

PRELIMINARY ANALYSIS & CONSULTATION REPORT FOR FRESHWATER AND TERRESTRIAL HABITAT PROPOSALS

COLLATION OF RESPONSES RECEIVED

This document contains the unedited responses received by 22 May 2006 on the 'Consultation Report on the proposals for the BAP Priority Habitat Series'.

Any queries should be addressed to Ed Mountford, JNCC Habitats Advice Team
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2e. Mountain heaths

General

- Is the justification convincing? (see 'criteria' below)
See below
- Has a UK perspective been taken?
Yes, but the threats are probably more acute coupled with a less extensive habitats extent in England and Wales compared with Scotland, especially the Highlands. This means the work of monitoring is much larger in the Highlands with threats less acute, though still significant.
- Have appropriate groups/individuals been involved in developing the proposal?
?

Definition

- Is the description provided clear enough and the full scope of the habitat type clear?
What is meant is clear enough but the habitat does contain diverse elements so that it cannot be treated meaningfully as a single entity for the purposes of an action plan, for mapping or monitoring.
- Is the priority habitat mappable with measurable quantitative or qualitative attributes to estimate the extent of the resource and for monitoring purposes? Could a definition be devised to compile an inventory?
This is a complex encompassing diverse habitats such as prostrate *Calluna* heath and montane willow scrub. They respond in different ways to impacts. For monitoring purposes different fractions will need to be set different attributes. No single set of attributes or definition would be adequate. Mapping of the whole habitat would not be especially meaningful. Most of the constituent habitats could be mapped according to the NVC at a scale of 1:10,000 in the usual way. This would not work for montane willow scrub or U15.
- Is the description clearly linked to the justification against the criteria, i.e. related to its importance for nature conservation? Bearing in mind that a future action plan could be wider in scope than a priority habitat, to what extent does the definition include 'non-priority' elements and would it be feasible to exclude them from the definition?
Some of the constituent habitats, at least in the Highlands, are under less threat than other fractions of the habitat. This would include some of the prostrate *Calluna* heaths. Restoration measures implemented for some part of the habitat e.g. montane willow scrub, would have no impact on other parts and there would be little point in monitoring them.
- Is it clear what sets the habitat apart from other habitats? Does it overlap with other habitats and, if so, is it clear why? There is overlap with **Upland natural rock and scree habitats** with both priority habitats having the NVC scree community U18 listed. In my view U18 would be better listed for **Upland natural rock and scree habitats** rather than **Mountain heaths**.
- Is it at a consistent hierarchical level compared with other priority habitats?
Compared with other priority habitats this is diverse with five major elements differing phytosociologically (discounting U18).
- Does it fit within a single Broad Habitat and, if not, is there a sound reason?
Mostly. I am not sure where montane willow scrub fits. I can only presume it goes in Montane habitats since it is not woodland. U18 belongs to Inland rock but should be confined to **Upland natural rock and scree habitats**. Dwarf-shrub heath apparently excludes montane heaths.
- Is the proposed name clear, unambiguous and precise?

No. Not just heaths but grasslands, snow-bed, scrub and dwarf-herb communities are also included.

Distribution and extent

- Is there reasonable information about the distribution and extent? Has this been updated since the previous review (if applicable)?
In Scotland good information about the range of habitats exists only for designated sites.
- Are there other sources of data that might usefully inform on the distribution and extent? Some sources such as LCS88 area bit too broad and probably not accurate enough to be much use.
- To what extent does the habitat occur within designated sites?
The full range of habitats occurs within designated sites.

Qualifying criteria

- International obligations:
Is the correspondence with international habitat types clear?
The relevant Annex I habitats are listed.
Is the degree of importance clear, e.g. how extensive, context, etc.
Figures for the extent are given. In Scotland good data on extent only exists for statutory sites. The extent given is partly made up of an estimate based on topography. Vegetation maps are available in Scotland for most statutory sites but no maps are available outside SSSI. Data on the different types of montane heath is only available for the SSSI.
- Risk: Are any data provided on this? Do they include data on recent trends? Which elements of risk apply: rarity, decline or threat?
Resurvey of plots with quantitative data originally surveyed over 40 years ago may provided data on trends for some more southerly sites. No data exist generally on recent trends. There has been some recent research on processes such as grazing and nitrogen deposition that can result in the loss of characteristic species such as *Racomitrium* moss. All three elements of risk apply. Rarity applies to certain kinds of constituent habitat especially to montane willow scrub and late-lie snow-beds. Historical declines in some habitats such as montane willow scrub is presumed to have taken place. Quality may have declined in other habitats such as loss of characteristic *Racomitrium* moss. There is a continuing threat to mossy montane heaths from grazing and nitrogen deposition.
- Key species: How comprehensively are these covered? What categories of conservation concern have been considered (BAP, RDB etc)? How thoroughly have species been surveyed in the habitat? Are all relevant species groups included? Is the relative importance of the habitat made clear compared to other semi-natural (priority) habitats? The number of BAP species is given, but there are no further details about them. Many RDB species are found in the habitat but no details are given. Good information is available on vascular plants found in the habitat. Less information is known on other groups or is not as easy to find.

Functional importance: Is functional importance an issue of concern as a secondary qualifying criterion? Does the habitat complement other semi-natural (priority) habitats, as a resource for conserving wider-ranging species?

2f. Upland flushes and fens

General

- Is the justification convincing? (see 'criteria' below) Yes.
- Has a UK perspective been taken? Yes.
- Have appropriate groups/individuals been involved in developing the proposal?

Definition

- Is the description provided clear enough and the full scope of the habitat type clear?
No. Perhaps the name should be changed to "Upland flushes, fens and swamps".

The inclusion of bog-pool communities is anomalous. These are usually associated with ombrogenous mires and are therefore covered by the Lowland raised bog and Blanket bog Priority habitats. They should be removed along with the Annex I habitat “Depressions on peat substrates of the *Rhynchosporion* pp” otherwise there will be overlap with these other Priority habitats.

Perhaps it is worth mentioning that certain NVC types are excluded not because they do not occur in the uplands but because they are covered by other Priority habitats notably “Reedbeds”. This covers S4 which can occur in the uplands.

- Is the priority habitat mappable with measurable quantitative or qualitative attributes to estimate the extent of the resource and for monitoring purposes? The habitat is mappable but stands are often small and they are developed over such large tracts of ground that comprehensive mapping of stands is practically impossible. Samples of the habitat could be surveyed and then repeated for monitoring purposes.
Could a definition be devised to compile an inventory?
Yes, this is possible but compiling an inventory would be a big job.
- Is the description clearly linked to the justification against the criteria, i.e. related to its importance for nature conservation?
The definition includes *Molinia caerulea*-*Potentilla erecta* mires (M25). These are often extensive, covering large tracts of ground. They have probably been much planted up for forestry but are still extensive and not generally threatened as a type. Some sub-types are important floristically but much of the community is species-poor.

Bearing in mind that a future action plan could be wider in scope than a priority habitat, to what extent does the definition include ‘non-priority’ elements and would it be feasible to exclude them from the definition? The *Molinia*-*Potentilla* mire mentioned above could be regarded as a “non-priority” element because it is an extensive community well-represented in most areas of the uplands. *Molinia*-dominated stands could be excluded from the definition.

- Is it clear what sets the habitat apart from other habitats?
This appears to be flushing or water-logging in a topogenous mire, where the mire is dependant on nutrients in the ground water and therefore excludes ombrogenous bogs.
- Does it overlap with other habitats and, if so, is it clear why? Is it at a consistent hierarchical level compared with other priority habitats? Does it fit within a single Broad Habitat and, if not, is there a sound reason?
There is some potential for confusion. In the lowlands the Broad habitat “Fen, marsh and swamp” is covered by three Priority habitats (“Purple moor grass and rush pastures”, “Fens” and “Reedbeds”). In this upland Priority habitat the first two are included but Reedbeds are not covered. Reedbeds are local in the uplands and are presumably covered by the existing “Reedbeds” Priority habitat in theory even if the focus is primarily on the lowlands. Some clarification of the scope of these other Priority habitats in the account would be useful in removing possible confusion.
- Is the proposed name clear, unambiguous and precise?
A wide range of wetland habitats are included. “Upland flushes, fens and swamps” might help to clarify the scope of the habitat. Not sure whether it is worth adding “valley mire” to this.

Distribution and extent

- Is there reasonable information about the distribution and extent? Has this been updated since the previous review (if applicable)?
There is good information for upland SSSI in Scotland but not for the wider countryside.

- Are there other sources of data that might usefully inform on the distribution and extent? NVC atlas data is available on distribution. Extent in the wider countryside in Scotland is unknown.
- To what extent does the habitat occur within designated sites? This habitat is widely developed within upland SSSI in Scotland.

Qualifying criteria

- International obligations: Is the correspondence with international habitat types clear? Yes.
- Is the degree of importance clear, e.g. how extensive, context, etc. The importance of the habitats is clear. There is no indication of extent.
- Risk: Are any data provided on this? No. Although some element of risk apparently exists no quantitative data is available.
Do they include data on recent trends? No data on recent trends are available.
Which elements of risk apply: rarity, decline or threat? All three apply.
- Key species: How comprehensively are these covered?
What categories of conservation concern have been considered (BAP, RDB etc)? BAP Priority and Habitats Directive Annex II species have been considered.
How thoroughly have species been surveyed in the habitat? Fairly thoroughly, a lot of data is available but much of it remains to be collated.
Are all relevant species groups included? The major higher groups are included but important lower groups such as Diptera are not mentioned.
Is the relative importance of the habitat made clear compared to other semi-natural (priority) habitats? This is not dealt with.
- Functional importance: Is functional importance an issue of concern as a secondary qualifying criterion? The habitat may be important on sites qualifying for bird species (see below).
Does the habitat complement other semi-natural (priority) habitats, as a resource for conserving wider-ranging species? Yes, flushes are well known as providing invertebrate food for grouse and wader chicks at times of year when it is not generally available from other habitats.

