, to meet the costs of living next to a national park (e.g. crop raiding)
	People in conservation organisations outside Uganda (especially in the industrialised world) with interests in conserving the Mountain Gorilla

Who is in the 'local community' in the case of Mgahinga? In a region of reasonably recent agricultural settlement, and significant population shifts in and out in recent years associated with warfare, whose *de facto* or *de jure* property rights in the park's

land, its wood and other resources should be recognised? If there are large and sustainable revenues to be derived from gorilla trekking, among whom should they be shared? There are many possibilities (Table 1), and each raises political questions about fairness, justice, and need.

The Economic Value of Nature in National Parks

The total economic value of nature[2] in a national park includes direct and indirect use values, option values, and non-use values/existence values (Emerton 2001).

- Direct use values include both consumptive and non-consumptive use values. Consumptive use values derive from the hunting or harvesting, and the production of food or fibre, including meat, fish or plant products, and fibre such as timber/wood or non-timber forest products.
- Non-consumptive use values represent revenue from economic activities that do not consumer resources, such as many forms of tourism. The Mgahinga gorilla tracking is typical of such enterprises, but also important are the whole tourist industry associated with this market (accommodation, transport, service supply etc)
- Indirect use values include ecosystem services (or 'functional values') such as flood control, water supply or carbon sequestration.
- Option values comprise the premium placed on living resources reserved for future use (whether direct or indirect). In this paper these are treated as part of current use and non-use values
- Non-use values include the values associated with nature's existence, separate from its present or possible future use, such as cultural and aesthetic values.

The establishment of a National Park generally involves a choice between these different sources of value, with direct use values foregone in favour of indirect and non-use values. In National Parks, almost all forms of consumptive use are prevented, and these benefits essentially become opportunity costs (Emerton 2001). However, it is important to identify the values of land and resources within national

parks, whether the regulations of declaration allow them to be realised or not. The intersection of spatial and source of value is important (Table 2).

Table 2. Scale and Value in National Parks

	Local	**National**	**International**
Consumptive Direct Use Values	**A.** Hunting, harvesting, land conversion	**B.** Government fees and royalties from extractive industry (e.g. safari, forestry); land conversion	**C.** International trade in harvested products and services
Non-consumptive Direct Use Values	**D.** Employment or revenue sharing from tourism;	**E.** Government fees and royalties from tourism industry	**F.** International trade in tourism, film
Indirect Use Values	**G**. Ecosystem benefits (e.g. water supply)	**H**. Ecosystem benefits (e.g. water supply)	**I.** Global ecosystem benefits (e.g. carbon sequestration)
Non-use (Existence) Values	**J**. Spiritual or religious values	**K**. National ideology (intrinsic /moral values)	**L.** Intrinsic / moral values; preservationism ('biodiversity')

Consumptive use values of the ecosystems on land declared as a National Park include hunting and harvesting of animal and plant products, and the forgone benefits following land conversion (timber liquidation, the value of cleared agricultural land). At the local scale, these values are often enjoyed through a common property regime (e.g. non-timber forest products, fishing or hunting). However, by the late twentieth century, land clearance had increasingly been accompanied by *de facto* privatisation of land rights, particularly in forested areas. Donor-funded land registration programmes have also extended private rights over former common pool resources. Open-access regimes have also replaced common-property regimes, especially where informal institutions are weak, or areas are subject to rapid immigration, or to limited social capital or poor local governance. Where there are new institutional

arrangements allowing social ownership of natural resources under commercial exploitation (e.g. Zimbabwe's CAMPFIRE), local benefits from consumptive use can be derived through rent on exploitation by a third party.

At the national scale consumptive use values derive from the same resources, but are realised through the fees and royalties obtainable from renewable resource-based industries. These would include the revenues from safari hunting licenses or forestry felling licenses, and the tax and benefits of land conversion foregone.

At the international scale, consumptive use values reflect the economic product of international trade in harvested or hunted products (e.g. skins, ivory or timber) and the manufactured products based upon them.

