Discussion Paper

"Towards Sustainable Management of Deer in Exmoor and The Quantock Hills"

A draft to initiate discussion and consult the views of statutory and voluntary organisations regarding the feasibility of :

- creation of a co-ordinated network of local Deer Management Groups based in and around Exmoor and the Quantocks Hills.
- ii. development of a joint deer policy document, that can be supported by most, if not all, statutory and voluntary organisations with an interest in the region's deer, to promote their conservation and sustainable management.

(draft prepared for ENP by J Langbein, July 1998)

[NOTE: This draft 'Consultation Starter' was produced over 2 decades ago. As such much has changed in regard to deer management in the southwest Region and well as nationally. In particular it should be noted that at the time of writing the draft

- i) The <u>Hunting Act 2004</u> did not yet exist, which subsequently made it illegal to hunt deer as well as other wild mammals with dogs, unless the purpose and manner of hunting is 'exempt' based on <u>Schedule 1</u> of the Act
- ii) The 'Close Seasons' when wild red and roe deer <u>may not</u> legally be killed were changed via the <u>The Regulatory Reform (Deer) (England and Wales) Order 2007</u>, to in case of Red and fallow deer: Stags 1st May to 31st July; Hinds 1st April to 31st October; and for Roe deer: Bucks 1st November to 31st March and Does 1st April to 31st October.

JL. Dec. 2019]

(J Langbein, July 1998)

Discussion Paper:

"Towards Sustainable Management of Deer in Exmoor and The Quantock Hills"

(J Langbein, July 1998)

SYNOPSIS

A research project into the ranging behaviour and ecological impacts of deer within Exmoor and the Quantocks Hills was completed last year (Langbein, 1997), having been commissioned by a diverse range of organisations (listed below). Recommendations arising from this research included the suggestions that a) "a co-ordinated network of relatively small Local Deer Management Groups should be created" and b) "that a widely supported Regional Deer Management Policy Document should be developed, to strengthen co-operation between landholders, voluntary and statutory organisations, and to guide and encourage formation of further local DMGs in addition to those already in existence". This supplementary discussion document has been put together to elaborate further on these ideas, and to stimulate constructive debate on how greater co-ordination of deer management within Exmoor and the Quantock Hills might best be achieved in practice.

Two large deer management organisations already exist covering the main red deer ranges of Exmoor (Exmoor & District Deer Management Society) and the Quantocks (Quantock Deer Management & Conservation Group). In addition the Exmoor Deer Forum and Quantocks Deer Forum meet once or twice a year to allow wider discussion of deer related issues. These large societies are useful for exchange of information and organisation of an annual deer census to assess trends in the overall deer population. However, the two areas of operation respectively encompass land divided amongst over 600 and 100 landholdings of significant size (average c. 100 ha per holding), and the ability of the existing groups to influence and co-ordinate other deer management action, is greatly limited by the very high proportion of non-participating landholders. Furthermore, in most instances where deer are found to have excessive impacts on agriculture, forestry or conservation vegetation, this tends to be of a fairly localised rather than regional nature; such that reductions in deer density may well be called for in some localities, but not necessarily be justified on a regional basis. On the other hand the ability of individual small landholders to achieve their own local deer management objectives whilst acting alone, is usually restricted by the fact that deer, especially red and fallow deer, will commonly move between several different landholdings on a daily basis.

This discussion paper sets out from the premise that there is a need for an <u>additional</u> primary tier of co-operation on deer management among relatively small groupings of adjoining landholders: to work together towards sustaining a mutually agreed <u>local</u> number of deer. Such landholder-groups, and agreements between them over contiguous areas of land, are seen as the essential **building blocks** for a more effective regional deer management system. Formation of these smaller (sub) groups is being suggested here **to underpin, not to replace**, the existing larger deer management societies. Secondly, formation of small groupings of landholder is suggested as one way in which the numerous small farms and other landholders of the area could be better represented within the existing regional deer management societies, where they are currently underrepresented by comparison to large landholding organisations and other statutory and voluntary bodies.

In summary, it is proposed that:

- i. a series of several landholder-based 'Local Deer Management Groups' are set up, each covering an area of around 1000 to 5000 hectares (c.2500 12500 acres);
- ii. one or more 'District Associations of Deer Management Groups' are developed (based on the framework of the large deer management societies and forums already in existence), and made up of one representative from each Local Deer Management Group, plus representatives drawn from the various statutory organisations and voluntary advisory bodies with an interest in deer management.

A comprehensive system along the above lines is unlikely to develop without the active support and encouragement of the major organisations interested in the regions' deer. It is therefore further proposed that a widely supported Regional Deer Policy Document or strategy should be drawn up, to help promote a more co-ordinated approach to deer management. Various first ideas for possible policies which might be included in such a document are outlined in the fuller version of this paper: addressing issues ranging from support for local management groups, to improved monitoring of deer culls, education and training, protection of vulnerable habitats from overgrazing, and policies aimed at setting and maintaining overall deer population sizes at least above widely agreed minimum figures. These draft policies are intended foremost to serve as 'starters' for discussion, and it is hoped that any feedback obtained will help to clarify which of them are likely to be too contentious to pursue, and those on which broad consensus may be achieved more readily.

The Exmoor and Quantocks Deer Research project (1993-97) as well as this supplementary paper was funded jointly by:

The British Deer Society, The National Trust, Exmoor National Park Authority,

League Against Cruel Sports, Royal Society for the Prevention of Cruelty to Animals,

British Field Sports Society, Ministry of Agriculture Fisheries and Food, English Nature,

Somerset County Council, Countryside Commission, and International Fund for Animal Welfare.

The support of all these organisations is gratefully acknowledged. The contents of this discussion paper should not, however, be taken to represent the present policies of any of the sponsors listed.

Preface:

Exmoor and the Quantock Hills contain the largest and most readily visible herds of wild red deer in England. These herds form part of a wider population extending over much of the western half of Somerset and Devon and well south into Cornwall. Although red deer are not rare nor thought to be in decline at regional or national level, they are an important part of the history and ecology of the Exmoor NP and Quantock Hills AONB. Roe deer are also widespread in both areas, and fallow are locally common in the east of the NP. The important need to have sound regional policies on deer management was highlighted once again recently by results of the 'Visions for Exmoor Survey' (Park Life, July'98), which showed that local residents, when asked about what they valued most about Exmoor, overall placed red deer above any of the many other 'special features' of that area.