2g. Upland natural rock and scree habitats

General

- Is the justification convincing? (see 'criteria' below)
Yes.
- Has a UK perspective been taken?
Yes.
- Have appropriate groups/individuals been involved in developing the proposal?

Definition

- Is the description provided clear enough and the full scope of the habitat type clear?
Yes.
- Is the priority habitat mappable with measurable quantitative or qualitative attributes to estimate the extent of the resource and for monitoring purposes? Rock habitats can be mapped only with difficulty. Maintaining the quality of the habitat is more important than maintaining the extent although there can be threats to the extent such as quarrying. Extent is difficult to determine exactly and is currently unknown in the wider countryside.

Could a definition be devised to compile an inventory? There may be problems with the precise definition of individual kinds of rock habitats.

- Is the description clearly linked to the justification against the criteria, i.e. related to its importance for nature conservation? Yes.

Bearing in mind that a future action plan could be wider in scope than a priority habitat, to what extent does the definition include 'non-priority' elements and would it be feasible to exclude them from the definition? Within the broad definition some kinds of rock and some localities are more important than others, e.g. high altitude outcrops of base-rich rock.

There are gradations between different kinds of rock and an aim must be to conserve the range of habitats. Excluding any sub-types such as low altitude acid outcrops on the basis that they are not as valuable would be impossible.

Is it clear what sets the habitat apart from other habitats?

Does it overlap with other habitats and, if so, is it clear why? Yes. U18 has also been included within "Mountain heaths". U18 should be deleted from "Mountain heaths". This is a vegetation type of scree which more properly belongs within this habitat.

Is it at a consistent hierarchical level compared with other priority habitats?

Does it fit within a single Broad Habitat and, if not, is there a sound reason? Yes.

- Is the proposed name clear, unambiguous and precise? No. Rock includes scree. Perhaps "Rock outcrop and scree" would be better.

Distribution and extent

- Is there reasonable information about the distribution and extent? Has this been updated since the previous review (if applicable)? There is data for SSSI but it cannot be considered accurate. There is no data for the wider countryside.
- Are there other sources of data that might usefully inform on the distribution and extent? No.
- To what extent does the habitat occur within designated sites? Extensively.

Qualifying criteria

- International obligations: Is the correspondence with international habitat types clear? Yes.
Is the degree of importance clear, e.g. how extensive, context, etc.
- Risk: Are any data provided on this? No.
Do they include data on recent trends? No data on trends is available.
Which elements of risk apply: rarity, decline or threat? All three apply.
- Key species: How comprehensively are these covered? What categories of conservation concern have been considered (BAP, RDB etc)?
Mostly only BAP priority species are mentioned.
How thoroughly have species been surveyed in the habitat? Good botanical data is available.
Are all relevant species groups included? Is the relative importance of the habitat made clear compared to other semi-natural (priority) habitats?
- Functional importance: Is functional importance an issue of concern as a secondary qualifying criterion? Does the habitat complement other semi-natural (priority) habitats, as a resource for conserving wider-ranging species?

2h. Rock outcrops, mine spoil and river shingle rich in heavy metals

General

- Is the justification convincing? (see 'criteria' below) Yes.
- Has a UK perspective been taken? Yes, but there is a slight bias to man-made habitat in England.
- Have appropriate groups/individuals been involved in developing the proposal?

Definition

- Is the description provided clear enough and the full scope of the habitat type clear? This is a difficult habitat to describe floristically because it is not covered fully by the NVC. A few more key references to the literature would be useful. Available reviews should be listed. Continental literature should not be ignored as many stands in Scotland may be similar, or related, to those in Scandinavia.

The term “Near-natural substrates” is odd. “Near-natural” is usually applied to plant communities. I am not sure what is meant by its use in this case. It suggests “partly man-made” but in what way?

Is the priority habitat mappable with measurable quantitative or qualitative attributes to estimate the extent of the resource and for monitoring purposes? As a rock habitat there are difficulties in mapping the extent, especially as it can be patchy, often occurs in mosaic with other habitats and is often of small extent.

Could a definition be devised to compile an inventory? Yes.

- Is the description clearly linked to the justification against the criteria, i.e. related to its importance for nature conservation? Yes.

Bearing in mind that a future action plan could be wider in scope than a priority habitat, to what extent does the definition include ‘non-priority’ elements and would it be feasible to exclude them from the definition? All forms of the habitat as defined are rare and under threat.

- Is it clear what sets the habitat apart from other habitats?

Some examples of metalliferous rock in Wales have only mosses and none of the flowering plants that are associated with the habitat. Perhaps some clarification as to whether these examples are included is required.

Does it overlap with other habitats and, if so, is it clear why? No.

Is it at a consistent hierarchical level compared with other priority habitats?

Does it fit within a single Broad Habitat and, if not, is there a sound reason? Fits within Inland rock.

- Is the proposed name clear, unambiguous and precise? Yes.

Distribution and extent

- Is there reasonable information about the distribution and extent? In Scotland the data is reasonable, if a bit patchy. Distribution and extent data is only available for designated sites in Scotland, but little of the habitat apparently occurs outside SSSI.

Has this been updated since the previous review (if applicable)? Are there other sources of data that might usefully inform on the distribution and extent? No.

- To what extent does the habitat occur within designated sites? In Scotland there is probably little of this habitat outside designated sites.

Qualifying criteria

- International obligations: Is the correspondence with international habitat types clear? Yes.

Is the degree of importance clear, e.g. how extensive, context, etc. The extent is vague but clearly this is a habitat of small extent.

- Risk: Are any data provided on this? No.

Do they include data on recent trends? Some information on loss is provided.

Which elements of risk apply: rarity, decline or threat? All three apply.

- Key species: How comprehensively are these covered? They are not comprehensively covered though good examples are given.

What categories of conservation concern have been considered (BAP, RDB etc)? BAP Priority and Annex II of the Habitats Directive are covered.

How thoroughly have species been surveyed in the habitat? This habitat has received a lot of attention from botanists so plants are thoroughly known. Knowledge of invertebrates is patchy.

Are all relevant species groups included?

Is the relative importance of the habitat made clear compared to other semi-natural (priority) habitats?

- Functional importance: Is functional importance an issue of concern as a secondary qualifying criterion? Does the habitat complement other semi-natural (priority) habitats, as a resource for conserving wider-ranging species?

Margaret Palmer

Comments on proposed new freshwater priority habitats

Active shingle rivers

1. I support an increase in the present range of priority river habitats beyond the single category *Chalk rivers*. However, I feel that the definition of 'active shingle rivers' needs to be clearer. How extensive must 'significant reaches' of gravel or pebbles bed be, and how 'dynamic' should the river be, for it to meet the definition?
2. The *Active shingle rivers* habitat is not described in terms of the Water Framework Directive typology or the conservation agencies' river classification. I presume that *Active shingle rivers* would occur mainly in the intermediate Groups B and C of the botanical classification, rather than in Group A (lowland rivers with a high proportion of soft sediments in their beds) or Group D (upland, torrential rivers, often on bedrock and boulders). If no coherent links can be made with other typologies I think this should be acknowledged, but if *Active shingle rivers* can be clearly defined in other terms this cross-cutting may not matter.
3. Should there be some suggestion as to how an *Active shingle rivers* HAP could be integrated with the implementation of the Water Framework Directive?
4. Is there any estimate of the extent of this habitat? Presumably it covers a large number of rivers. Is there a case for limiting the priority habitat to rivers of high ecological quality or conservation value, as in the proposal for ponds?
5. It may be difficult to decide how much of the total length of a river belongs to this habitat. The description says that often the lower reaches, which may be heavily modified, would not meet the definition. River restoration may recreate dynamic conditions and turn some of these reaches back into *Active shingle rivers*, so isn't there an argument for including them if they have this potential? The upper end of the system may be on bedrock or boulders and therefore not meet the definition, but what happens here could have an impact on the character of downstream reaches. Even in the middle sections of a river, is there a danger of ending up with a 'dotted line' because some stretches meet the definition and some don't?
6. It may be useful to include some consideration of the lateral limits of *Active shingle rivers*, especially as the habitat is, by definition, mobile. Would the habitat boundary be at the change in bank slope or would it extend into the flood plain?
7. Overlaps with other priority/proposed priority habitats
Chalk rivers can have extensive beds of gravel, but presumably they would be excluded from the *Active shingle rivers* category. Overlaps could occur with *Headwaters* and *Rock outcrops, mine spoil and river shingle rich in heavy metals*. Where these habitats occur on *Active shingle rivers* I think they should be regarded as integral parts of the river system, rather than being dealt with separately.

