

The New Forest Commons, Hampshire: horse-riders, mountain-bike riders, free-riders.

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1. INTRODUCTION

In choosing their theme *Reinventing the Commons*, the programme committee of this conference identified the need to debate "how and why institutions of common ownership can manage resource in a *changing* environment." In the growing body of literature on common property resources, reference to the English commons usually involves retrospective studies. The work shows how a changing environment forced long-enduring and relatively successful common property regimes to give way to enclosure and private property regimes.

The paper I bring to you today highlights that commons are still alive and relatively well in England, but are experiencing contemporary threats that demand institutional changes which may be of some interest to other commons throughout the world. The subject of my paper is one very large tract of common land in England; the New Forest, Hampshire. A somewhat misleading name, since the New Forest is neither new nor merely a forest. It was given its name "Nova Foresta" by William I in 1079 after the Norman Invasion of England. At the time, the word "forest" described any area of unenclosed land delineated by a perambulation within which wild animals were protected by Forest Law for the benefit of the King.

In fact, some would argue that the New Forest is not a common either. The New Forest is not owned in common: 70% of the New Forest has remained in the ownership of the Crown since 1079, and is managed on its behalf by the Forestry Commission. Private land makes up about 30% of the total area of the New Forest, in form of settlements and enclosed agricultural land.

However, before I am accused of being at the wrong conference, let me assure you that the New Forest has a place in our discussions. First, despite experiencing economic, social, political and technological pressure, continuous reinvention of the institutional arrangements governing the use of the New Forest common has enabled it to survive as a common property resource for over 900 years. Customary practices were eventually recognised as

common rights. Over time, such rights have included :-

- the right of 'marl', which is the right to dig clay to dress the acidic soil of a commoner's holding;¹
- the right of 'turbary', which is the right to cut turf for fuel;²
- the right of 'estovers', which is the right to gather branch wood from felled trees found in the Forest;³
- the right of pasture for grazing; and
- the right of 'mast', which is the right to turn out pigs in the pannage season to feed on beech mast and green acorns.⁴

Second, the New Forest now provides a case study of a multiple-use common which combines multiple *types* of uses by *different* groups. In the last century the commons have been exploited for a variety of purposes; both extractive (principally grazing and forestry) and *non*-extractive (formal and informal sport and recreation). In addition, the resource system itself is recognised as important for the conservation of biological diversity.⁵

¹ The right is found attached to land in the south of the Forest, but modern agricultural methods rendered this right obsolete and exercise of the right lapsed by the late nineteenth century (Trimmer, 1856; Spooner, 1871; and Williamson, 1861).

² In doing so, two turfs must be left for each one cut. Whilst at one time every cottage in the Forest depended on these rights, this right is exercised by only a few Commoners today. It is apparent however that during the late eighteenth century the cutting of turf for sale was seen as an important economic benefit for many commoners and that its extensive use continued well into the nineteenth century (Tubbs, 1968:106). The estimated harvest from the common land in 1852 was around 5 million turves, the equivalent of 100 acres of continuous stripping. Some commoners cut their own turf at this time, but others employed the services of a professional turf cutter, at a rate of sixpence per thousand turves cut. Motorised road transport during the first world war stopped serious exercise of the rights by making coal more readily available (Pasmore, 1977:122).

³ The importance of the rights to cut wood and peat for fuel declined as labour costs increased and as the Forest opened up to rail and road transport in the late nineteenth and early twentieth centuries. From 1854 most rights of fuelwood were bought out by the Crown's managing agent. Nowadays, the Forestry Commission allocates one or two 'cords' (a stack measuring 4-ft. x 4-ft. x 8-ft.) of wood to land which has this right attached. The Commission cuts and stacks the wood for collection by the commoners. Over the years these rights have diminished in number, with approximately eighty commoners receiving allocations currently. The fuel must be burnt in the commoner's house.

⁴ The cutting of 'fern', bracken for bedding, was also a widespread custom in the New Forest and it was cut in large quantities until the 1940s, when straw replaced it as a bedding material. The cutting of gorse for fodder was also customary, although there are no rights for such practice, and continued until the twentieth century. Gorse faggots or 'black sticks' were also cut for local pottery kilns (Gilpin, 1791) and for broom-making (Tubbs, 1968; 1986:100).