Non-consumptive use values derive from economic activities that do not directly demand the death organisms. At the local scale, economic benefits may be derived indirectly from investment by government or non-governmental actors in community infrastructure (schools, health centres etc), in provision of services (e.g. agricultural development; small business facilitation), or in direct subsidy (payments). This investment may derive directly from a sharing of income of state or business in tourist businesses (e.g. visitor gate fees; bed night fees), through shared enterprise operations (Murphree 2001), or from donor investment to compensate in some way from direct use benefits foregone. Economic benefits can also be derived from employment in tourist-related enterprises (or local ownership of tourism enterprises), whether lodges, kiosks or guiding.

At the national scale, benefits from are chiefly fees and royalties generated by the tourism industry.

Internationally, benefits from non-consumptive use derive from the global tourist economy, including international travel, specialised product supply from sun-cream to binoculars, service provision (travel services, insurance etc.). There are also derived benefits from film and television industries, which focus heavily on national parks for 'nature documentaries'.

Indirect use values at the local scale include ecosystem benefits (such as a secure water supply from forested catchments, or flood defence from intact wetlands). Nationally these benefits can also be experienced (e.g. major city water supply). Internationally there are also benefits such as the carbon sequestration in forested biomass, which are relevant to the mitigation of excessive carbon release in industrialised economies.

Non-use values are also relevant at all three scales. At the local scale, there can be important spiritual or religious values associated with natural features within national parks areas. There are also values associated with historic rights of land and resources in national parks, and to the sense of freedom to enter and move. Such rights are commonly discussed in industrialised economies (e.g. the UK's 'right to roam' debate), but are perhaps under-recognised in Third World national parks.

Nationally, the non-use values of parks can be significant in terms of national identify and ideology, for example Kruger National Park in Apartheid South Africa (Carruthers 1995). Internationally, the non-use values of Third World national parks mainly reflect the moral and aesthetic values attached to biodiversity preservation in Western environmentalism. These can originate from a range of religious and secular sources, including concerns about deep ecology and the ideas of the intrinsic rights of non-human organisms or entities. All these ideas drive the notion that the preservation of biodiversity has an importance beyond utilitarian values. They form an element within global environmentalism, and are spread by international NGOs, both directly, and through their influence on other political actors such as aid donors. These concerns can also be reflected nationally, although in the Third World they are often shared by a relatively small, well-off and educated elite.

Scale and Values in National Parks

In national parks, consumptive uses of nature are usually banned, while non-consumptive direct uses and indirect uses are allowed (even supported). Non-use values are highly significant. There are significant issues of scale implicit in these choices.

The creation of a national park can be understood in terms of the nationalisation of resources. Conflicts over National Parks reflect different ideas about which resources should be exploited, and the spatial scale at which they are treated as common. Unless private land registration has been vigorously pursued, people using land in a biodiverse area identified as of conservation value conventionally interpret natural resources as a *common pool resource at the local scale*.

The reservation of land by the state in National Parks represents an assertion of common interests at the national scale. These national interests are privileged over local interests, particularly consumptive resource use by local people (and especially subsistence hunting). National Parks present nature as a *national common pool resource*. The creation of a national park represents a claim of ownership of species and ecosystems by the state (legally appropriating purportedly unimproved, unoccupied or unclaimed land, or evicting users). National Parks nationalise common pool resources, and extinguish (or make illegal) all consumptive use, and all forms of local use.

However, the declaration of a National Park also reflects international ('global') interests, as reflected by both inter-governmental agreements and NGOs. Governments respond to international interests when they sign international agreements such as the Convention on Biodiversity. Conservation NGOs and donor organisations are avenues of (usually) First World interests when they work to identify international priorities (such as 'Biodiversity Hotspots') and seek to persuade governments to bring them within formal protected area networks. National Parks therefore also represent a claim about nature as an *international common pool resource*.

Using Table 2 as a template, declaration of land as a national park thereforee involves a shift in emphasis towards both national and international scale, and towards non-consumptive and indirect use values, and non-use values (Figure 1).