Current BAP invertebrate species associated with Active Shingle Rivers:

River shingle beetles (grouped plan):

Hydrochus nitidicollis (water beetle)

Perileptus areolatus (ground beetle)

Bembidion testaceum (ground beetle)

Lionychus quadrillum (ground beetle)

Tinobius newberyi (rove beetle)

Meotica anglica (rove beetle)

Another beetle (in lower reaches):

Bidessus minutissimus (diving beetle)

Flies:

Clorismia rustica (stiletto fly)

Rhabdomastix laeta (cranefly)

Spiriverpa lunulata (stiletto fly)

Stonefly

Brachyptera putata

Mollusc

Margaritifera margaritifera (freshwater pearl mussel)

Crustacea

Austropotamobius pallipes (white-clawed crayfish) (possibly, depending on the definition of Active Shingle Rivers)

Headwaters

1. I support the proposal that *Headwaters* should become a priority habitat. The case is well made that this habitat is seriously threatened and important for biodiversity. Headwaters also influence downstream sections of rivers, so are functionally important.
2. The ease of defining *Headwaters* through the pragmatic use of OS maps is an advantage, but the habitat is very extensive and cuts across existing river classifications and the Water Framework Directive typology. I suggest that priorities during implementation should be decided in the light of the primary threats (e.g. acidification and pollution from sheep dip in the uplands; drainage and eutrophication in the lowlands).
3. How would a *Headwaters* HAP be integrated with the implementation of the Water Framework Directive?
4. Overlaps with other priority/proposed priority habitats
I think the headwaters of other priority/proposed priority river habitats (*Chalk rivers* and *Active shingle rivers*) should be regarded as integral parts of the larger river systems, rather than being included in the general *Headwaters* habitat. Taking a 'whole river' approach would be an advantage in the implementation stage.

The current BAP invertebrates associated with Headwaters are:

Agabus brunneus (diving beetle)

Coenagrion mercuriale (Southern Damselfly)

Lipsothrix errans and Lipsothrix nigristigma (craneflies).

Oligotrophic lakes

1. It has sometimes been difficult to decide which lakes in the trophic continuum fit the existing BAP habitats *Mesotrophic lakes* and *Eutrophic standing waters*. The addition of *Oligotrophic lakes* (including dystrophic standing waters) to the priority habitat list would make the nuances of classification less crucial, as all lakes would qualify for

one or other of the habitat categories. But is there now a case for having a single category (*Lakes*) instead of three separate habitat types?

2. Should the *Oligotrophic lakes* habitat be defined in terms of water chemistry? (The *Mesotrophic lakes* HAP says “Typically, mesotrophic lakes have nutrient levels of 0.3-0.65 mg N L⁻¹ and 0.01-0.03 mg P L⁻¹”. The *Eutrophic standing waters* HAP stipulates at least 0.035 mg L⁻¹ total phosphorus and 0.5 mg L⁻¹ total inorganic nitrogen.)
3. How does the habitat definition correspond to the Water Framework Directive typology and the current vegetation classifications of UK lakes (Duigan, C., Kovach, W. & Palmer, M. (2006) *Vegetation communities of British lakes: a revised classification*. JNCC; Wolfe-Murphy, S. A., Lawrie, E. A., Smith, S. J. & Gibson, C. E. (1992) *The Northern Ireland Lake Survey: Part 3. Lake Classification Based on Aquatic Macrophytes*. DoENI & Queen’s University Belfast)? Should some ideas be expressed on how an *Oligotrophic lakes* HAP could be integrated with the implementation of the Water Framework Directive?
4. The lower size limit of 1 ha is at odds with the proposed upper size limit for ponds (2 ha). There is no lower size limit specified for *Mesotrophic lakes* or *Eutrophic standing waters*.
5. Marl lakes, which may be oligotrophic, mesotrophic or eutrophic, are important for groups such as stoneworts but seem to have been ignored in the definitions of these trophic types. Perhaps mention of marl lakes should be made within the descriptions of all three types of lake.

6. Overlaps with other priority/proposed priority habitats

If the lower size limit for *Oligotrophic lakes* is set at 2 ha there would be no overlap with *Ponds*. There would be overlap between dystrophic waters larger than this and *Blanket bog* and *Lowland raised bog*. I suggest that bog pool systems should be regarded as integral to bog habitats rather than being treated as lakes in their own right. Oligotrophic turloughs would be best regarded as *Aquifer fed naturally fluctuating water bodies*.

Ponds of high ecological quality/conservation value

1. The proposal form and supplementary notes make a convincing case for the inclusion of ponds as a priority habitat. The National Pond Monitoring Network and the national inventory of ponds provide a ready-made framework for the implementation of a future HAP.
2. I think it is a good idea to confine the priority habitat to *Ponds of high ecological quality/conservation value* because ponds are so numerous and conservation effort needs to be targeted at the highest quality sites. I would support a ponds HAP with a more comprehensive brief, which could be implemented largely through LBAPs. This would give scope for the improvement of ponds with high ecological potential and for pond creation/recreation.
3. I think the list of ‘species of high conservation concern’ used to identify *Ponds of high ecological quality/conservation value* should include Nationally Rare species, as

defined in the new Vascular Plant Red List (i.e. species that occur in 15 or fewer 10 x 10 km squares in Britain, whether or not they are included in the Red List). This would help to cancel out discrepancies between the Red Lists of different taxonomic groups, some of which have been drawn up using the revised IUCN criteria and others have not.

4. I prefer the title *Ponds of high nature conservation value*, as this seems best to express the kind of habitat described in the proposal form.

5. Overlaps with other priority/proposed priority habitats

If the *Oligotrophic lakes* habitat is limited to waters over 2 ha, there would be no overlap with ponds (defined as water bodies up to 2 ha). The *Mesotrophic lakes* and *Eutrophic standing waters* HAPs do not specify a minimum size, but the latter excludes 'small pools and field ponds', so a clear distinction could be drawn at 2 ha. However, I feel that the following categories of small water body should not come within the definition of the *Ponds* priority habitat because their conservation requirements are very specific and/or closely bound up with the management of the priority habitat of which they form a part:

- fluctuating meres and turloughs up to 2 ha, which are *Aquifer fed naturally fluctuating water bodies* (other types of temporary ponds should remain within the *Ponds* priority habitat)
- brackish coastal pools that come within the definition of *Saline lagoons*
- oxbows on *Active shingle rivers*, if this type of river becomes a priority habitat
- bog pools that are integral elements of *Blanket bog* and *Lowland raised bog*.

Other river types

I find it difficult to suggest river types other than *Chalk rivers*, *Headwaters* and *Active shingle rivers* because I find the scope of the last category hard to grasp. Implementation of the Water Framework Directive should lead to a general improvement of rivers, as the target is for all of them to attain good ecological quality (or no deterioration). But perhaps we should be aiming at attaining high ecological status for all the rivers covered by BAP priority habitats. This could be an argument for extending the range of river habitats.

Canals

I think canals could only be considered if they were treated in a similar way to ponds, with the priority habitat being *Canals of high nature conservation value*. As many of these high quality canals are SSSIs, creating this additional priority habitat may not produce much benefit.

Ancient and/or species-rich hedgerows

I've looked at the proposed changes to Ancient and/or species-rich hedgerows. The arguments look sound to me, and the new definition would avoid a lot of the problems encountered in trying to define the narrower habitat type. Broadening the habitat would also be in the spirit of the Habitats Directive.

Post-industrial sites

I'll try to get a Buglife opinion on Post-industrial sites.

Dr Carrie A. Rimes, Countryside Council for Wales, on behalf of the Lowland Grassland LCN

P.14 Rock outcrops, mine spoil and river shingle rich in heavy metals. We all agree that Calaminarian grasslands should form a distinct Priority Habitat. We are not convinced that the habitat would receive adequate attention if split between Post-industrial habitats, Upland natural rock and scree and Active shingle rivers. We are particularly concerned about inclusion within the Post-industrial habitats, as we feel that management necessary for maintaining Calaminarian grasslands to be quite distinct. The division of Calaminarian grasslands within the 3 other priority habitats would create major reporting difficulties.

P.17-18 Roadside verges. We recognise the value of road verges as part of the lowland grassland habitat resource, and also recognise the urgent need for improving road verge management. We have an open mind on the best way forward for road verges in terms of HAP, but agree that, at least, road verges should be given recognition within the definition of relevant priority habitats.

P.23 Lowland heathland. We agree that using the Phase I definition to clarify the boundary between lowland heathland and lowland grassland makes sense - i.e. <25% dwarf shrub cover = grassland; more is heathland.

P.23 Lowland calcareous grassland. We agree with the proposed change to the definition to include CG10.

Dr A J Mitchell-Jones, Senior Vertebrate Ecologist, English Nature

I'd like to respond to your consultation report from my position as chairman of the dormouse BAP group and the greater horseshoe bat BAP group.

These groups strongly support the proposal to extend the definition of priority hedgerows to include a much wider range of this habitat feature. It is clear from published and emerging research (e.g. current lesser horseshoe bat research at Bristol University) that hedgerows act as guidance, orientation and shelter features in the landscape for a wide range of species. In these respects, it is their structure (height and width), rather than their species composition, that is critical. Semi-natural hedgerows could thus be seen as a subset of linear landscape elements (others are fences, tree-lines and ditches) with a particular importance for mobile species. The current focus on ancient and/or species rich-hedgerows takes little account of this important connectivity function and in fact excludes the majority of hedgerows based on a narrow consideration of their value solely to the species that constitute them. We would argue that their function as connecting elements in many landscapes is at least as important as their function as a habitat for relict woodland/grassland species.

Although data are hard to come by, there is strong support for the view that the removal of hedgerows, or their replacement by 'simpler' linear elements such as fences, has been a significant factor in the decline of a range of species including birds, mammals and invertebrates. The extension of the remit of the hedgerow HAP could provide a strong impetus to restoring these connecting elements in appropriate landscapes.