⁵ Nationally, the New Forest has been recognised as a Site of Special Scientific Interest (SSSI) under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Acts 1981 and 1985. It has also been designated as a Special Protection Area (SPA) under the European Union's Directive on the Conservation of Wild Birds and a Wetland of International Importance under the Ramsar Conventions. In addition, the area has been proposed as a Special Area of Conservation (SAC) under the European Union's Habitat Directive.

I have been conducting research on the New Forest commons for the last four years and my research encompasses time series analysis of the management of the commons since 1079. This has revealed a number of interesting issues.⁶ However, for the purposes of this conference, I want to concentrate on the *contemporary* threat to the New Forest commons of multiple-use and the extent to which the institutional arrangements governing the commons are capable of addressing multiple-use. In this respect, I hope you will forgive me for referring very little to the New Forest's 900 year history; although I shall be happy to answer any questions on that subject later.

Following Oakerson's framework, I shall first provide some contextual background to the analysis by examining the physical attributes of the commons; outcomes arising from multiple-use; the social characteristics of the user community; and the current decision-making arrangements. (Oakerson, 1986 & 1992).

2. PHYSICAL ATTRIBUTES

The New Forest is situated in the county of Hampshire in the south of England. It encompasses some 145 square miles and around 38,000 hectares (37,6475 ha - 93,094 acres).⁷ The entire perambulation was fenced in the early 1960s in order to keep animals from wandering out of the New Forest. Roads entering the New Forest are now fitted with cattle grids and signs warning motorists of the reduced 40 mph speed limit, which is enforced in an attempt to reduce the number of animals killed and injured by motor vehicles.

The New Forest is a 'mosaic' of landscape, comprising large tracts of unenclosed pasture woodland, interspersed with lowland heath, valley bogs and acidic grassland, known locally as "lawns".⁸

Since the middle ages, the commons have supported two dominant uses:-

1. Agriculture - mostly grazing
2. Timber Production.

With a third use prevailing in the last century:-

3. Sport and recreation.

⁶ For example: (i) the relevance of institutional evolution in the New Forest and how the outcome of institutional reform in one period formed the basis for decision-making rules in the next; (ii) the importance of a landed class within the community in bringing about institutional reform; and (iii) the relative compatibility of different types of extractive use of the commons.

⁷ The presence of such a large tract of common land is relatively unusual in the south of England. There are 8,675 separately registered tracts of common land in England and Wales, covering between 1.4 and 1.5 million acres (nearly 4% of the total land surface) (Higgs et. al., 1994; Aitchison, 1990:273). The spatial distribution of common land is noticeably uneven as a result of the manner in which land was enclosed, mostly in the nineteenth century (40% of the area of common land existing in 1858 had been enclosed by 1958, some one million acres in all (Shoard, 1987:416)). The larger commons tend to be situated in the north and west of the country, with limited acreages in the lowlands of central and southern England (Aitchison, 1990; Aitchison & Hughes, 1988; Aitchison & Penfold, 1990).

⁸ The physical characteristics of the area reflect the use made of the New Forest by man since Neolithic and possibly Mesolithic times and, in particular, the depletion of early woodland cover.

2.1 Common Agricultural Use

The physical nature of the New Forest has always rendered it particularly suitable to common usage; the unique diversity of habitat is more valuable when used in aggregate.⁹ The two common rights that persist today in any great number are the right of pasture and the right of mast.

The common right of 'pasture' extends to ponies, cattle and donkeys and mules. The majority of animals turned out for grazing comprise ponies and cattle. These have steadily increased over the last decade, from 4849 in 1984 to 6800 in 1994.¹⁰

In the autumn 'Pannage Season' pigs are turned out to feed on acorns and beech mast. The rights of pannage help to protect the health of cattle and ponies grazing, since green acorns are poisonous to them when consumed in large quantities.¹¹

2.2 Timber Production

The Crown land in the New Forest is managed by the Forestry Commission. Timber production takes place within inclosures; the majority of which are statutory inclosures, created by a number of Acts of Parliament which authorised inclosure of common land by

⁹ The heath is dominated by heather (*Calluna vulgaris*) and cross-leaved heath (*Erica tetralix*), but also includes gorse (*Ulex europaeus*) thicket, acid grassland and bracken (*Pteridium aquilinum*), neutral grassland (including re-seeded grassland), valley mires and other wetlands. The remaining ancient woods were added to in Victorian times by ornamental woods and now comprise around 91% broadleaf, including beech (*Fagus sylvatica*), oak (*Quercus* spp.), birch, holly (*Ilex aquifolium*), alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*), hawthorn and 9% self-sown Scots pine (Nature Conservancy Council, 1988).