While there is clearly tremendous enthusiasm among the public to conserve the red deer herds in particular, the numbers and distribution of all three species must be carefully balanced against their impact, together with that of domestic stock, on semi-natural habitats and on the interests of agriculture and forestry. Deer numbers within Exmoor and the Quantock Hills have increased substantially over the last three decades; combined estimates for the two areas currently exceed at minimum of 3000 red deer, over 500 fallow, and at least several hundred roe. The herds remain in very good condition, but in some, though by no means in all parts of the region, grazing by deer is significantly suppressing natural tree regeneration in ancient semi-natural woodlands, and causes substantial losses to commercial forestry and farm crops.

The West Country's red deer are also the only red deer herds in the UK still subject to huntingto hounds. This makes deer management a particularly sensitive and contentious issue in the region. The controversy over hunting has intensified still further following the recent decisions taken by the National Trust (NT) and the Forestry Commission (FC) not to renew licenses for deer hunting on their land, and the continuing parliamentary consideration of a nation-wide ban on all hunting with hounds. However, even the present situation presents a very significant change over the past. Thus, a very high proportion of land (not only NT and FC land, but also that of the League Against Cruel Sports and other individual owners who had already banned hunting previously) especially within the Quantock Hills, but also parts of Exmoor, has or will as of the coming season no longer be hunted over by the Staghounds. On the other hand, a significant proportion of local landholders have stated that a change in their ability to hunt deer, will lead them to tolerate significantly fewer deer on their land than previously. A planned reduction of deer numbers in some areas need not in itself be detrimental to conservation of the herds, and may in the event be balanced by increases in areas where their impact is more readily sustained. However, in the absence of a coherent overall policy for deer conservation and co-ordination of deer management within the NP or AONB, or plans on how these recent changes will be managed, a great deal of uncertainty exists; especially among the many landholders from both sides and other interested parties, who are keen to continue to conserve and manage deer in a positive manner irrespective of the hunting issue.

In light of the very uneven distribution of deer and localised nature of their impact on habitats within Exmoor and the Quantock Hills highlighted by results of my recent research (Langbein, 1997), I recommended "the creation of a network of relatively small local Deer Management Groups"; and that "a widely supported regional deer management policy document should be developed, in order to strengthen co-operation between landholders, voluntary and statutory organisations, and guide and encourage the formation of further local DMGs in addition to those already in existence". The recent changes outlined above make it all the more important to ensure good levels of co-operation among neighbouring landholders in managing deer, even where they hold opposing views on acceptable methods of deer control.

This supplementary discussion paper has been produced on behalf of the financial sponsors of the recently completed Exmoor & Quantocks Deer Research project (1993-97), in order to expand on ideas for a more co-ordinated approach to deer management, and the development of a widely supported deer policy. The support of all the following organisations is gratefully acknowledged:

The British Deer Society, The National Trust, Exmoor National Park Authority,

League Against Cruel Sports, Royal Society for the Prevention of Cruelty to Animals,

British Field Sports Society, Ministry of Agriculture Fisheries and Food, English Nature,

Somerset County Council, Countryside Commission, and International Fund for Animal Welfare.

This consultation draft should not, however, be taken to represent the policy position of any of the sponsoring organisations listed above, nor indeed even to suggest that the idea for formulation of a joint deer policy has been agreed by them in principle. At this early stage the draft presents merely my own views and synthesis of various management options suggested by others. It is intended purely to provide a 'starter' for discussion: to explore firstly, ways of improving co-ordination of deer management via a network of smaller local deer management groups, and secondly the feasibility of developing any joint deer policy for the region among the main organisations concerned; and if so, help decide which policy suggestions are likely 'non-starters' and others on which broad consensus may be achieved more readily. If, on the basis of comments received in response to this first stage draft, the idea to develop a detailed deer management strategy for Exmoor and/or the Quantocks is shown to have adequate support, a more comprehensive consultation process is likely to be required, to help decide the final form and content of any such document(s).

In putting together this initial draft, I have relied on various deer management policy documents produced by other organisations, and also on the results of the recent Quantock Landholders Deer Management Questionnaire Survey (QDM&CG, Jun'98). While individual literature references are not shown in the text, a list of the main sources used is given below. For the 'Policies' section I should in particular like to acknowledge the SNH Policy paper: 'Red deer and the Natural Heritage', parts of which I have re-used here as a template for this early stage of consultation.

Bibliography:

Exmoor National Park Authority (1997) Management of red deer on Exmoor. Statement by the Exmoor National Park Authority.

Langbein J (1993) (ed) Forestry Practice Guide: Forest Deer Management. Consultation Draft. (unpublished)

Langbein J (1997) The ranging behaviour, habitat-use and impact of deer in oak woods and heather moors of Exmoor and the Quantock Hills. British Deer Society. Fordingbridge.

Langbein J (1998) Landholders Deer Management Questionnaire Survey Results. Quantock Deer Management Group (unpublished)

Langbein and Putman (1992) Conservation and management of deer on Exmoor and the Quantocks. National Trust London.

National Trust (1998) Management of red deer on National Trust land in Somerset. National Trust. (unpublished consultation draft)

Scottish Natural Heritage (1994) Red deer and the natural heritage; SNH Policy Paper. Battleby.

The Deer Initiative (1995) Deer Management Groups: Advice and Support in England. Forestry Authority. Cambridge.