Dr Liz Howe and others, Countryside Council for Wales

I have got some responses from my colleagues to the consultation which I will pass on now along with my own views! I need to talk with our woodland and farmland ecologists- not around at the moment, so will send any further comments on when I get back from leave on 25th/26th April if that is ok?

4.1 Active river shingles- support from freshwater, invert and bird ecologists. agree that apparent overlap with metalliferous rock and headwaters could be avoided through use of definitions.

4.2 Headwaters- support from invert, bird and mammal specialists- v.imp for water voles- again agree that overlap could be avoided by definition. Suggestion from freshwater ecologist that this could be included within a other rivers plan- see 4.5.1 as it is currently defined only by OS line rather than ecologically- also, could it be included within the upland fen and flush plan- 5.2- the terrestrial habitat that usually is the source of the river??. Note that salmon usually spawn lower down than headwaters

4.3 Oligotrophic lakes- support from invert and ornithologist and freshwater ecologist

4.4 Ponds- support from invert, freshwater and herp specialists- especially inclusion of temporary ponds within the definition. Agree that priority habitat could lie within a wider pond HAP, and that PHEC is not a very good name- although POHNCQ is even worse!

4.5.1 other rivers- personally I think there is a case for looking at this closely chalk and active rivers are a very small section of the resource when contrasted with the other habitats. The role of all rivers in mammal (bat and otter), fish, bird- kingfisher, dipper etc, invert and plant interests should not be overlooked as well. The freshwater ecologist is also keen, but we are aware that the LCN isn't. Again- it could be used to tie in headwaters.

4.5.2 Canals- again they have their role in plant, mammal and invert conservation in particular (cf the Montgomery Canal SAC), but I think that such an artificial habitat shouldn't be a priority- it could lie within a wider 'other rivers/canals' HAP or with post industrial??

5.1 Mountain heaths- upland specialists support this one strongly- as does heathland ecologist. Wouldn't mind if "& scrub were added" to name.

5.2 Upland flushes and fens: some comments from Peter Jones

"The proposal has come about as a consequence of the change in scope of the Fens priority habitat agreed in 2001 as part of the review of gaps in the BAP priority habitat series"
Peter Jones noted that -This isn't my recollection. We always took the fens HAP (i.e. since its publication) to mean lowland fens only, and upland fens were recognised as a gap more or less from the word go.

Peter would like to change the text of the 2nd bullet to:

· Upland flushes and fens in the UK are clearly of international importance for nature conservation. They include a substantial proportion of the UK resource (all or most of our representation) of four (ive) habitats listed on Annex I of the Habitats Directive, and serve as the main locus for a fifth Annex I habitat (alpine pioneer formations). Two of these (Alpine pioneer formations and Petrifying springs) are priority types i.e. especially threatened in Europe.

-Although the term 'fens' as used by the conservation agencies usually includes flushes (and springs), the suggested title 'Upland flushes and fens' is intended to highlight the particular importance of flushes/springs in the uplands. Comments on this particular point are invited" Peter Jones noted- I'd just leave it as fens to be consistent with the lowland plan.

Description in Annex 1

Other characteristic features

alter wording to:

Restricted to upland areas i.e. above the limit of agricultural enclosure, so complementing but not overlapping the existing Fens priority habitat which covers lowland systems only.

and

Reasons for recommendation

Habitat for which the UK has international obligations Includes a substantial proportion of the UK resource of (II or most of the UK representation of) four(ive) habitats listed on Annex I of the Habitats Directive (as above), of which two (Alpine pioneer formations and Petrifying springs) are priority types i.e. especially threatened in Europe. Most of the UK resource of a fifth Annex I fen habitat (Alpine pioneer formations of the *Caricion bicoloris-atrofuscae*) occurs in the uplands Although mostly well represented within the SAC and SSSI/ASSI series, all five types also occur widely outside protected sites.

also supported by upland ecologists, mammal ecologist- water voles again and inverts. Could overlap/include the headwaters plan (4.2)

5.3 Upland natural rock and scree

supported by plant ecologists and montane ecologists. Agree that it may benefit from some further definition work, but recognise it as an important and therefore priority habitat.

5.4 Rock outcrops, mine spoil etc- heavy metals

support from plant ecologists and inverts- note comments from grassland ecologists below: We all agree that Calaminarian grasslands should form a distinct Priority Habitat. We are not convinced that the habitat would receive adequate attention if split between Post-industrial habitats, Upland natural rock and scree and Active shingle rivers. We are particularly concerned about inclusion within the Post-industrial habitats, as we feel that management necessary for maintaining Calaminarian grasslands to be quite distinct. The division of Calaminarian grasslands within the 3 other priority habitats would create major reporting difficulties.

5.5 Post industrial sites

I didn't think Youngs helleborine was still a species??- bullet point 4. The habitat is obviously of great value to a range of species of ephemeral and pioneer conditions across the UK which have been misplaced from more 'natural' pioneer vegetation sites. I presume that we would continue to treat post industrial sites that have revegetated with recognisable semi natural veg - eg heathland and marshy grassland and woodland on coal spoil etc, as that habitat, rather than this? Land reclamation has led to the loss of many important sites particularly in south Wales, and CCWs view is that a dedicated HAP covering post industrial landforms with valuable secondary seminatural habitat would safeguard these features. Could this include canals?

5.6 orchards

supported by invert and plant ecologists- agree that name change would be in order- cf ponds.

5.7.1 Field banks – Liz Howe

would be sensible from a Welsh perspective- valuable habitat if managed properly in the western fringes for chough feeding habitat, as well as providing a refuge for many plant species, particularly bryophytes.- could be subsumed with hedges- many of them have hedges on top- although not all. good habitat for herps and inverts- hole nesting bees etc.

5.7.1 Field banks – farmland ecologist - I do not believe that field banks merit consideration as a new priority habitat. However, considering the contribution they make to other priority habitats and the species they support, I do feel that they should be considered as an element of existing priority habitats. I would support their inclusion within the hedgerow HAP. The hedge HAP group were mostly unwilling to consider including field banks due to the difficulty of producing a workable definition.

5.7.2 Roadside verges - see comments below from grassland ecologists:

We recognise the value of road verges as part of the lowland grassland habitat resource, and also recognise the urgent need for improving road verge management. We have an open mind on the best way forward for road verges in terms of HAP, but agree that, at least, road verges should be given recognition within the definition of relevant priority habitats. Verges certainly are proving a valuable habitat for foraging *Bombus sylvarum* in south Wales- often the only areas with suitable forage plants for any length of time- as long as cutting regime is ok!!

5.7.3 arable land – Liz Howe

I have always supported this one (and our farmland ecologist) from a Welsh perspective where arable is more likely to be present than cereal and where the whole field should be taken into account- not just the margins- this is why it ended up on the Welsh Section 74 listing!!!!- breeding birds are not just in the margins and we dont just want to see arable weeds stuck in the edge- so why not go with this one??

5.7.3 Arable land and 6.3 Cereal field margins – farmland ecologist

I definitely support extending the cereal field-margin habitat to include appropriate whole arable fields. There is evidence that shows appropriate management will allow species confined to the edges of extensive arable fields to spread. I feel the current CFM habitat makes an arbitrary distinction that is not entirely supportable by the evidence.

5.7.4 scrub and tree line-

agree this is a difficult one- such a valuable habitat for a whole range of taxa as well as being a habitat in its own right- agree that if it can't be supported by the woodland HAP group then at least have it brought more centrally to the attention of all the other haps. Agree that upland scrub should fall into montane or the upland wood types. supported as a habitat by upland ecologists. Will need to check with woodland ecologist.

6.2 hedgerow changes – Liz Howe

Can't there be a broad habitat type of all hedges and then just widen the current priority one a bit to include more than at present? Will need to check with farmland ecologist..

6.2 Ancient and/or species-rich hedgerows – farmland ecologist

The current habitat definition has proved to be unworkable. The term 'ancient' has been defined as pre Enclosure Acts; this causes difficulties in that the dates of enclosure vary considerably across the UK and assessing any individual hedge can require considerable historical research. It has also, to date, proved impossible to define species-rich ground flora because of the range of plant communities that can make up hedge basal flora and the lack of data on basal flora composition. The suggestion of including virtually all hedges has in part been led by these problems with definition. The current tendency is to only include those hedges which comply with the woody species component of the definition within the priority habitat - this excludes a

large number of hedges that should qualify for ground flora. I favour extending the definition not only because of the problems with the current definition but also because of the structural value of all hedgerows as a species habitat and their importance as linkages in the landscape.

6.3 Cereal field margins – Liz Howe

agree to suggested changes- ie to arable margins, but see above. Also agree with your reservations about definition now and about inclusion of OV types.

6.4 wood pasture - removal of 'lowland' restriction agreed with.

6.5 lowland calc grassland- see grassland ecologist below:

We agree with the proposed change to the definition to include CG10.

6.6 lowland heathland- heathland ecologist and grassland ecologist agree with slight definition change.

6.7 Native woodland – Liz Howe

have to talk to woodland ecologist, but think that this is ok as long as individual targets are retained within the umbrella title.

Dr Tony Gent, Chief Executive Officer, The Herpetological Conservation Trust

Many thanks for the opportunity to comment - we have left insufficient time to do this justice but wish to offer a few comments.