¹⁰ The 'New Forest' pony is believed to be indigenous and to have its origins in the herds of wild horses which once roamed the area. The ponies live a semi-feral existence, usually remaining in groups of between one and six mares and their offspring. Although free to roam in any part of the open common land, the mares keep to a grazing territory (referred to as a "haunt" or "run"). The varied habitat of the Forest serves a unique but complementary role in the grazing and general living requirements of the commonable animals and each haunt is capable of providing the essentials of food, water, shelter and shade; the size of the haunt varies from one hundred to one thousand hectares, according to the availability of each. The woods provide an abundance of shelter and herbage, particularly in the winter. Gorse and holly are also eaten by the ponies in large quantities in winter. Ivy and bilberry (*Vaccinium myrtillus*) occurring in the woodlands are also intensively browsed, as are hardwood trees and the saplings of some self-sown conifers. The nutrient values of gorse have long been recognised and it was commonly crushed and fed as a fodder crop in the eighteenth and nineteenth centuries (Duncan, 1840; Elly, 1846; Radley, 1961). The valleys provide water and the 'lawns', which lie within the flood plains of streams, are a popular gathering place for commonable stock.

Cattle have been grazed on the common throughout its history, being kept out as long as possible in order to reserve enclosed land for the growing of hay and silage. The cattle may be fed supplementary forage during the winter months, usually by taking them off the common and feeding in the owner's land or yard. The cattle, who are unable to crop as closely as the ponies, are generally in greater need of supplementary feeding over the winter.

¹¹ In addition to ponies and cattle, wild deer graze and browse the Forest [Fallow deer (*Dama dama*), Red deer (*Cervus elapsus*), roe deer (*Capreolus capreolus*) & Sika deer (*Sika nippon*). The competition that the deer provide for ponies means that their numbers must be controlled in order to protect common grazing.

the Crown and the exclusion of commonable stock from such inclosures.¹²

2.3 Sport and Recreational Use

The third and most recent major use of the New Forest is for sport and recreation.

Recreational users have no formal right of access to the commons, but are permitted access by local byelaws. Improved rail and road networks in the south of England, coupled with rapid urban development around the New Forest, have put the New Forest within one and a half hours drive of over ten million people. Day visits to the New Forest have risen from around 3.5 million in 1970 to ten million in 1994.

The commons provide a valuable recreation resource for other form of formal and informal recreation. They support 141 car parks, 11 waymarked walks, 3 golf courses, 12 cricket pitches and 2 football pitches. The well-cropped grassland areas are used for ball games and picnicking and even the concrete surfaces left from wartime installations are utilised for model aircraft flying.¹³

Unrestrained camping and car parking in the Forest was finally ended in 1971 and confined within designated sites. However, whilst the commons are protected from vehicular access by a range of obstructive devises (including small posts, log rails, ditches and banks), the physical nature of the commons make them easily accessible to horse riders, dog-walkers and mountain bikers.

3. OUTCOMES

Throughout the New Forest's 900 year history there have been some unsatisfactory outcomes in terms of the agricultural exploitation of the commons, but none sufficient to deplete the resource system. Recreational use of the commons has brought a new dimension to resource management of the New Forest and new types of outcomes. The types of undesirable outcomes currently demonstrated in terms of recreational exploitation of the commons are:-

- congestion (both people and traffic);
- noise and air pollution and litter;
- habitat damage, including soil erosion (caused by horses, bikes and people);
- disturbance of wildlife and commonable stock;
- animal road accidents; and
- accidental fires.