1. Introduction

- 1.1 Red deer are neither rare nor thought to be in significant decline at national nor regional level. On the contrary their populations, along with those of roe and fallow deer, have expanded significantly in Southwest England both in range and numbers over the past fifty years. In England, none of these deer species currently have any special legal protection to ensure their conservation. The primary responsibility for the stewardship of deer in this country hence lies with individual landowners and managers. It is their livelihood or land use objectives that are most directly affected by impact from dees, and indeed they, subject to restrictions regarding close seasons and permitted methods of taking deer laid down in the Deer Act (1991), who have the legal right to decide how many deer to tolerate or cull on their land. In any voluntary but sustainable system of deer management, the role of owners and managers must therefore be central, and the risk that landholders suffer significant net losses through their tolerance of deer should be minimised. Preferably, there should be clear and demonstrable benefits to be gained through sustaining a healthy deer population, but one that remains at a level where it does not cause significant losses in biodiversity in semi-natural habitats.
- 1.2 Although decisions on deer management lie largely in the hands of individual owners or managers, their ability to achieve any clear management objectives whilst acting alone, is often restricted by the fact that the deer do not respect land ownership boundaries. Especially in the case of the larger 'herding' species, such as red!and fallow, even the individual annual home range sizes of the deer tend to be several times larger than the relatively small average landholding size in and around Exmoor and the Quantocks (median landholding size = c.100 hectares; mean annual range of red hinds c. 400 ha; for red stags c.1000 ha, Langbein, 1997). On the other hand, the land areas within the Exmoor NP (69200 ha) and the Quantocks AONB (9500 ha), encompass more than 600 and 100 individual landholdings respectively, while numerous further holdings beyond the boundaries of both those conservation areas are of similar importance in terms of red deer numbers. Hunting to hounds has in the past encouraged many landowners in these regions to tolerate higher numbers of red deer on their land than they might otherwise choose too. However, the great majority of the annual cull of red deer, both within as well as outside of the hunted parts of the region, are taken independently by individual landowners or their appointed stalkers through shooting.
- 1.3 In realisation of the need for greater co-ordination of management, two large deer management organisations were established during the early 1990's within the main red deer range of Exmoor and Quantocks (Exmoor & District Deer Management Society and Quantock Deer Management & Conservation Group). In addition two rather smaller DMGs (Luxborough DMG and Nettlecombe/Elworthy DMG) together cover the main sections of the Exmoor NP (Brendon Hills) where fallow rather than red deer predominate. The large (in terms of total area of operation) deer management societies are useful for exchange of information and annual organisation of a the deer census giving minimum numbers and trends in the deer population. However, the ability of these groups to influence and coordinate other deer management action, or obtain an accurate picture of overall levels of culling, is greatly limited by the very high (majority) proportion of non-membership landholdings and owners. Even given the ideal scenario of complete involvement of all landholders, maintenance of effective co-operation among the literally hundreds of local landholders within a single management group would in any case seem unachievable.
- 1.4 Instead, the present draft is based on the premise that there is a need for a primary tier of co-ordination of deer management among relatively small groupings of <u>neighbouring</u> landholders: to work jointly towards sustaining a mutually agreed local number of deer. Such landholder-groups and agreements between them over contiguous areas of land, are

seen as the essential building blocks to form any wider regional deer management system. A high proportion (60%) of respondents to a recent deer management questionnaire to consult landholders in and around the Quantock Hills (June 1998), stated that they would indeed be interested in forming such local groups. Importantly, however, many also expressed the unsolicited view, that such local groups should be formed under the umbrella of some wider regional group or policy. [A similar survey of Exmoor landholders' views is planned for later this year].

- 1.5 This draft develops ideas on three complementary proposals:
- I) Formation of a series landholder-based 'Local Deer Management Groups' (LDMG).

To define optimal populations at a local level, and produce outline management plans for contiguous areas of around c.1000 – 5000 hectares of land, agreed amongst the approximately 1 - 25 adjoining owners / managers making up each group.

II) Establishment of one or more 'District Associations of Deer Management Groups' (DADMG); made up of one representative from each LDMG, plus representatives from statutory and voluntary advisory bodies with an interest in the region's deer.

The areas covered by each District Association will be governed to an extent by the number and range of local groups actually established, although separate DADMGs are initially envisaged to cover i. The Quantock Hills and Environs, ii. Brendon Hills, and iii. the remaining areas within the Exmoor ESA (and be based on the framework of the main deer management societies / groups already in existence).

III) Development of a regional deer management policy document, to which many, if not all, the major statutory and voluntary organisations with an interest in the deer, will feel able to lend their joint support.

For want of a better name, this 'conceptual' group of organisations envisaged as subscribing to such a joint policy paper are referred to below as 'The Exmoor & Quantocks Deer Partnership' (E&QDP).

- 1.6 Among these three tiers, the role of local landholders on their own and acting through LDMGs is seen as being central. The role of the DADMGs should be largely advisory, and provide for a wider overview and liaison between local groups. The role of E&QDP is seen as supportive, to facilitate the initial formation and maintenance of local groups and district associations, and to promote sustainable approaches to conservation and management of deer.
- 1.7 The number of meetings being held per year to discuss deer matters in the Westcountry, and attended by several representatives from the numerous organisations with an interest in deer, has escalated greatly over recent years. The suggested management structure, as proposed below, aims to reduce rather than increase the burden of numerous meetings. Meetings of LDMGs should not be required more than twice a year; with only one representative from each LDMG also required to attend one or two meetings per year of the DADMG. The E&QDP, if formed, is not envisaged as having any separate meetings as such, with all its members likely to be represented on at least one of the DADMGs.

- 2. Formation and Remit of a series of small, landholder-based Local Deer Management Groups (LDMGs) within Exmoor ESA and Quantock Hills.
- 2.1 The suggestion for formation of 'Deer Management Groups' is by no means an original idea. Deer management groups are common throughout much of Scotland, as well as in continental Europe. Many DMGs also already exist within England, including several in red deer strongholds such as the Lake District, and formation of further DMGs throughout England is firmly supported by 'The Deer Initiative' (a nation-wide partnership of government and non-government organisations, with the aim of promoting a co-ordinated approach to the sustainable management of wild deer). In SW England the establishment and effectiveness of DMGs has tended to be limited, not only by the controversy over hunting deer with hounds, but also by the difficulties imposed by the comparatively small average landholding sizes. Consequently, where deer management group areas attempt to encompass entire geographical regions or sub-populations of deer, to be effective agreements are needed between a huge number of landholders. Decisions on the most appropriate areas to serve as the basic unit for management, therefore, need to be based not only on the estimated range of local deer herds, but equally on the largest contiguous area over which close agreement is thought practical. The principle of starting with formation of relatively small groups, as suggested here, and expanding as the opportunity allows, is also advocated by "The Deer Initiative".
- 2.2 The present proposal should <u>not</u> be misunderstood as 'carving-up' of the present area of operation of the two large deer management societies (E&DDMS and QDM&CG) into a number of smaller sub-groups. While such delineation on a map would serve to reduce the number of landholders falling within each area, the effectiveness of any such group imposed on landowners would remain inhibited by the non-membership of some and reluctance of other estates to participate fully. Instead, it is suggested that small groups are formed, based initially on a) locations where it is already known that there are a number of adjoining landholders supportive of the idea (as indicated via the recent Quantock- and planned Exmoor-landholders questionnaires), and b) other 'focus zones', where formation of local groups seems particularly desirable, and hence generation of the necessary support is thought worth exploring further (for example, in specific areas which are isolated geographically in some way, or known to support fairly succinct sub-populations).
- **2.3** The main aim of each LDMG should be to work together towards a deer population level which is acceptable to all members. This will often require balancing differing objectives and priorities, such as to:
 - minimise damage to forestry, agriculture or natural vegetation
 - maximise income from venison and/or letting of stalking rights
 - maintain deer as part of tourist attraction and availability of deer for hunting
 - maintain a viable population of wild deer in the longer term

Local success in reaching agreement will depend upon a willingness for people to reconsider their views, reject some of their prejudices and accept compromise.