1. we support the logic behind a HAP that may be broader than the definition of the 'priority habitat'. This is pragmatic and sensible. There might be presentational difficulties in explaining this, and the focus re funding activities that may be seen to be directed towards 'non priorities' may confuse the purists. We felt that the restriction of ponds to only those of high ecological quality - against potentially restrictive criteria - was unhelpful since it undervalued a threatened resource. The ability for the HAP to cover a wider range of ponds helps address this conflict.

2. The naming of 'high quality ponds' may seem to be pedantic but we would be worried that ponds that actually do have a significant ecological function, but that do not score sufficiently against the criteria, are effectively down graded by the nomenclature. These could include ponds rich in amphibians or that are important as stepping stones or as reservoirs for widespread species. The naming should therefore reflect the mechanism of selection, which could relate more to a description of 'high diversity' rather than implication of 'importance'.

3. We're keen to see some of the more 'typical species' reflected in habitat types - obviously from our stance reptiles and amphibians. Reptiles have often suffered greatly through over management (as well as under management) of habitats - we're worried that the focus on 'increased lowland grazing' may actually start to bring about the declines already experienced via upland over-grazing for these species. Restoring the status of the adder, for example, in mountain heaths could be a good example to include.

4. We are pleased to see the inclusion of 'post-industrial' sites and appreciate the politics behind its selection and the sensitivity re. prioritisation. Such habitats provide a significant contribution to the ranges of many amphibian and reptile species. The generally urban nature of such areas gives them a disproportionate importance with regards to involving local people and therefore any HAP should be allowed to broaden the interest beyond the 'most important' ecologically and also include areas of significance to people and for wider biodiversity benefits, such as connectivity/corridor/ stepping stone values. Prioritisation of habitats in this category should not be done at the expense of losing a representative diversity of different habitats, etc, created through different 'industrial processes'.

Importantly there needs to be a mechanism to look at what is (ecologically) important about these sites - so that appropriate management (or non-intervention) is achieved. This attention to detail can get lost via 'generalist' approaches to habitats - and something that is simply saved as it is 'post industrial' might miss the point! This especially so as often the importance relates to early successional habitats which may be lost without active management.

5. Other habitats for consideration: we would be keen to see more action dedicated towards the positive (but appropriate!) management of field banks, margins, road verges and hedges and the significance of these habitats both by the significant area occupied by them and their important function for connectivity needs to be recognised. BAP provides a good mechanism for seeing such actions happen. Amphibians and reptiles use such habitats extensively and the connectivity allows effective 'metapopulation' dynamics for such species with low dispersal potentials - which allows long term survival in otherwise rather small patches. We

would welcome the development of any mechanism that promotes proper and sympathetic management of these habitats and encourages the creation of more. Importantly such mechanisms need to promote the functionality as well as the biodiversity of such features (e.g. verges plus sustainable urban drainage) and HAPs to encourage such conservation welcomed. Setting definitions for priority habitats is more difficult but should contain a broad 'basket' of biodiversity interest, both faunal and floral and including amphibian & reptiles, to allow a wide diversity of 'important' habitats to be included in the different definitions.

6. We would be keen to ensure that the full characteristic biodiversity of habitats is reflected, e.g for lowland calcareous grassland. We have long had concerns about over reliance on NVC classifications since the botany is not representative of the full biodiversity. Notably we are concerned that management to enhance floristic diversity has been detrimental to certain faunal species - for example reptiles - and that HAPs need to ensure the right balance, that might get missed if the habitat definitions are focussed on the NVC.

Dr Katie Parsons, The Bat Conservation Trust, on behalf of Joint Bat BAP steering group

Comment to JNCC Habitats Advice Team re Preliminary Analysis and Consultation Report for Freshwater and Terrestrial Habitat Proposals

I received your consultation report on the Priority Habitats Review from Wildlife & Countryside Link. I send this response in my capacity as chair of the joint bat BAP steering group. This steering group directs the four UK Species Action Plans for which the Bat Conservation Trust is Lead Partner. These are the lesser horseshoe bat, barbastelle, Bechstein's bat and (combined) common and soprano pipistrelle SAPs. The Bat Conservation Trust is the only organisation concerned solely with the conservation of bats within the UK.

The Bat Conservation Trust has few comments on section 4 (freshwater habitats), although we would like to support in particular the proposal for high quality ponds to be considered a priority habitat as these are likely to be of particular value as foraging habitats for both species of pipistrelle bat and the barbastelle. Consequently the protection and enhancement of ponds should benefit those species (and also other bat species not currently listed as priorities).

With regard to section 5 (terrestrial habitats), we agree with your assessment that roadside verges can be given recognition within other HAPs and also in SAPs. We have been working closely with the Highways Agency recently, and discussions on appropriate management of roads and mitigation for new road schemes for bats have included consideration of roadside verges.

Our main comments relate to section 6 (changes to existing priority habitats). The Bat Conservation Trust strongly supports the proposal of extending the definition of priority hedgerows to include all semi-natural hedgerows. As stated in your document this change would recognise the important functional role of the hedgerow network in the landscape. Bats have been shown to utilise hedgerows extensively in commuting around their landscape, for example from roosts to favoured foraging areas. Indeed the introduction to the JNCC document "Habitat management for bats - A guide for land managers, land owners and their advisors" (published in 2001) states the following:

"Hedgerows and ponds, both widely used by bats, have been lost from the countryside at an alarming rate – even in recent years. For example 23% of hedgerows and 75% of ponds were lost during the period 1984 to 1990."

Hedgerows provide features by which bats can navigate, while also offering cover and shelter from winds. Even relatively species-poor hedgerows are hence of great importance to bats (and to other fauna that use them for movements such as dispersal). The focus of the current definition takes little account of this important connectivity function hence we support the proposed widening of the definition. As you state, the inclusion of all semi-natural hedgerows would help to redress the effects of habitat isolation and fragmentation by encouraging restoration of these elements and appropriate management to improve their species richness. The wider applicability of the habitat to Scotland and Northern Ireland is also welcomed. In summary therefore we consider the benefits of extending the habitat definition to encompass all semi-natural hedgerows far outweigh the points of concern that you raise.

In addition, the broadening of this priority habitat type (and the inclusion of ponds as a priority habitat) would assist the UK in meeting its obligations under Article 10 of the Habitats Directive.

“Member States shall endeavour, where they consider it necessary, in their land-use planning and development policies and, in particular, with a view to improving the ecological coherence of the Natura 2000 network, to encourage the management of features of the landscape which are of major importance for wild fauna and flora.

Such features are those which, by virtue of their linear and continuous structure (such as rivers with their banks or the traditional systems for marking field boundaries) or their function as stepping stones (such as ponds or small woods), are essential for the migration, dispersal and genetic exchange of wild species.”

Dr Deborah Long, Plantlife Scotland, on behalf of Montane Scrub Action Group

The Montane Scrub Action group (MSAG) is an inter-disciplinary partnership of organisations actively promoting the benefits and restoration of semi-natural montane scrub. Members include research institutions, non government organisations and statutory agencies.

MSAG has comments on the following proposed habitat types:

- Mountain heaths
- Tree line scrub and Krummholtz
- Juniper

Mountain heath and scrub:

MSAG supports the proposals for a new priority habitat of mountain heath and welcomes the addition of “and scrub” to the habitat title. Without this qualification, montane scrub and treeline habitats will continue to be the Cinderella habitat of the UKBAP, receiving fewer resources and less attention than they deserve and need.

Description

The definition of mountain heath and scrub should follow the Annex 1 description of 4080 Sub-Arctic willow spp Scrub (www.jncc.gov.uk). This habitat type must however also include those sites that now only support one species of willow.

The Annex I habitat type consists of a mixture of willow species which have arctic-alpine and arctic-subarctic distributions in Europe. Sub-Arctic species include downy willow *Salix lapponum*, whortle-leaved willow *S. myrsinites*, mountain willow *S. arbuscula* and woolly willow *S. lanata*. Associated arctic-alpine and northern willows include net-leaved willow *S. reticulata*, dark-leaved willow *S. myrsinifolia* and tea-leaved willow *S. phylicifolia*. The willows grow among a rich mixture of dwarf shrubs, grasses, rushes and broad-leaved herbs, such as bilberry *Vaccinium myrtillus*, tufted hair-grass *Deschampsia cespitosa*, great wood-rush *Luzula sylvatica* and Alpine lady’s-mantle *Alchemilla alpina*, and the habitat supports many rare plants and animals of northern latitudes and high mountains.

It would therefore include the following NVC categories: W17, W18, W19, W20, which should all be included in the list of corresponding habitats. We would however point out that *Betula nana* should be listed in both the mountain heath and scrub and upland heathland priority habitats.

Distribution and extent

The MSAG has provided a collation of all records for montane scrub to SNH and in a GIS readable format (Mackenzie 2000). Many of the records are old and few provide any useful information on extent or condition of sites. Part of a proposed HLF project, led by MSAG, is to improve the level of basic information about sites to help target more detailed survey by experts.

Target vegetation types for restoration

This section must include W20.