¹² It is important in the New Forest to distinguish between 'enclosures' (land enclosed by hedges or fences) and 'inclosures' (land which has been enclosed through statutory authorisation and over which common rights have been extinguished). There are around 100 timber inclosures in the New Forest, covering a total of around 8513 ha, ranging from 0.8 ha in size to almost 300 ha, although several inclosures join together to form larger units of woodland. Commonable stock is excluded from the fenced inclosures, but where several inclosures join together, passageways have been created for the free movement of animals. The inclosures are part of a working forest and the aim of the management is to produce high quality timber for sale.

¹³ The commons also provide a venue for orienteering events, sponsored walks, treasure hunts and cycle events. In 1990, there were almost 500 organised events, involving at least 20,000 people (New Forest Association, 1994).

The clue to the existence of such undesirable outcomes may lie in the current institutional arrangements governing the New Forest, which have evolved from institutions originally designed to manage agricultural, 'extractive' use of the commons. Analysis of the institutional arrangements in terms of multiple-use suggests that reform is necessary. However, before I present my analysis of the institutional arrangements, I should like to take a look at the characteristics of the extended user community of the New Forest.

4. THE USER COMMUNITY

The user community of the New Forest has become far more diversified in the last fifty than in the previous nine hundred years of the Forest's history. My research has identified that it is possible to draw distinctions between different groups within the community. For simplicity, the different groups are classified:-

The commoning community	-	Type A.
The local residents	-	Type B
The wider, amenity users	-	Type C

4.1 The Commoners (Type A)

Common rights are attached to property and pass with occupation of that property. A register of commoners has been kept since 1858 and shows that there are currently some 1300 registered commoners. Approximately 500 people are actual or potential practising commoners, with around 250 people turning out animals *every* year (Illingworth, 1991).¹⁴

Commoning is almost exclusively a part-time occupation. Some ninety per cent of commoners farm no more than 20 acres (8 ha) and over eighty per cent turn out 20 animals or less. Commoners persist with commoning despite poor financial returns because of their interest in commoning as an institution and their shared interest of the New Forest pony: a "tribal god among the commoners." (Kenchington, 1944:173).

4.2 Local Residents (Type B)

The resident population of the New Forest is around 30,000 people and is comprised three large villages, several smaller villages and scattered settlements.¹⁵ Land adjacent to the New Forest perambulation and within the New Forest District houses an additional 165,000 people.

The incoming community settling in the New Forest changed from one of landed gentry in

¹⁴ Most practising commoners come from well-established New Forest commoning families, where commoning is a family tradition. Establishment is important since newcomers to the Forest and to commoning tend to be more easily discouraged, such as by the loss of a pony in a road accident, and are less likely to turn-out animals for more than one or two years (Illingworth, 1991:61). Sixty per cent of practising commoners were brought up within nine miles of their current address (Countryside Commission, 1984a). Sixty six per cent of commoners have lived in the New Forest for over forty years, eighteen per cent for between twenty and forty years, and only six per cent had lived in the Forest for less than ten years (Ivey, 1991).

¹⁵ The larger villages have been designated by local planning authorities as the places where any housing and associated development will occur.

the late nineteenth century to "middle class intellectuals" in the early to mid twentieth century (Lascelles, 1915). The newcomers to the New Forest soon became involved with the affairs of the Forest through involvement in organised groups: either parish councils, district councils or voluntary interest groups, such as the 'New Forest Association', which was formed in 1866 to protect the amenity interest in the New Forest (Pasmore, 1977:13).¹⁶

4.3 The Wider, Amenity Users (Type C)

Around 70% of recreational users comprise overnight stay visitors and other day visitors. Many of the day visitors come from the major settlements around the New Forest, and from popular tourist destinations along the south coast. The most important point to note about the 'Type C' community is that they comprise widely dispersed individuals.

5. INSTITUTIONAL ARRANGEMENTS

In order to convey the extent to which the institutional arrangement of the commons need 'reinventing' it is necessary to sketch out their current nature by addressing the three principle institutional tiers governing the commons.

5.1 Constitutional Level

The first thing to note about the New Forest commons is that they have traditionally been managed by a system designed at the constitutional level. The New Forest has its own Acts of Parliament, dating from 1698 to 1970. The effect of each new statute has been to re-establish the institutions governing the commons. Although policy was originally formed in a top-down fashion by the Crown, since the late eighteenth century the local community has played an increasingly important role in instigating reform and re-designing the institutions for management of the commons.