- 2.4 If a cull is required, a joint cull plan should be decided including its breakdown by sex and age class. This should not require agreement on the methods of control employed on different landholdings. Thus, while some members may only allow culling by rifle, others may choose for all or part of any cull required on their land to be taken by hunting, and others may prefer for no culling on their land unless it is essential to achieve joint aims.
- 2.5 In the context of red and fallow deer herds on Exmoor and the Quantocks, it is proposed that the aim should be to form LDMGs which cover no less than 1000 ha, with an upper limit of in the region of 5000 ha. Recent research in Exmoor NP has shown that over 95%

of the activity of individual red deer, which were radio-tracked throughout at least one full year or more each, was restricted to areas from 275 to 700 ha in case of hinds, and from 1000 -1200 ha for mature stags; the combined range for individuals commonly associating as part of the same social group or herd would clearly be estimated to be somewhat larger. For LDMGs, of between 1000-5000 ha, especially at the smaller end of this scale, regular movement of deer both into and out of the management area is still likely to occur at some times of the year. However, at least in the case of the female population, management towards fairly stable numbers (or indeed any other optimal population targets sought) should be much more readily achievable over areas of this size, by comparison to the independent management actions currently undertaken by many individual estates, which in the majority of cases extend over only 50 - 300 ha each.

- 2.6 While complete coverage of all the land within the Quantock Hills and Exmoor ESA through directly abutting LDMGs might be an 'ideal' future objective, such coverage is likely to be unachievable in the short term. Nevertheless, as LDMGs begin to be seen to bring direct benefits to participating landholders in terms of achieving local land management aims, those already formed may expand and stimulate formation of others, and thus become increasingly effective in fulfilling wider regional objectives. Provision of help with the initiation of LDMGs and co-ordination into DADMG should form one of the main tasks of E&QDP (see Section 4).
- **2.7** Summary of suggested structure and tasks for LDMGs:

Membership:

Groupings of 2-25 landholders covering combined contiguous areas from 1000 to 5000 hectares (c.2500 – 12500 acres).

Membership of local groups should for the most part be limited to landholders

(owners, occupiers or the managers responsible for deer on their land, irrespective of whether individual owners of land, or landholding organisation such as wildlife trusts, NT, ENPA, County Councils).

Single large landholders (>1000 ha) who prefer to prepare deer management plans on a single estate basis and may be represented directly on the DADMG, although direct liaison with a number of adjoining holdings should be encouraged.

Main tasks

- a) Production of an outline deer management plan giving details including:
 - i. Agreed 'Optimum' sustainable target population size & age/sex ratio for red deer; and also for roe / fallow / muntjac if present. Initial target population sizes are likely to be based on information from annual census, and whether current impact on crops and habitats is thought acceptable.
 - ii. Desired distribution of deer within DMG range, and any plans for Habitat management and protection of crops/natural regeneration against deer.
- b) Participation and help with local co-ordination of annual district wide deer census.
- c) If a cull is required, propose a cull plan for the following season(s): Such plans should be based on the annual censuses and long as well as short-term objectives of the LDMG regarding population size. Plans should include:
 - i. breakdown at least into numbers of adult females, males, and juveniles of each species to be taken
 - ii. decision on who takes what (i.e. breakdown of cull among individual group members and/or hunt; or stalker(s) appointed to undertake cull for the group as a whole),
 - iii. monitoring of progress of cull (e.g. via a mid-winter meeting),
 - iv. Collation of data on culls taken by / for the group (carcass weights, sex, ageclass, pregnancy rates, condition).

d) Appoint a group chairman or spokesman to represent the LDMG at meetings of the relevant DADMGs. Submission of outline management plan and proposed cull to the DADMG for comments/suggestions (to obtain input from e.g. English Nature and/or NP/AONB ecologist, to evaluate / mitigate any nature conservation conflicts foreseen; and in relation to plans from other LDMGs in the same district)

Meetings: (of LDMG)

Two meetings per year should suffice e.g.

- a) Autumn meeting: to assess current year's census results, agree desired population size, habitat management, and cull plan if required.
- b) Mid-winter meeting: to review progress of current year's cull, re-direct effort if required; and plan annual spring census.

3. Formation and Remit of District Associations of DMGs (DADMG):

The main purpose of each DADMG should be to provide a regional overview and good exchange of information between LDMGs. Secondly it provides an opportunity for direct input from non-landholding statutory and voluntary organisation with an interest in deer and land management within the district.

Possible 'Districts'

It is proposed that initially two or possibly three DADMGs should be formed or developed out of the structure and general areas covered by the existing deer management societies / groups within the Exmoor and Quantock region: that is, the Quantock Deer Management & Conservation Group; the Exmoor & District Deer Management Society, and the Luxborough DMG and Nettlecombe DMG. e.g.

- i. Quantock DADMGs: to encompass all LDMGs established with land within c. 2 miles of the boundaries of the Quantock AONB
- ii. **Exmoor DADMGs**: to encompass all LDMGs with land falling within or close to the Exmoor ESA. This will coincide generally with areas covered in the annual E&DDMS census, but should also incorporate Grabbist Hill (mainly red deer). And possibly also the fallow deer dominated parts of the Brendon Hills, unless a separate DADMG is formed there (as iii).
- iii. [Brendon Hills DADMGs ?]: to encompass the existing Luxborough DMG, Nettlecombe/Elworthy DMG and any other LDMGs formed within the fallow deer dominated eastern quarter of the Exmoor NP. In view of being part of the Exmoor ESA, and only fairly small number of LDMGs formed within the Brendons, it may be preferable for representation from these to be included within the proposed Exmoor DADMGs above.

The areas covered by different District Associations will be governed to an extent by the number and range of local groups actually established. There would not seem to be any need to adhere to any strict boundaries for district associations. Thus, if just one or two LDMG are formed falling just outside the suggested districts, the district could be extended accordingly; whereas if numerous LDMGs are formed within a relatively distinct region, such as e.g. the Brendon Hills, a separate district association there might become appropriate.

Suggested Membership

- i) One representative from each LDMG
- ii) Any additional major landholders (> c. 1000 ha) wishing to produce individual management plans for their own estate, but within the context of the district wide objectives.
- iii) One representative from major Landholding 'organisations' such as e.g. Exmoor NP, Forestry Enterprise, National Trust, Wildlife Trusts, Badgworthy LC, LACS,), if not already adequately represented via their LDMGs.