Treeline scrub / Krummholtz:

As a priority for restoration, treeline scrub and Krummholtz must be included within the priority habitat system. This means that it needs to be specifically included in the relevant priority habitats, which would be:

- Upland birchwoods
- Native pine woodlands
- Upland oakwoods
- Wet woodland.
- Upland mixed ashwoods

Juniper:

Under the ongoing priority species review, it is important that juniper continues as a priority species, with a species action plan. Juniper grows in a wide range of habitats across the UK and in recent years its extent and condition has declined considerably. For this reason, effective action for juniper cannot be delivered solely through habitat action plans. However, it is appropriate that juniper should be linked to all relevant habitat action plans to support delivery on a habitat scale. These would include:

- Mountain heath and scrub
- Upland heathland
- Upland birchwoods
- Native pine woodlands
- Coastal sand dunes

For more information on the Montane Scrub Action Group, contact:

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Alison Lee, SNH, on behalf of Freshwater LCN, EA, SEPA and Pond Conservation

BAP PRIORITY SPECIES AND HABITATS REVIEW 2005-6

Response to the Preliminary Analysis and Consultation Report for Freshwater Habitat Proposals

*Collated response from the Freshwater LCN, EA, SEPA and Pond Conservation
13th April 2006*

Overview (comments from Pond Conservation)

We welcome this well thought through consultation. However, we are concerned that the timetable for the BAP Priority Species and Habitats Review is behind schedule. The Priority habitat review and consultation was due to be complete at the end of 2005. We urge that this process is now pushed forward so the new agreed priority habitats can be signed off by the UK Biodiversity Standing Committee in June 2006.

Response to generic conclusions (comments from Pond Conservation)

This recognition of points of confusion is helpful and we endorse the positions taken on these issues. In particular it is important to recognise that the aim of this stage of the review process is to identify priority habitats (i.e. Habitat Action Plans or other delivery mechanisms will be agreed at a later stage), and that resource implications are not a criterion for identifying priority habitats.

These issues demonstrate a further point of confusion which is not addressed here, which is the status of habitats identified through this review process. Although this appears to be stating the obvious it has been an issue for discussion, so we would like to use this opportunity to stress that it is important that habitats found to meet the criteria in this review do become UK BAP Priority Habitats.

Comments have been collated for the following freshwater habitat proposals:

Proposed priority habitat	BAP broad habitat	Lead proposer
4.1 Active shingle rivers	Rivers and streams	Freshwater LCN
4.2 Headwaters	Rivers and streams	Freshwater LCN
4.3 Oligotrophic lakes	Standing waters and canals	Joint Lakes HAP Steering Group
4.4 Ponds of high ecological quality/conservation value	Standing waters and canals	Freshwater LCN

4.1 Active shingle rivers

JNCC comments on proposal included: The scope of the habitat is quite broad, though it seems to form a meaningful 'unit' which relates to the qualifying criteria. The intention is to include whole river systems, except for heavily-modified lower reaches that do not meet the description. There is some overlap with the proposal for Headwaters (see Section 4.2), and the proposal for Rock outcrops, mine spoil and river shingle rich in heavy metals (see Section 5.4), but this could be avoided by restricting the definitions accordingly. *Comments on this particular point are invited.*

4.1a Response from Iain Sime, Scottish Natural Heritage:

Bullet point three (in the JNCC consultation report) lists a number of Habitats Directive Annex II species that rely on the habitat type, including lampreys, but the text states “lampreys *Petromyzon* spp.”. As there is only one *Petromyzon* species but also two unmentioned *Lampetra* species, this text should be changed to “lampreys *Petromyzon*, *Lampetra* spp.”. This is probably semantics but *Lampetra* have a much greater range over catchments than *Petromyzon* and different life histories and therefore different requirements. I would also suggest deleting the text “for fisheries management” from the text in bullet point four.

4.1b Response from Chris Mainstone, with contributions from Jon Webb, English Nature:

We support JNCC’s view that this proposal is well justified and would make the following points.

- i. JNCC has made it clear that they are not seeking views on the direction of BAP implementation on proposed priority habitats in this consultation. However, the management of rivers is so intimately associated with the normal business of the environmental agencies (Environment Agency, SEPA and DoE Northern Ireland) that English Nature feel some sort of broad steer on worthwhile, added-value activities for BAP implementation is necessary as part of the evaluation of the proposal.
- ii. For this reason, we suggest that JNCC’s evaluation includes a suggestion that BAP implementation of this proposal should focus on aspects of habitat management that go beyond existing/normal management activity. Existing/normal activity includes any work in fulfilment of the Water Framework Directive, as well as activity undertaken to comply with UK obligations towards designated wildlife sites. Examples would be abstraction management or discharge consenting aimed at complying with hydrological or chemical standards for High and Good Ecological Status.
- iii. Natural geomorphological processes are key to the biodiversity value of this habitat, particularly the maintenance/restoration of dynamic channel movement within the floodplain. We suggest that JNCC includes in its evaluation a suggestion to the effect that the protection and restoration of geomorphological naturalness should be the prime focus of BAP implementation for this habitat. River geomorphology will be addressed by the Water Framework Directive to an extent that is currently unclear - BAP implementation should focus on going beyond this basic level of protection/enhancement, particularly in relation to the level of freedom given to the river channel within its floodplain and the avoidance of gravel extraction.
- iv. The JNCC macrophyte-based classification does not provide a particularly useful means of delineating the habitat - delineation using suitable generic geomorphological criteria is likely to be the best approach. The process needs to avoid the use of anthropogenically influenced criteria, since this can lead to those rivers in most need of restorative action being excluded from consideration. Such criteria do however have an important role in setting priorities for action within the habitat resource.
- v. Considering the interaction with the headwaters proposal, we suggest that headwaters should be left out of the scope of the ‘active shingle rivers’ priority habitat, to be picked up within the ‘headwaters’ priority habitat. The reasons for this are explained in the accompanying comments on the headwaters proposal. (See English Nature’s comments in 4.2b).

4.1c Response from Pond Conservation:

Active shingle rivers are an important and vulnerable category of habitat. Identification as a priority habitat will be particularly useful to focus attention on *maintaining* the high quality of the best examples of rivers, under the provisions of the Water Framework Directive, where these do not receive specific nature conservation protection.

A simple distance from source cut-off can be used to separate this priority habitat from the headwater habitat, where both occur in the same river.

4.2 Headwaters

JNCC comments on proposal included:

- The Headwaters proposal cuts across the usual 'ecological' classifications of river types. On the other hand, headwaters are a recognisable habitat feature with a related set of issues affecting them.
- The habitat is simply defined using an OS map-based definition, which is to a degree arbitrary, but intended to be pragmatic. This means that the uppermost sections of all watercourses in the UK are included, irrespective of their typology, ecological condition or value for biodiversity. However there is not a straightforward way to narrow the definition and the freshwater habitat specialists consider that prioritisation for action should be done at the implementation stage.
- As defined, Headwaters would overlap with the existing Chalk rivers priority habitat and two newly proposed priority types, Active shingle rivers (see Section 4.1) and metalliferous habitats (see Section 5.4). This could be remedied by exclusion of the overlap from one or other definitions. *Comments on the last three bullet points in particular are invited.*

4.2a *Response from Iain Sime, Scottish Natural Heritage:*

The definition seems sound and well argued. One point to mention relates to species which are supported by this habitat. Headwaters that sit above impassable waterfalls may also support important brown trout populations that could be genetically isolated from the rest of the trout population in the catchment and elsewhere.

4.2b *Response from Chris Mainstone, English Nature:*

We support JNCC's view that this proposal is well justified and would make the following points.

- i. The current exclusion of most of the headwater habitat resource from the definition of waterbodies under the Water Framework Directive is a critical driver for adopting headwaters as a priority BAP habitat.
- ii. In addition to the impacts listed by the proposal and in JNCC comments, small point source pollution from dwellings remote from the sewerage network are also a major influence on headwater quality. The resolution of problems from small point sources remains a major management issue that can usefully be explored through BAP activity on headwaters.
- iii. Whilst the definition of headwaters does cut across some of the more widely used biological classifications of rivers, it nevertheless relates reasonably well to a range of environmental characteristics of watercourses (distance from source, catchment size, flow, water depth, channel width) that have high ecological significance. The similarities between all headwaters in terms of these characteristics give this proposed priority habitat a high degree of ecological coherence.

- iv. The commonality of management problems across the headwater resource, and the specificity of many of these problems to headwaters, makes the development of a coherent set of BAP actions an easier and more worthwhile task. Considering this commonality and specificity, we suggest that headwaters should be left out of the scope of the proposed 'active shingle rivers' priority habitat, to be picked up within the proposed 'headwaters' priority habitat. The chalk rivers HAP has attempted to include headwaters (including winterbournes) within its remit, but in terms of securing specific strategic management action we suggest that chalk river headwaters are best placed within the proposed headwaters priority habitat. This allows the Chalk Rivers HAP to concentrate on main river habitat.
- v. We would not want any restriction of scope based on condition or value for biodiversity, since this could lead to BAP focusing on the wrong sites (i.e. sites which are not really under threat for whatever reason), and not generating momentum for positive action on degraded habitat.

4.2c Response from Pond Conservation:

Headwaters are relatively under-protected by current legislation and policy. We support the definition based on distance from source on the 1:50,000 map as a simple way of defining the habitat.

Given the current level of understanding of headwater ecology and status, it seems sensible to include all sites in the priority habitat.

Overlap with chalk rivers and metalliferous habitats can be removed by simply excluding from the headwater habitat chalk headwaters and those metalliferous streams which are within 2.5 km of the mapped source of the stream.

The references could be updated to include more recent Countryside Survey (CS) 2000 data. CS stream studies are strongly focussed on headwater streams.

4.1/4.2 Overlap between (4.1) active shingle rivers and (4.2) headwaters

4.1/4.2a Response from Iain Sime, Scottish Natural Heritage:

Comments are invited on how these (and other) habitat types are defined in order to minimise overlap. I think it will be difficult to produce definitions that minimise overlap between these two because the active shingle rivers are defined 'ecologically' whereas headwaters are very much defined using maps. I'm not concerned about overlap between these two habitat types because they both seek to maintain the same thing (natural processes and the resulting biota with particular mention of invertebrates) in their definitions.