Use of the commons is governed by two statutory bodies: the Verderers and the Forestry Commission. The Forestry Commission is a national public agency and the Crown's agent in the management of Crown land. The Court of Verderers is a statutory body which is unique to the New Forest and was reconstituted in 1877 from an ancient Forest Court to protect and administer the common rights. The Court is made up of ten Verderers, five of whom are appointed and five elected by the commoners:-

- Official Verderer (chair) appointed by the Crown.
- Ministry of Agriculture appointee.
- Forestry Commission appointee.
- Countryside Commission appointee.

¹⁶ In 1972 this 'amenity voice' defeated the Forestry Commission's intentions to plant coniferous woodland in the New Forest. Since 1974 it has prevented a succession of proposals from Hampshire County Council to construct a By-pass around Lyndhurst, which could only be built at the expense of a major incursion into the Forest. In 1982 it prevented Shell UK Ltd. from carrying out exploratory drilling for hydrocarbons in the Forest. In 1988, it resisted an attempt to construct a second power station ('Fawley B') on the edge of the perambulation. In most of the above cases, the voluntary organisations (eighteen in the case of the Shell inquiry) came together under the umbrella of the New Forest Association to present a collective case at the respective public inquires and meetings (Tubbs, 1986:275).

- Hampshire County Council appointee.
- 5 Elected Verderers.¹⁷

5.2 Collective-Choice Level

Both organisations invite debate over the management of the commons at the collective-choice level. There are two principal forums: the New Forest Consultative Panel and the Court of Verderers. The New Forest Consultative Panel has no statutory status but was formed in 1970 in response to a perceived need to allow local interest groups to become involved in the management of the commons. It has 72 representative members: of which 36 are parish council representatives from New Forest parishes and the rest of are made up from various local interest groups, local branches of national interest groups, and statutory bodies with responsibilities in the Forest.

Originally, the Verderers' Court was used as a forum for resolving problems amongst the commoners and for commoners to request the Forestry Commission to carry out certain management works on the common. Increasingly, however, the Verderers' Court is being employed by non-commoning residents, who appeal to the Verderers to use their power of veto over the Forestry Commission to ensure that no unwanted recreational development takes place.¹⁸

5.3 Operational Level

Both the Forestry Commission and the Court of Verderers have powers to make certain

¹⁷ The five elected Verderers are chosen from commoners whose names appear in the Forest's own electoral register. The office of Verderer is unpaid, with only a small expense allowance made. However, there appears to be a strong desire amongst many Forest residents to stand, either as appointed Verderers or as elected Verderers. Those Verderers standing as elected Verderers include active part-time commoners from the professional classes, part time commoners from agriculturally based work, and full-time (small-holding) commoners. The appointed Verderers are people who have either been in professions associated with the land and/or legal system, and are thus thought to bring professional skills to the job, or enthusiastic members of local interest groups

¹⁸ The Verderers Court meets at the Verderers' Hall, originally constructed in around 1297. Meetings at 10.00 a.m. on the third Monday of alternate months. A variety of people attend the Court; representatives of the Forest-specific interest groups, retired commoners, and other interested individuals. Typically the Court attracts around 40-50 members of the public, depending on the time of the year. The Court follows a traditional, formal procedure and after the Senior Agister has opened the Court, "presentment" are requested. A "presentment" to any Forestry Commission officer (usually the Deputy Surveyor), local authority representative, commoner, or other person wishing to make a statement or complaint in public on matters affecting the Forest.

Commoners appear to present their own problems very rarely. Presentments are usually made on behalf of the commoners by the Chairman of the Commoners Defence Association. Presentments are made from the dock. Presentments made by the Deputy Surveyor, of the Forestry Commission may seek the agreement of the Verderers for the development of further car parks, camping sites, playing fields and other recreational facilities or for timber inclosures. Presentments from the commoners may include requests for grazing management works to be carried out in specifically identified areas of the Forest (most often, the contentious clearing of open ditches, but also weed control, fence and gate repairs, etc.), or may include complaints about the behaviour of other commoners violating the operational rules of commoning laid down by the Verderers' own byelaws.