- iv) Other non-landholding statutory and voluntary organisations with a clear interest in deer or able to offer relevant advice /support relating to deer management within the district.
- (e.g. English Nature; Forestry Authority; BDS, Friends of Quantock; Quantock JAC, Quantock Warden Service, Police, MAFF, NFU, CLA, Timber Growers Association, RSPCA, Staghounds Association, BFSS, BASC).

Main tasks

- a) Provide opportunity for ready information exchange between LDMGs, and maintenance of a regional overview.
- Identify priority areas where additional LDMGs are needed / useful, and assist with their formation.
- c) Assist LDMGs with production of local deer management plans. Evaluate and comment on outline plans submitted by local groups from view of possible conflicts with other local nature conservation or land management aims, and in relation to the aims of neighbouring LDMGs, and for deer management in the district as a whole.
- d) Co-ordinate annual district wide spring census, and collate / feedback census results and overall cull information for the district as a whole.
- e) Determine district wide aims for population size and distribution. Primarily these should be based on summation of local targets sought by LDMGs. However, while some LDMGs may decide that reduction of the population is required, other areas may be identified where higher deer numbers could be tolerated and would be particularly desirable (e.g. from view of public / tourist interest). To achieve such re-distribution, in appropriate cases efforts could be directed at increasing the local carrying capacity / attractiveness to deer in various ways (e.g. through favourable habitat management; reduced stock grazing; minimal cull / disturbance policies), for which grant aid might be sought e.g. via E&QDP.
- f) Identify any further research, survey and monitoring needs.
- g) Assist as required with (co-operative?) marketing of venison or other income from deer.
- h) Consider the basic requirements for financial support to fund the work of the DADMG and constituent LDMGs within it; make applications for funds as appropriate to 'The Deer Initiative' or 'E&QDP'.
- i) Consideration might also be given to creation of a temporary/part-time post of 'deer liaison officer' to work on behalf of the District Association(s), during the setting-up phase of a such a system based on LDMGs. That is, to help with e.g. drawing together local groups of landholders, attending LDMG meetings as required, and assisting such groups in the initial development of local management plans. Possibly funded through association members (i.e. E&QDP), or other external sources such as 'The Deer Initiative', LEADER II or similar schemes?)
- j) Preparation of a short annual report to provide for exchange of information between different DADMGs, and inform the wider public. (In view of the very wide representation envisaged on DADMG, such an annual report may negate the need for additional <u>public</u> meetings, such as the Quantock Forum and the precursor of the present Exmoor Forum).

Requirement for a policy at DADMG level?

The role of DADMGs as proposed here is seen foremost as an advisory forum, to enable ready exchange of information and provision of a regional overview. DADMGs will encompass a great diversity of views from among its core of landholders (represented directly or through their LDMG) with varying land management aims, as well as a broad range of other interest groups. Not all or even the majority of DADMG members may wish, nor should they be required, to subscribe to any detailed overall deer management policies. (With perhaps the possible exception, that they should support the general principle of a co-ordinated approach to the sustainable management of wild deer, self-evident to some extent through their very participation within the group). Restriction of membership to only those landholders who subscribe to a particular deer management policy would in fact be likely to limit the ability of the DADMG to establish a comprehensive network of liaison across the district.

Nevertheless, there would seem merit in developing a regional deer policy document, to which at least a significant number of the organisations on the group may <u>choose</u> to subscribe, in order jointly to promote conservation of the deer and adoption of a more co-ordinated approach to their sustainable management. Suggestions for formulation of such a policy are explored further in the following section.

4. PROPOSALS FOR A JOINT REGIONAL DEER POLICY

Introduction

- 4.1 Deer management is a contentious issue in many parts of this country as well as abroad, between those who wish to conserve maximal deer numbers for aesthetic reasons, or for sport and related revenue from deer, and those concerned about the impact of high deer numbers in terms losses of bio-diversity in semi-natural habitats, and damage to farm and timber crops. However, over and above these already complex issues, deer management in the Exmoor, Quantocks, and Tiverton areas of the Westcountry is also an extremely emotive subject, because of the intense controversy regarding the hunting of red deer to hounds; such hunting no longer being practised in any other parts of the UK.
- 4.2 In view of the strongly opposing views on deer control held by some, a single comprehensive deer policy or strategy subscribed to by all or even most organisations with an interest in the region's deer may seem an unrealistic goal. Nor is formulation of such a joint policy suggested here as an attempt to stifle the legitimate debate that will no doubt continue on the welfare implications of differing methods of culling deer. However, despite conflicting views on hunting and the most appropriate population levels, many of the statutory and voluntary organisations concerned, as well as numerous individual landholders, have frequently declared their shared overriding wish for a significant population of red deer to be conserved in this region. To achieve that aim, and the sustainable management of red and other deer species across the region in the longer term, a more co-ordinated approach is required. As outlined in the previous sections, it is proposed that this should be built up from a firm basis of agreements among small groups of adjoining landholders. In the short-term, however, such a network of local management groups is unlikely to develop without the encouragement and support of the major organisations interested in the region's deer. It therefore proposed that a joint policy document is developed by organisations supportive of developing a more co-ordinated approach, in order jointly to promote the formation of a network of LDMGs, and help to secure conservation of deer through adoption of sustainable approaches to management on all land under their own jurisdiction.
- 4.3 For want of a better name, the 'conceptual' group of organisations envisaged as possibly subscribing to such a joint policy paper are referred to below as 'The Exmoor & Quantocks Deer Partnership' (E&QDP).

4.2 Draft Policies for consideration:

E&QDP is committed to ensuring the long-term survival of healthy and well-distributed populations of wild deer on Exmoor and the Quantock Hills in balance with their environment.

The conservation of all three of the main deer species present, red, fallow and roe, is considered important. However, the perpetuation of a substantial population of red deer is likely to be a special priority within policies of E&QDP, in light of the long and continual association of that species with the region and its cultural heritage.

Sustainable Management

The presence of deer must be recognised as an aesthetic benefit (their very presence giving pleasure to people), an exploitable resource (recreational hunting and venison), an important part of the region's ecology, and as a potential problem (modification of semi-natural habitats and damage to timber and other crops). These factors are not mutually exclusive. While the priorities given to differing objectives may vary across the region, all management of wild deer should comply with the basic principles of 'sustainable *use*', which may be defined as "the use of components of biological diversity in a way and at a rate that does not lead to long term decline of biological diversity".

E&QDP will work to promote a co-ordinated approach to the sustainable management of deer among landholders, and supports the formation of a network of local deer management groups (LDMGs) as the underlying basis for that approach.

Optimal populations should be defined by landowners at a local level, with advice from conservation bodies and other interests. Each LDMG should produce a management plan to integrate any control of numbers with management of the habitat.