4.3 Oligotrophic lakes

JNCC comments on proposal included: The form would benefit from a certain amount of updating and correction e.g. data and references. *Comments on this point are invited.*

4.3a Response from Pond Conservation:

We support the proposal for an oligotrophic lake HAP wholeheartedly. We agree that some minor updating of the proposal is needed, particularly in the light of recent work on lakes for the Water Framework Directive.

4.4 Ponds

JNCC comments on proposal included:

- The criteria identified to define which ponds should be considered for inclusion are well considered and clearly linked to the nature conservation importance of individual sites. The definition provided is clear. Only a rather narrow sub-set of ponds is included in the proposed priority habitat, which is accepted on the basis that the remit of an associated 'Ponds HAP' might take a wider scope. *Comments on this point in particular are invited.*
- Because the proposed type is a relatively small subset of all ponds, a qualifier to the name is proposed, i.e. 'Ponds of high ecological quality', although 'Ponds of high (nature) conservation value' may be considered more meaningful. *Comments on this particular point are invited.*

4.4a Response from Pond Conservation:

We broadly agree with the comments made on the pond proposal, except for one minor error: in bullet point 9 "...work has already begun on mapping and compiling an inventory of the resource through the National Pond Survey". Instead of 'National Pond Survey' this should read 'National Pond Monitoring Network'.

Comments were invited on the suggestion that a narrow sub-set of high quality ponds would be included in the priority habitat, but that the 'Ponds HAP' might take a wider scope. We would support this approach, and we would favour an eventual HAP for Ponds.

Comments were invited on the issue of a qualifier to the name for the priority habitat. We would be happy with the name "ponds" or, if necessary, an additional qualifier, in which case "ponds of high conservation value" seems most appropriate.

4.4b Response from Pond Conservation Advisory Council members

Pond Conservation circulated the pond component of the current consultation to the 60 members of their Advisory Council. Feedback was strongly supportive of the pond proposal. Specific responses to the issues on which comment was invited are given below.

- *(4.4b-i) Response from Alastair Driver, National Conservation Manager, Environment Agency*

On the subject of a title for the HAP. As I'm sure everyone knows these things get abbreviated down to the simplest form as we have to talk and e-mail so fast in this day and age! So I for one will probably be calling it the Special Ponds HAP, unless someone comes up with something punchier. This would actually be a good title for the public and the media to relate to.

- *(4.4b-ii) Response from Andrea Shaftoe, Principal Officer Conservation & Biodiversity, Environment Agency North East Region*

I'm very pleased to see the level of support apparent in the text in section 4.4 of the consultation document e.g. justification convincing, criteria well considered and clearly linked to nature conservation importance... etc.

In terms of bullet point six where we are asked to comment on the rather narrow sub-set of ponds included, this is as it should be for a priority habitat, especially as it is set in the context of association with a wider HAP. On this note there is some confusion between this paragraph (page 11) where it talks about a wider Pond HAP and page 4 where it is

set in the context of the broader BAP habitat of 'standing waters and canals'. We need to clarify this. Is the wider Pond HAP a subset of 'standing waters and canals'?

As to the title, there are many pros and cons. High ecological quality would tie in with the Water Framework Directive better, but means nothing outside the technical arena! Ponds of high (nature) conservation value is better but not very snappy. I would tend to agree with Alastair that something short like Special Ponds is best.

- (4.4b-iii) Response from Chris Gleed-Owen, Research and Monitoring Officer, The Herpetological Conservation Trust

Possible names for the priority habitat:

- Ponds of Ecological Importance
- Ponds of Conservation Importance
- Ecologically Important Ponds
- Ponds with High Biodiversity

- (4.4b-iv) Response from Paul Pendlebury, Reptrans UK

Just a cursory look at the proposed HAP leads me to think that an awful lot of ponds are going to be unprotected by this legislation and that the onus is on species richness (whereas we all know that some species such as *Coeloptera* will come under more pressure by not being allowed into the group) and that all ponds should be looked at on their own merits. Why not try for a complete cover HAP with none omitted when we only have (according to the figures shown) 30,454 ponds, and only 1,522 high quality ponds.

This was one of the problems that occurred when the great crested newt survey project was undertaken as the criteria meant that ponds having less than 100 newts were discounted. So there lies the problem; how does anyone know the population fluctuations of any particular pond at any one time?

If we are trying to protect the ponds we have for the sake of their flora and fauna assemblages and not say that any pond is of greater importance than another. We could then develop work parties to bring these ponds up to scratch and not allow any more defiling of this unique habitat.

4.4c *Phil Boon, Scottish Natural Heritage:*

I don't see any real need for a "snappy" title like 'Special Ponds'. After all, 'oligotrophic lakes' is hardly a title for the layman. I would steer clear of phrases like 'high ecological quality' – it sounds similar to the WFD 'high ecological status' and will be confusing. 'Ponds of Conservation Importance' would be fine.

4.5 **Other potential freshwater habitats**

4.5a *Response from Iain Sime, Scottish Natural Heritage:*

Other river types. I absolutely support the statement in the consultation that it would be very difficult to define extra river habitat types. We've had years of difficulty trying to establish, and then communicate, what the Annex 1 habitat '*Ranunculus* rivers' actually is. There would be the same or greater problems in trying to define river types beyond active shingle rivers, chalk rivers and headwaters.

Canals. I agree with the conclusion not to have canals as a priority habitat.

4.5b Phil Boon, Scottish Natural Heritage:

Canals. I am not in favour of making canals a priority habitat. My view of canals and nature conservation is, that we value some of our canals for their biodiversity, but we can't expect to deal with them in BAP terms as we would a natural habitat. They were constructed for specific human requirements – as such I think they are inappropriate as a priority habitat.

4.5c Response from Freshwater LCN:

The Freshwater LCN reconsidered the points made about 'other river habitats' and 'canals' within the consultation report. We maintain our position on 'other rivers' in that we want to avoid a 'blanket' approach to priority habitats that would be extremely difficult to define and hence lacking in focus in terms of aims, targets and delivery. As mentioned specifically by Iain Sime (see comments above), there would be great difficulty in defining river types beyond the current chalk rivers priority habitat and the two new proposed river priority habitats. This would seriously compromise the development and delivery of specific, measurable and achievable objectives for other river habitat types. Again, the case for a proposed priority habitat for canals was not supported as specialists felt that the reasons for recommendation were not sufficiently robust.

5.4 Rock outcrops, mine spoil and river shingle rich in heavy metals

JNCC comments included: The habitat has a relatively narrow focus, relating to its nature conservation value, and is defined on ecological criteria. As described it does overlap with two other newly proposed priority habitats: Upland natural rock and scree habitats (see Section 5.3) and Active shingle rivers (see Section 4.1). The definitions of these types could be revised to avoid overlap.

5.4a Response from Iain Sime, Scottish Natural Heritage:

To address JNCC's request for comments about overlap with 'rock outcrops, mine spoil and river shingle rich in heavy metals', then I agree with the point made in section 5.4 that the definition of active shingle rivers could be changed to include 'river shingle rich in heavy metals'. However I wonder if there wouldn't be something of a natural conflict of interests between the two habitat types. The information about active shingle rivers mentions the anthropogenic threats faced by the habitat and therefore I would see a HAP seeking to mitigate this and restore natural processes. On the other hand, the definition of 'river shingle rich in heavy metals' seems to indicate that this habitat type often relies on at least past anthropogenic influence to produce such shingle? If so would there be a danger that restoration of active river shingle might damage the grassland interest on heavy metal shingle?

Further to the above, 'river shingle rich in heavy metals' is a grassland habitat type and, if it were included in a re-jigged definition of active shingle rivers, I think there would be a danger that the grassland element of the habitat would be lost in the HAP (as the HAP would most likely be staffed by the members of the Freshwater LCN etc). Grassland specialists could join the HAP and that might help promote collaborative working (which is no bad thing). But I suspect the business of the HAP may be dominated by aquatic issues and therefore it may not be the best use of their time? In conclusion, if the 'rock outcrops, mine spoil and river shingle rich in heavy metals' proposal is accepted as a priority habitat, I support these habitat types remaining separate.

Additional consultee information:

We were also copied into Margaret Palmer's comments on active shingle rivers, headwaters, oligotrophic lakes, ponds of high ecological quality/conservation value, other river types and canals. These were sent directly to Ed Mountford on 6th April.