'byelaws' or 'operational rules'. The Verderers are responsible for the design and enforcement of byelaws which govern the commoners' use of the commons. The Forestry Commission is responsible for the design and enforcement of recreational byelaws for the commons.

In the New Forest, there are clearly operational rules governing grazing use of the commons. The Forest is divided into 4 districts. Each of the four districts has its own full-time Agister who supervises the commonable stock. Stock are rounded up regularly in "drifts", young stock are branded with the owner's initials or other mark, and, on receipt of a fee, the Agister clips the animal's tail and worms the animal. Four different patterns of clipping indicate the district in which the owner of the animal lives (and not the district in which the pony is running).

Limits of stock are achieved by the enforcement of a Verderers' byelaws which allows the Agisters to order stock off the common when forage appears short or weather conditions endanger the health of the stock, or when the condition of an individual animal has deteriorated.¹⁹ The condition of ponies is governed by a grading system, approved in 1980, with grade one representing the best specimen and grade four being a condition in which it is unacceptable for a pony to remain on the common.

However, the control over common grazing is not matched yet by control over recreational users.

6. THE NEED FOR REFORM

In order to address the need for reform succinctly, I have provided as summary of my analysis of the institutions governing the New Forest commons with reference to Ostrom's design principles for long-enduring common property resource institutions (Ostrom, 1990). In addition to her eight original principles, I have added a further four principles which seem particularly pertinent to multiple-use situations. On the following slides, I have shown my own additions in italics.

The Twelve Principles

1. *Clearly defined boundaries for all users*

No boundary rules exist for recreational users. The physical nature of the New Forest makes it generally accessible as an open-access recreational resource. The lack of fencing allows people to wander off highways straight onto the commons and the presence of grazing makes the commons more penetrable.

¹⁹Although the Verderers have had the power to make byelaws limiting the number of stock turned *onto* the common since 1949, no such limits have been set. There seems to be general agreement that the setting of a given number of stock for the commons each year would be difficult to achieve.

In multiple-use situations, *all* users of the resource should be clearly defined, either individually or by classification as a specific *type* of user. Operational restrictions can then be individual-specific (such as limits as to the number of cattle depastured) or use-specific (such as exclusion of mountain biking from sensitive areas). In essence, the institutions must make use of the inherent divisibility of the common land and introduce a form of spatial or temporal zoning.

2. Congruence between appropriation and provision rules and local conditions

Whilst current appropriation rules for grazing are closely related to the local conditions, recreational appropriation rules ignore the inherent sensitivity of particular areas or habitats. Appropriation rules for recreational users include the prohibition of certain clearly disruptive or damaging activities on the common, such as lighting fires, removing or damaging vegetation, or dumping litter, but do not offer any spatial or temporal restrictions over use of the commons.

In terms of provision, there is a *perceived* imbalance of the contributions made to the commons' management by different user groups. Commoners see themselves as caretakers of the commons (certainly their stock are valuable habitat managers) and see the recreational users as free-riders; no recreational user charges are levied for the common, other than for camping.²⁰

²⁰ The commoners appear to make less contribution to the management of the New Forest commons than on most traditional commons where commoners are responsible for activities such as weed clearance, forage harvesting, stock keeping and drainage. In the New Forest this has traditionally been carried out on the commoners' behalf by the Forestry Commission as agents to the freehold owner, the Crown. The commoners do not contribute to the cost of this maintenance, which is funded through public revenue from central government. Given the part-time nature of most commoning, this is probably the greatest contribution in terms of labour that can be expected of contemporary commoners. The commoners also contribute to the management of the commons through the payment of marking fees, although these are virtually met by public revenue through central government subsidies. However, an important point to note with respect to multiple-use commons is that the presence of the commoners' stock is a contribution in itself to the management of the common. It is widely agreed that grazing of the common to appropriate levels maintains the present mixture of habitats, which are valuable for recreational use and for the maintenance of species diversity.