E&QDP will consider ways of providing direct assistance with establishing LDMGs and production of management plans.

Formation of LDMGs may in some cases be eligible to apply for financial support from 'The Deer Initiative'. Potential E&QDP partners might, however, like to consider whether a temporary (part-time?) post of 'deer liaison officer' should be created, to work on behalf of the E&QDP (or for one or more DADMGs), during the initial phase of setting up new LDMGs; to help draw together suitable groups of landholders, attend initial local meetings as required, and assist such LDMGs directly with drawing up of management plans. (In view of the community involvement as well as environmental benefits, could eligibility for LEADER II or other grant aid could be investigated).

Minimum Population size

The question of a defining the minimum 'biologically viable' population on Exmoor and the Quantocks is not seen as an important issue at present; not least as the local red deer herds are part of a much wider 'population' stretching well into Devon and Cornwall, as well as western parts of Somerset. Occasional immigration of animals from other adjoining areas would thus seem very likely re-colonise, even if populations on Exmoor and/or the Quantock Hills were ever to fall to very low levels.

However, aside from conservation of the species itself, conservation of a *fairly substantial and readily visible population* of red deer, both within Exmoor and the Quantock Hills, is seen as an important management aim from view of public enjoyment of this "special quality" of these areas. In order to be able to continue to fulfil this aim, it would seem appropriate to set (through consultation) a lower bound of population size; with a commitment by E&QDP to implement measures to prevent further decreases, if numbers are ever shown to fall below that limit.

Given that current overall population levels are not believed to be so excessive that there is any widespread regional need or demand for overall population reduction, a minimum population limit of around 50% of present numbers might be a suitable starting point for discussions. Based on recent census estimates, this would suggest a presumption for maintenance of at least 1250 red deer within Exmoor and 250 within the Quantocks, and result in average overall densities at only around 2 and 2.5 red deer per 100 ha respectively. Such minimum population levels would also remain above the red deer numbers estimated to have been present at the time of designation of both these conservation areas.

E&QDP is committed to retaining at least a minimum of(1250?) red deer within Exmoor and ...(250?) within the Quantock Hills. Should consecutive annual censuses or other evidence indicate that numbers have fallen to within (e.g.10%) of those minima, action will be taken to effect reversal of such declines.

Such action may include introduction of minimal cull policies on any land under the direct jurisdiction of E&QDP partners, and promotion of adoption of such policies among other major landholders. Consideration may also be given to a scheme of incentive payments to landholders entering long-term management agreements to conserve deer within a defined parts of the region (see compensation schemes below).

The assurance of long-term conservation of deer herds at sustainable (if not necessarily the same as present) levels should in time also be delivered via the planned network of LDMGs advocated above.

'Optimal' overall population size

'Optimal' population sizes will depend entirely on management objectives, and for the region as a whole must be formulated through summation of the deer numbers likely to be acceptable in different localities; local optimal targets in turn depend on compromise among differing deer related aims (deer conservation, income from deer, recreational hunting and stalking), and with other land management objectives (e.g. other stock grazing, farm and timber crops, impact on native vegetation).

Appropriate optimum population numbers should be determined on a local basis, and for the Region by summation of local targets.

Maximal carrying capacity

Although deer numbers over the last decade have been at a historical high, no signs of declining condition or performance are apparent within the herds. The herds clearly remain well below at levels at which they outstrip the resources available to the herds, not least in view of the accessibility to abundant food on improved farmland in addition to that within their semi-natural range.

However, the carrying capacity of the *semi-natural range* inhabited by deer, is the population that can be supported without deterioration in the condition of the range. The overall <u>maximum</u> sustainable number of deer there alone, will be affected by the total additional grazing pressures from domestic stock on that same range. In theory, in the absence of any domestic stock grazing in the moorland areas, up to around 10,000 red deer might well be sustainable in the 200 km² or so of moorland, bracken and rough pasture available within Exmoor NP, without major detrimental effects on these habitats. However, such extreme theoretical calculations are clearly rather academic, not least because such deer numbers if present would not remain in the moorland areas, and hence would be likely to cause intolerable damage to woodland and farmland. Some further hypothetical calculations of the total population sizes which could be sustained based on tolerance of various different, more realistic, deer density levels in differing habitat categories (moorland, woodland and enclosed farmland) are explored in Appendix A. Similar calculations, based on estimated carrying capacities and landholders tolerances to deer in differing habitat types, might one useful starting point for discussions on initial populations targets within potential LDMG areas.

Compensation schemes and other measures for 'High interest' areas

While schemes involving compensation payments for tolerating deer damage are advocated by some local landholders, such alternatives remain to be carefully researched. If acceptable at all, such schemes would most likely need to be confined to within fairly limited areas, where tolerance of higher than average deer numbers are widely regarded as being sustainable and bring other clear benefits (such as perhaps, in the Quantock Phase 1 conservation areas). Careful consideration must be given to the risk that encouragement of high deer numbers on land entering such agreements, may lead to increasing deer damage sustained on non-agreement land nearby.

Areas where maintenance of relatively high deer numbers are thought most desirable from view of public enjoyment are likely to fall within the more open moorland areas of each region. Re-distribution of the deer population into such moorland areas, where their impact is also likely to be less significant, may also be encouraged through habitat improvements (provision of nearby hiding cover; patches of grassland maintained to provide relatively short swards preferred by deer for grazing etc.); and possibly through adoption of no or only minimal cull polices (for example, within areas such as the North Quantock Common, where deer numbers on the hills are believed to have fallen over recent years, compared to lower lying areas where disturbance is lower and food more abundant). While such open unenclosed areas are of particular importance for the local Hunts, Staghound packs could also be encouraged to assist through emphasis on drawing (selecting) deer from surrounding land, even if hunting through such areas.

E&QDP will investigate via the relevant statutory agencies, whether incentive schemes are a feasible option to maintain elevated deer numbers in some key areas where they bring particular benefits in terms of the stated purposes of the Exmoor NP and Quantock AONB conservation areas.

Appropriate habitat improvements will be considered to encourage deer into such 'high interest' areas. And any necessary local culling encouraged to be taken around the periphery rather than within these sites.

Protection of vulnerable habitats from overgrazing by deer

Semi-natural woodland is one of the few habitats for which there is good evidence that deer alone are capable of preventing regeneration. At present this is thought to be a serious problem in only some parts of the region, but where local red deer densities (or in combination with other deer and domestic stock) exceed the equivalent of 5 red deer per 100 ha, good levels of natural tree regeneration are likely to require temporary fencing and/or reduction of the local population.