Figure 1 here

At the national scale, the declaration of a national park may involve an explicit balancing of the costs of revenue foregone from the land now protected, and the public benefits of making the species and ecosystems of the park as a national common pool resource. There are costs at a national scale, since conservation demands considerable expenditure. James et al. (1999) suggest that current global expenditure on conservation in protected areas is US$453 per km^2. However, these costs are rarely met (expenditure is only US$93 per km^2 in tropical countries), and in practice the balancing of costs and benefits at national scale is only implicit, through a hidden cross-subsidy from other economic sectors (sometimes supported by donor loans or gifts).

Using Table 2, National Parks therefore preclude benefits from cells A to C. However, income streams from non-consumptive direct use and indirect use (cells D to I) can be hard to measure and capture. Those from non-use values (J to L) are notionall in financial terms, even if these values have enormous political power.

At the international scale, the creation of a national park essentially implies a balance between the lost benefits to global or remote national or regional economies of resource exploitation and the gains from non-consumptive direct use, indirect use and non-use values. This notional balance may hold when the profits of resource exploitation are limited, for example if uncontrolled resource exploitation in a potential national park area faces consumer group product boycotts, or where resources are of low value or already stripped. Few if any of the costs of conservation (whether administrative, opportunity or neighbour costs) are shared at international scales, although donor funding can be designed to enhance conservation management capacity (e.g. through more sophisticated management planning or greater enforcement of park regulations). In effect the balance struck internationally is largely ideological not economic, with the values of a conserved park to concerned First World citizens being dominant, and often not balanced either by a clear commercial lobby for consumptive use of resources or the imperative to pay the costs of conservation. It is a political question whether the values represented by that international preservationist voice have influence on national park designation decisions.

At the local scale, the costs of a national park can be very great, both because of the benefits of use values forgone (opportunity costs), and the real costs of being a neighbour (James *et al.* 1999, Emerton 2001). The economic argument commonly made for successful community conservation 'benefit-sharing' initiatives is that income from non-consumptive direct use can replace that lost from consumptive direct use. A further requirement is that revenues also cover net costs. If this is the case, then it can be argued that local people will not suffer economically from creation of a national park, although the structure of incentives to for individual defection from local laws may still affect the extent to which individuals accept park regulations: in a land of accepting neighbours, poaching may still pay. If some people lose out, or believe they have lost out, the challenge to community conservation becomes serious. Inspired community conservation 'park outreach' programmes can also allow local people to enjoy non-use values of a park (local existence values). However, in almost all national Parks, there is no provision to replace revenue flows from direct consumptive use.

Conclusions

The way in which the declaration of a national park establishes a property regime that excludes consumptive use, and local resource users, is fundamentally inequitable. 'Community conservation' strategies seek to either overcome, or at least finesse that inequity, but they face very significant problems. These relate both to the diversity of the real costs of conservation, and the embedded institutional complexity in park neighbour communities. These make stable regimes of acceptance and compliance with conservation policy problematic. The nationalisation of local common pool resources within national parks under the rubric of conservation is therefore likely to remain profoundly problematic.

These problems are likely to be particularly severe where this nationalisation, or declaration of the resource as a common at the national scale, is not founded on strongly argued and clearly presented assessments of costs and benefits at national scale. Bitter disputes between national conservation priorities and local perceptions of need, particularly over the declaration of protected areas, are commonplace in industrialised countries[3]. However, they are mediated by strong conservation movements (in the UK albeit one that is strongly English, urban and middle-class),

and the broad acceptance that conservation is a legitimate policy issue. In the Third World, the domestic constituency for conservation is often small, and conservation policy is driven by external organisations reflecting a 'global' ideology that is dominated by First World ideas.

In this global ideology, non-use values are extremely important. The are the fundamental justification for national parks, and represent powerful political ideologies However, they generate tiny revenue streams. What is needed is a **reverse revenue stream** (Figure 2). Can conservationists devise institutions capable of deriving a revenue stream from globally-recognised non-use values, and directing it back towards national and local stakeholders? Only if this is possible will the nationalisation (and implicit internationalisation) of resource rights involved in the declaration of national parks yield an equitable and sustainable outcome.

Figure 2 here

Failure to balance benefits between actors at different scales is a threat to the sustainability of protected area policy. There is an urgent need for new institutions that link actors across scales (from global to local), and which enlarge the community for whom the biodiversity resource is held in common.