On the surface, recreational users of the New Forest appear to play even less part as the commoners in contributing to the management of the commons. In terms of revenue, informal recreational pursuits contribute little to the commons directly; there is no charge for car parking or for individual use of the commons, such as horse riding and mountain biking. The only recreational users to make a major contribution to the income of the commons are campers, who pay a total of £1.5 million per annum (1994) in camping fees, representing the Forestry Commission's largest single source of income in the New Forest, 68% of its total annual income and 40% of its total costs (Forestry Commission, 1995:17). However, the contribution that most recreational users make to the management of the commons is through public revenue channels. The Forestry Commission, funded by central government, spends £3.7 million per annum on management of the New Forest as a whole (Forestry Commission, 1993:21). This expenditure includes the upkeep of the commons, control of deer, provision and maintenance of recreational facilities, and all other operating costs. The Forestry Commission claims that it makes an annual deficit of £2.2 million a year in the New Forest, which using the figure of eight million day visits per annum equates to 18 pence per day visit.

3. *Conformity of input:output ratios for each use*

Appropriation and provision rules may vary amongst users but should conform to the extent that there is a general perception of fairness. Between different user groups there should be a relatively uniform input:output ratio. That is, appropriators who are expected to contribute more to the management of the resource system might be expected to gain a higher value output. Equally, appropriators whose use of the resource is strictly limited might be expected to contribute less to its upkeep.

4. *Accessible collective-choice arrangements*

In the New Forest, the local *non*-commoning (Type B) community have the greatest access to modifying operational rules through the existing collective-choice arrangements. The wider, amenity users (Type C) are too geographically distanced and dispersed to be involved at the collective-choice level. The commoners (Type A) have access in theory but rarely exercise it in practice. This is probably the result of centuries of representation being made on their behalf by individuals from higher social classes.

In a multiple-use situation, all groups affected by the operational rules should have equal access to participate in modifying those rules and should be encouraged to participate. No single user group should hold superior authority within collective-choice arenas.

5. *Monitoring*

There is insufficient monitoring of resource conditions taking place in the New Forest. In addition, there is little attempt to link the conditions to a particular use/activity in terms of appropriator behaviour. In all cases, the monitors (who may be appropriators) are accountable to a variety of organisations representing appropriators, owners, or other interested parties. There is no integrated monitoring approach that seeks to validate the combined data/observations.

Externally employed monitors should feed information to the collective-choice decision-making body for the revision of operational rules. Different user groups should be encouraged to monitor the resource and to feed into the same arena. Broad standard criteria for monitoring procedures should be established in order to achieve conformity of data in terms of quality and quantity and to discourage a reliance on biased observation.

6. *Graduated sanctions*

Currently, penalties for a breach of operational rules, for both the commons and recreational users, are too low, disproportionate to the breach and poorly enforced.²¹ New appropriation and provision rules will demand new sanctions, which should be broadly equal across different users.

²¹In the New Forest penalties related to common grazing are specified by the byelaws and enforced by the Court of Verderers. Since 1964 the fine for breaching one of the Verderers' byelaws has stood at a meagre ten pounds (around 15 \$US). However, the fine for breaching one of the Forestry Commission's byelaws is up to £100. The Verderers have not tried an offence against their byelaws since 1970. In the last two years, less than five prosecutions have been made by the Forestry Commission.

7. *Conflict-resolution mechanisms*

There are arenas for conflict resolution *within* the different appropriator or 'user' groups. However, collective-choice arrangements should facilitate conflict resolution *between* user groups by establishing broad resource-system based objectives, where consensus might be reached. The New Forest Consultative Panel could prove a useful arena to resolve conflict *between* groups. However, the current constitution of the Panel renders it more suitable as a debating forum than conciliation mechanism.

8. *Minimal recognition of rights to organise*

The rights of appropriators to design their own institutions in the New Forest are not challenged by external government authorities. However, because of the history of statutory control of the New Forest, all institutions have to conform to the existing legislative framework.

Appropriators should be able to devise their own institutions. However, different institutions for different user groups must be combined and endorsed by some third party and may, therefore, warrant government intervention.

9. *Nested enterprises*

There are multiple layers of nested enterprises organising the appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities on the commons. However, the *different* users hold different degrees of representation at each institutional layer. In addition, there is a lack of unity in the types of relationships held between groups. Some complex relationships exist at each layer between certain user groups and there is an absence of any relationship to link other groups. For example, the commoners' rights and institutions mean that they have strong representation at the operational level and have close links with the horse-riding and hunting users of the commons. However, they have poor access to the formal collective-choice arenas and little to link them with more modern recreational users on the common.