The most usual requirement for regulation of impact of deer in woodland regeneration areas is when there is sufficient natural regeneration occurring, but seedlings are constantly browsed by deer. This impact frequently maintains high densities of seedlings below the level of surrounding vegetation; hence not only seedling density but also their growth relative to height of surrounding vegetation should be monitored, to assess impact and the effectiveness of any deer control or other management undertaken in reducing such impact.

E&QDP (with advice from English Nature) will identify those semi-natural woodlands within the region where lack of natural regeneration through grazing presents a conflict with the specific local nature conservation priorities for particular woods (continuation of high levels of grazing may be the most appropriate action in some cases).

Integrated action will be promoted in areas most vulnerable to effects of overgrazing, based on an appropriate local balance between protection of natural regeneration through temporary deer fencing, reduction of domestic stocking / access, and maintenance of lower deer densities.

E&QDP will investigate introduction of standardised vegetation monitoring (undertaken via LDMGs?) of deer impact, and to assess the effectiveness of deer management in achieving habitat aims.

Other Priorities for future research and survey

E&QDP will assess the need and priorities for any further deer related research of particular relevance to the region, and investigate possible sources of funding.

[Previously suggested areas of possible interest may include: i. objective field trials to assess actual damage levels and associated costs arising through deer damage to differing types of farm crops, assessed across a range of local deer densities; ii. continued monitoring of fenced exclosures and control-plots set-up as part of the recently completed research project on grazing impact in woodland (and moorland); iii. evaluation of the 'net value' of deer to differing interest groups and the region as a whole (via economic assessment of market / non-market benefits). However, many other topics of interest may be identified by partners of E&QDP or members of the wider DADMG, and priorities be decided after wider consideration of research needs among them]

Standardised recording of cull data

Only very limited and inconsistent records of deer culled have tended to be kept in the past by most deer managers in the region, yet such records are central to good deer management. A standardised recording system for documenting information on every deer culled should be established. It enables aspects of deer performance to be monitored and rates of increase to be predicted more accurately, providing the basis for informed management decisions.

E&QDP will work (via DADMGs) to implement a standardised system for recording the annual deer cull. This should include information on species, age, sex, weight, health and reproductive status of every deer culled.

Carcass tagging

The ability to obtain complete data on culls taken in the region as a whole and different areas within it, would be greatly assisted by introduction of a national system of carcass tagging. A mandatory requirement for all wild deer carcasses entering the food chain to be tagged would also improve traceability of carcasses, and consequent improvements in health and food hygiene. Carcass tagging could also serve to discourage and impede the sale of poached deer.

Possible tagging systems could take various forms. Thus, in some countries it is a requirement to attach a tamper-proof tag immediately a deer is culled, with each deer manager being issued with a set number of tags on application to the local game or environmental health authority having presented an approved cull plan. The onus in this case is on anyone found in possession of a deer carcass which does not carry an official tag, to be able to explain its origin, making it a useful deterrent and tool in policing poaching. Such a system would, however, be very costly, and bureaucratic, without any of the necessary structures in place at present to decide who would be entitled to apply for tags and how many etc..

A simpler system advocated by the British Deer Society, would be for the point at which tagging of wild deer carcasses becomes mandatory being when it is first sold. One party in any transaction involving deer carcasses must in any case already by law be licensed, and this would thus limit the need for distribution of official tags (i.e. to only all licensed game dealers), but still maintain traceability of carcasses entering the food chain. It would not cover any carcasses kept for home consumption, and hence not be as effective in encompassing statistics of all deer culled, or be as effective a deterrent to poaching. Nevertheless, provided that adequate records link the tamper-proof tag details with the dealer's records of purchase, this system would still bring the same benefits in terms of health and hygiene, and help to suppress poaching, and improved ability to gather regional statistics.

Whatever form of system might be used, it is likely that any voluntary system of carcass tagging would be of only much more limited value, than compulsory ones. In terms of collating good statistics on culls taken at a regional scale via inspection of game dealers records, this is almost impossible to achieve without ability to trace carcasses individually. That is, because many sales occur between differing game dealers, and many deer shot locally tend to be sold direct to game dealers from many other parts of the country, who come to collect deer from this region. Emphasis on carcass tagging should therefore be on support for introduction of a national system. Decision on whether a voluntary scheme of carcass tagging should be introduced for members of LDMGs within Exmoor and the Quantocks region, and perhaps also other parts of the Westcountry, might best be delayed until a reasonably comprehensive network of LDMGs has been established.

E&QDM will support calls for the introduction of a national system of carcass tagging, as a means of improving health and food hygiene aspects of wild venison, suppress poaching, and ability to collate improved statistics on deer culls.

Education

E&QDP will promote opportunities to raise public understanding of deer and the need for their management.

This might include publication of a comprehensive deer policy document / booklet, which aside from policies could provide background on the biology, present status, distribution, interrelationship of deer and impact on habitats within the region, and the need for their management.

In view of the high public interest in deer, consideration could also be given to development / support for creation of a 'Exmoor & Quantocks Deer Centre', which might providing various display materials on deer species, history, biology, methods of control, controversy, etc. (perhaps within NP visitor centre, or as separate [commercial?] centre).

Training

E&QDP will promote high standards among stalkers employed by LDMGs and on their own land, and encourage / assist them to obtain sound deer management training and qualifications.

Exotic deer (Muntjac, sika, Chinese water deer)

Non-indigenous deer may spread at a fast rate, and compete for habitat and resources to the detriment of native fauna. Populations of exotic deer species should not be established in new areas and further spread should be prevented. Muntjac deer are already known to occur in various parts of the Quantocks, and likely to be present also in small numbers within Exmoor. Sika deer are not known to be resident within Exmoor or the Quantock Hills at present, but do occur in parts of East- and West-Devon. The spread of sika into Exmoor and the Quantocks is of concern as this species may hybridise with the indigenous red deer.

E&QDP will encourage LDMGs / DADMGs to adopt appropriate policies to prevent the establishment or further spread of muntjac and sika deer within the region.

4.3 Summary of Draft Policies for consideration:

E&QDP is committed to ensuring the long-term survival of healthy and well-distributed populations of wild deer on Exmoor and the Quantock Hills in balance with their environment.

Sustainable Management

E&QDP will work to promote a co-ordinated approach to the sustainable management of deer among landholders, and supports the formation of a network of local deer management groups (LDMGs) as the underlying basis for that approach.

Optimal populations should be defined by landowners at a local level, with advice from conservation bodies and other interests. Each LDMG should produce a management plan to integrate any control of numbers with management of the habitat.

E&QDP will consider ways of providing direct assistance with establishing LDMGs and production of management plans.