More generally, one can conclude that there is a need for much greater and more effective cross-scale communication about the values of nature if national parks are to reflect adequately the different communities seeking to hold their resources in common.

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Figure 1 Value Shift Implications of National Park Declaration

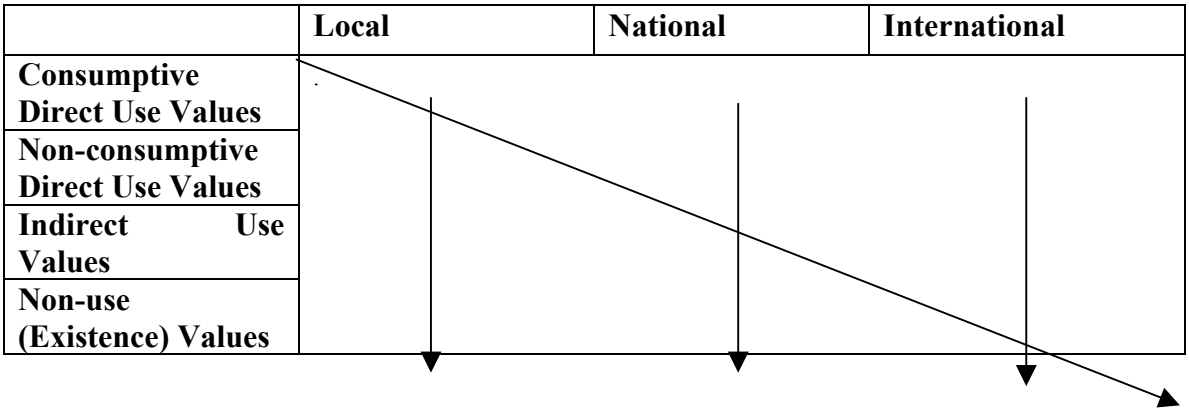
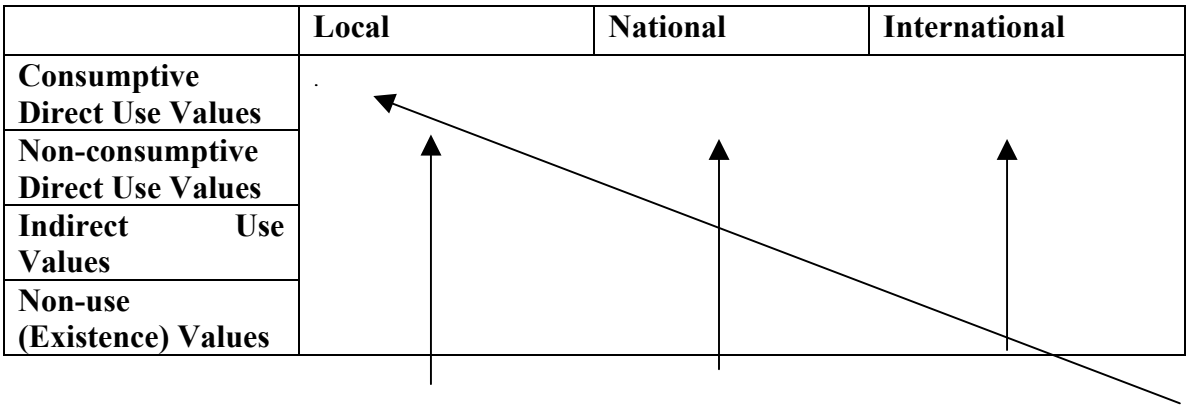


Figure 2. The Need for a Reverse Revenue Stream for National Park s



Notes

[1] US$4,762 @ UgSh 1050 = US$ 1

[2] The word 'nature' is used here in preference to the term 'wildlife' that is more usual in Africa to emphasise that many values relate not to familiar large mammals but to more lowly animals and especially plants.

[3] Two examples: Councillors in Orkney in the UK spoke of the 'spreading green slime' of conservation designations in the 1980s; landowners in the 1940s essentially prevented the establishment of a provision for national parks in Scotland in the 1940's.