10. *Horizontal integration*

Analysis of the New Forest suggests that there should be an attempt to integrate each user group's institutions at each level. A lack of integration at the operational level can inhibit the fostering of shared perceptions and values concerning the resource system and its use. Such shared perceptions are vital for the cooperation of users.

11. *Flexible rules*

The dynamic nature of most ecosystems coupled with the presence of multiple users means that the resource system can be in a constant state of flux. It is impractical, therefore, to try to establish a fixed set of rules for use of the resource. Instead, collective-choice decision-making must be capable of responding to changing ecological circumstances by imposing revised operational rules. The effect of such revisions must be monitored and fed into the future design of operational rules. A compromise must be achieved between rules which are flexible enough to suit changing resource conditions but constant enough to be easily

communicated and understood by the resource users.

12. Internal monitoring and enforcement backed up by external authority

The use of common property resources for non-extractive purposes may be compatible with extractive use. However, non-extractive uses such as recreation must be limited in the same manner as extractive uses; where the exclusion principle prevents the common property resource from becoming an open access resource. The physical difficulties of limiting large populations of people pursuing a variety of activities means that enforcement mechanisms must employ the use of appropriators, backed up by some external third party authority.

7. CONCLUSION

My summary illustrates that the introduction of a revised institutional arrangement may be necessary to restore sufficient control of the New Forest commons. There is a danger that the lack of conformity between the treatment of commoners and recreational users may reduce the degree of cooperation between the commoners, as they perceive that other users are free-riding on the benefits provided by the resource system and/or are generating costs in terms of damage to the resource units and system. Once the New Forest commoners perceive themselves as "suckers" (Tang, 1992:5), who refrain from using the common while others do not, a breakdown in the commoners' complicity with the operational management of grazing might be expected.²²

Reform need not necessarily take the form of drastic institutional changes, such as the privatisation of the commons, but may involve a reconstitution of the governing bodies within the New Forest to provide a new management authority. In particular, that authority must address the issue of scarcity within the multiple-use situation.

Recent changes in the Forestry Commission's constitution suggest that it may not be the most appropriate governing agency. The Forestry Commission are under increasing pressure to derive revenue from management of their land.²³ At the moment, the operational changes that the Forestry Commission are proposing involve the introduction of recreational user fees. Whatever the extent of recreational user charges, it is unlikely that

²² In such cases, the commoners might explicitly cite the recreational users as the cause of such a breakdown: at the moment they appear to be doing so implicitly, by using them as a scapegoat for breached operational byelaws. For example, remarks from a member of the local Fire Service suggests that scrub fires started by commoners are purposely made to look like accidental recreational damage in order to transfer the blame. Fires are started by the lighting of a piece of string placed within pony dung. The string smoulders for some time, enabling the perpetrator to vacate the scene and making the fire look as if it were started by a discarded cigarette butt.

²³ In August 1994, the Government announced its intention to form a new trading body from the current half of the Forestry Commission that operates as 'Forest Enterprise' and is responsible for managing the commons. The new "First Steps Agency" is to have an up-dated accounting system and financial targets. It will be responsible for providing "non-market outputs", which appear to include recreation, and there will be arrangements for ensuring that the new body provides "value for money." (Scottish Office Environment Department, 1994).

they will address damage to the resource system through recreational use and may even increase damage through over-exploitation for financial gain. There is a deep concern in the New Forest that the Forestry Commission's plans for the commons will be demand-led; with recreational development and facilities provided according to the demands of the recreational users. This is not surprising. The institutions governing the New Forest commons evolved out of the competing demands of the Crown and the commoners. A characteristic of the present institutional arrangement governing the New Forest commons is that it continues to be *use-led* (or '*demand-led*'). That is, the institutions governing the commons comprise a series of checks and balances, whereby different user groups - the commoners, the Crown and now the recreational users - all compete for their own particular interest.

It may be possible to reach a broad consensus on the basic needs of each user group, but it is far from proven that such needs when demanded in aggregate can be met completely within the available resource system of the commons. If such needs cannot be met completely (and it is generally acknowledged that they cannot), then a debate about distribution and fairness takes over. In such cases, the rules for conducting the debate become crucial.

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