Minimum Population size

E&QDP is committed to retaining at least a minimum of(1250?) red deer within Exmoor and ...(350/250?) within the Quantock Hills. Should consecutive annual censuses or other evidence indicate that numbers have fallen to within (e.g.10%) of those minima, action will be taken to effect reversal of such declines.

Such action may include introduction of minimal cull policies on any land under the direct jurisdiction of E&QDP partners, and promotion of adoption of such policies among other major landholders. Consideration may also be given to a scheme of incentive payments to landholders entering long-term management agreements to conserve deer within a define parts of the region (see compensation schemes below).

'Optimal' overall population size

Appropriate optimum population numbers should be determined on a local basis, and for the Region by summation of local targets.

Compensation schemes and other measures for 'High interest' areas

E&QDP will investigate via the relevant statutory agencies, whether incentive schemes are a feasible option to maintain elevated deer numbers in some key areas where they bring particular benefits in terms of the stated purposes of the Exmoor NP and Quantock AONB conservation areas.

Appropriate habitat improvements will be considered to encourage deer into such 'high interest' areas. And any necessary local culling encouraged to be taken around the periphery rather than within these sites.

Protection of vulnerable habitats from overgrazing by deer

E&QDP (with advice from English Nature) will identify those semi-natural woodlands within the region where lack of natural regeneration through grazing presents a conflict with the specific local nature conservation priorities for particular woods (continuation of high levels of grazing may be the most appropriate action in some cases).

Integrated action will be promoted in areas most vulnerable to effects of overgrazing, based on an appropriate local balance between protection of natural regeneration through temporary deer fencing, reduction of domestic stocking / access, and maintenance of lower deer densities.

E&QDP will investigate introduction of standardised vegetation monitoring (undertaken via LDMGs?) of deer impact, and to assess the effectiveness of deer management in achieving habitat aims.

Other Priorities for future research and survey

E&QDP will assess the need and priorities for any further deer related research of particular relevance to the region, and investigate possible sources of funding.

Standardised recording of cull data

E&QDP will work (via DADMGs) to implement a standardised system for recording the annual deer cull. This should include information on species, age, sex, weight, health and reproductive status of every deer culled.

Carcass tagging

E&QDM will support calls for the introduction of a national system of carcass tagging, as a means of improving health and food hygiene aspects of wild venison, suppress poaching, and ability to collate improved statistics on deer culls.

Education

E&QDP will promote opportunities to raise public understanding of deer and the need for their management.

Training

E&QDP will promote high standards among stalkers employed by LDMGs and on their own land, and encourage / assist them to obtain sound deer management training and qualifications.

Exotic deer (Muntjac, sika, Chinese water deer)

E&QDP will encourage LDMGs / DADMGs to adopt appropriate policies to prevent the establishment or further spread of muntiac and sika deer within the region.

Appendix A:

Maximum population size and habitat carrying capacities

Red deer numbers in the Westcountry region have increased significantly over the last three decades, with estimates of numbers within Exmoor during the 1960's of only between 600–700 head (Lloyd, 1970), while regular visual minimum counts in excess of 2200 have been recorded during this decade. Despite the significantly increased red deer population size, and increases also noted among fallow and roe deer over the same period, results of recent research show that the populations remain in very good condition, without signs of being limited by resources. Populations subject to food or other resource limitation, tend to exhibit clear changes in biological performance indicators, such as increased mortality among juveniles, increased ages at first conception (i.e. low pregnancies rates among yearlings), and fall off in adult fecundity. By contrast the Westcountry red deer herd studied show very high reproductive performance and body weights comparable to some of the highest performing populations in the UK, and thus would seem to remain well below their biological carrying capacity.

Present population levels on Exmoor and the Quantocks based on visual minimum censuses, in fact average out at only between 3 to 5 deer per $\rm km^2$; densities in the majority of the Deer Commission of Scotland's 50 counting blocks of comparable size lie between 6 – 15 per $\rm km^2$, and in some cases over 25 per $\rm km^2$ (with an average in excess of 10 per $\rm km^2$; RDC, annual reports). Wide variation in deer densities occur particularly across the Exmoor NP, with densities of 5-10 per $\rm km^2$ in most of the eastern half of the park (and up to 20 per $\rm km^2$ in some areas); while much of the westerns half of the park by contrast carries only between 1 – 3 red deer per $\rm km^2$ at present, with hence much potential for sustaining higher numbers in at least some of these areas.

The carrying capacity of the semi-natural range inhabited by deer, is the population that can be supported without deterioration in the condition of the range. This overall maximum sustainable number of deer there, however, will be affected by the total grazing pressures of deer and domestic stock combined on the semi-natural moorland and woodland ranges, as well as the accessibility to deer of the additional enclosed farmland areas. Thus, in theory, in the absence of any domestic stock being grazed in the moorland areas (including the heather and grass moors, as well as rough grazing and bracken areas), over 10.000 deer might well be sustainable in the 200 km² of such habitat alone on Exmoor, and around 700 head on the Quantock Hills (based on stocking by deer only to 0.15/LU per hectare - the Tier 1 winter livestock unit limit for heather moorland). Such extreme theoretical calculations are clearly rather academic, not least because such deer numbers would not remain in the moorland areas, and hence cause intolerable damage to woodland and farmland unless fenced entirely against deer. Nevertheless, Table 1 summarise also some hypothetical calculations of total population sizes which would result within Exmoor and the Quantocks as a whole, based on extrapolation of a range of rather more realistic deer density levels which are currently tolerated in these differing major habitat categories in some parts of the region.

For example, based on recent research on Exmoor and elsewhere, reasonable levels of regeneration in woodland are likely to be possible at densities below 5 red deer per km², while red deer densities of 10 per km² are likely to be tolerable alongside domestic stock on most moorland sites. At these averaged levels of deer density the woodland plus moorland areas alone (including heather, rough grass and bracken moor) within Exmoor would sustain 2436 deer (that is, in fact the total known levels estimated from visual census for that region as a whole), while an additional tolerance of on average 5 deer per 100 ha on enclosed farmland (= just 0.02 deer per acre) would take the total to 4339 (Table 1). On the other hand similar calculations show that in order to sustain the current Quantock herd of around 500 head, within the comparatively small total woodland plus moorland areas there, densities would need to be twice as high as those above for Exmoor within these habitats; illustrating the greater reliance there on farmland, if present population levels are to be sustained. More conservative average density levels of just 2/km² on enclosed farmland areas and conifer woods, 4/km² in broad-leaved and mixed woodland, and 5/km² on moorland, would again still sustain over 2000 deer within Exmoor, but only 250 with the Quantock Hills.