ENGLISH NATURE'S RESPONSE TO CONSULTATION ON FRESHWATER AND TERRESTRIAL HABITAT PROPOSALS

April 2006

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- 1. Minor changes proposed to Biological Status section of plan (Wood-Pasture and Parkland)
- 2. Additional explanation of what is meant by Wood-Pasture
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1.0 English Nature leads for Priority Habitat Review

Proposals for new UK priority habitats (terrestrial and freshwater)

Proposed priority habitat	Lead proposer	EN lead
Active shingle rivers	Freshwater LCN	Chris Mainstone
Headwaters	Freshwater LCN	Chris Mainstone
Oligotrophic lakes	Joint Lakes HAP Steering Group	Stewart Clarke
Ponds of high ecological quality/conservation value	Freshwater LCN	Stewart Clarke
Mountain heaths	Upland LCN	Alistair Crowle
Upland flushes and fens	Upland LCN	Alistair Crowle
Natural upland rock and scree habitats	Upland LCN	Alistair Crowle
Rock outcrops, mine spoil and river shingle rich in heavy metals	Lowland grassland LCN	Richard Jefferson
Post-industrial sites of high nature conservation value	Urban habitat IAWG	David Knight
Traditional orchards	English Nature	Heather Robertson

Proposals for changes to existing UK Priority habitats (terrestrial and freshwater)

BAP Priority habitat	Type of change proposed	EN lead
Cereal field margins	Change of name and widening of definition	Heather Robertson
Ancient and/or species-rich hedgerows	Change of name and widening of definition	Heather Robertson
Lowland wood pasture and parkland	Change of name and widening of definition	Keith Kirby
Lowland heathland	Minor change of definition	Isabel Alonso
Lowland calcareous grassland	Minor change of definition, though note knock-on effect on definition for Upland calcareous grassland.	Richard Jefferson

2.0 Freshwater habitat proposals - new priority types

2.1 General

The following general comments relate to standing open water habitats – lakes, ponds and canals.

1. Freshwater habitats are distinct from other habitats in a number of respects: pressures are frequently offsite and require action at the catchment scale; environmental parameters (water quality and quantity) are of central importance; there is existing environmental protection legislation directed at these habitats and the environment agencies (EA and SEPA) have a statutory role; and finally there are a range of existing programmes targeted at key pressures, such as the water industry periodic review process (AMP) and the catchment sensitive farming programme. These drivers have the potential to deliver benefits across both designated (SSSI/SAC) and non-designated sites and hence there is some overlap/interaction with the BAP process for these habitats.
2. The implementation of the EU Water Framework Directive (WFD) will increase the level of activity directed at freshwater habitats in particular addressing a wider range of pressures. However, the scope of the WFD is limited to certain standing water types – lakes >50ha, and lakes > 5ha within protected areas (drinking water, SAC/SPA). Lakes of SSSI status (5-50ha) may be included within the scope of WFD implementation but this is still under discussion. Therefore, there are a large number of standing waters that currently receive little or no protection and will not benefit from WFD measures: ponds and lakes <5ha and lakes 5-50ha with no conservation designations. These water bodies are likely to benefit most from UK BAP.
3. Given the current scope of legislation and key drivers it is important that UK BAP is targeted at sites and pressures currently neglected. Otherwise there is the risk that BAP becomes a mechanism for reporting on delivery of other legislation or drivers rather than a delivery mechanism itself. Within the UK Lakes Steering Group at present there is insufficient distinction between work undertaken for BAP and other statutory work. Work undertaken to prioritise sites and define new targets has started to address this problem but it is important that these issues are considered at the implementation stage of any new priority habitat plans. Lead partners need to be able to commit resources beyond the work they are already doing for other purposes.
4. Notwithstanding these issues we believe that the proposed habitats for priority status are justified and any resultant HAPs will have an important role in protecting and enhancing freshwater habitats which would otherwise only benefit from minimal environmental protection.

2.2 Active Shingle Rivers

P6 The scope of the habitat is quite broad, though it seems to form a meaningful ‘unit’ which relates to the qualifying criteria. The intention is to include whole river systems, except for heavily-modified lower reaches that do not meet the description. There is some overlap with the proposal for Headwaters (see Section 4.2), and the proposal for Rock outcrops, mine spoil and river shingle rich in heavy metals (see Section 5.4), but this could be avoided by restricting the definitions accordingly. *Comments on this particular point are invited.*

We support JNCC’s view that this proposal is well justified and would make the following points.

- vi. Considering the interaction with the headwaters proposal, we suggest that headwaters should be left out of the scope of the 'active shingle rivers' priority habitat, to be picked up within the 'headwaters' priority habitat. The reasons for this are explained in the accompanying comments on the headwaters proposal.
- vii. The JNCC macrophyte-based classification does not provide a particularly useful means of delineating the habitat - delineation using suitable generic geomorphological criteria is likely to be the best approach. The process needs to avoid the use of anthropogenically influenced criteria, since this can lead to those rivers in most need of restorative action being excluded from consideration. Such criteria do however have an important role in setting priorities for action within the habitat resource.
- viii. Natural geomorphological processes are key to the biodiversity value of this habitat, particularly the maintenance/restoration of dynamic channel movement within the floodplain. We suggest that JNCC includes in its evaluation a suggestion to the effect that the protection and restoration of geomorphological naturalness should be the prime focus of BAP implementation for this habitat. River geomorphology will be addressed by the Water Framework Directive to an extent that is currently unclear - BAP implementation should focus on going beyond this basic level of protection/enhancement, particularly in relation to the level of freedom given to the river channel within its floodplain and the avoidance of gravel extraction.
- ix. JNCC has made it clear that they are not seeking views on the direction of BAP implementation on proposed priority habitats in this consultation. However, the management of rivers is so intimately associated with the normal business of the environmental agencies (Environment Agency, Sepa and DoE N Ireland) that English Nature feel some sort of broad steer on worthwhile, added-value activities for BAP implementation is necessary as part of the evaluation of the proposal.
- x. For this reason, we suggest that JNCC's evaluation includes a suggestion that BAP implementation of this proposal should focus on aspects of habitat management that go beyond existing/normal management activity. Existing/normal activity includes any work in fulfilment of the Water Framework Directive, as well as activity undertaken to comply with UK obligations towards designated wildlife sites. Examples would be abstraction management or discharge consenting aimed at complying with hydrological or chemical standards for High and Good Ecological Status.

Comments provided by Chris Mainstone, with contributions from Jon Webb, 11/04/06

2.3 Headwaters

P7 The Headwaters proposal cuts across the usual 'ecological' classifications of river types. On the other hand, headwaters are a recognisable habitat feature with a related set of issues affecting them.

The habitat is simply defined using an OS map-based definition, which is to a degree arbitrary, but intended to be pragmatic. This means that the uppermost sections of all watercourses in the UK are included, irrespective of their typology, ecological condition or value for biodiversity. However there is not a straightforward way to narrow the definition and the freshwater habitat specialists consider that prioritisation for action should be done at the implementation stage.

As defined, Headwaters would overlap with the existing Chalk rivers priority habitat and two newly proposed priority types, Active shingle rivers (see Section 4.1) and metalliferous habitats (see Section 5.4). This could be remedied by exclusion of the overlap from one or other definitions. *Comments on the last three bullet points in particular are invited.*

We support JNCC's view that this proposal is well justified and would make the following points.

1. The current exclusion of most of the headwater habitat resource from the definition of water bodies under the Water Framework Directive is a critical driver for adopting headwaters as a priority BAP habitat.
2. In addition to the impacts listed by the proposal and in JNCC comments, small point source pollution from dwellings remote from the sewerage network are also a major influence on headwater quality. The resolution of problems from small point sources remains a major management issue that can usefully be explored through BAP activity on headwaters.
3. Whilst the definition of headwaters does cut across some of the more widely used biological classifications of rivers, it nevertheless relates reasonably well to a range of environmental characteristics of watercourses (distance from source, catchment size, flow, water depth, channel width) that have high ecological significance. The similarities between all headwaters in terms of these characteristics give this proposed priority habitat a high degree of ecological coherence.
4. The commonality of management problems across the headwater resource, and the specificity of many of these problems to headwaters, makes the development of a coherent set of BAP actions an easier and more worthwhile task. Considering this commonality and specificity, we suggest that headwaters should be left out of the scope of the proposed 'active shingle rivers' priority habitat, to be picked up within the proposed 'headwaters' priority habitat. The chalk rivers HAP has attempted to include headwaters (including winterbournes) within its remit, but in terms of securing specific strategic management action we suggest that chalk river headwaters are best placed within the proposed headwaters priority habitat- this allows the Chalk Rivers HAP to concentrate on main river habitat.

Comments provided by Chris Mainstone, 11/04/06

2.4 Oligotrophic lakes

P8 The habitat description provided for Oligotrophic lakes would benefit from some clarification e.g. linkage to existing classifications and/or alkalinity levels. A clear definition for Oligotrophic lakes will need to be drawn up to produce an inventory, based on and complementing the definition recently developed by the Lakes HAP group for Mesotrophic lakes.

There is potential overlap with the proposed ponds priority habitat (see Section 4.4), but 2 ha has been agreed between the relevant specialists as the cut-off size, with the option to include smaller water bodies in the oligotrophic lakes inventory on a case-by-case basis.

The form would benefit from a certain amount of updating and correction e.g. data and references. *Comments on this point are invited.*

We support the proposal to include oligotrophic (including dystrophic) lakes as a priority habitat for the following reasons:

- In England lakes from across all trophic classes have deteriorated and as a habitat type lakes have received little protection. Pressures such as nutrient enrichment are common to many lakes.
- Whilst nutrient enrichment is a pressure affecting all lakes there are other pressures such as acidification, siltation and atmospheric nitrogen pollution which are more significant for oligotrophic lakes and are currently not being addressed.

- Division of lakes into trophic classes is fairly arbitrary and has proved difficult. The inclusion of oligotrophic and dystrophic lakes would result in the full spectrum of UK lake types being included within BAP. LBAPs would be more confident that work on a given lake was appropriate.
1. It is important that the scope of an oligotrophic lakes HAP is well defined for the reasons set out in points 1-4 in section 2.1. The most appropriate way to ensure the right focus would be to include this priority habitat under the auspices of the the UK Lake HAP Steering group with links to any pond priority habitat. The focus should be on sites and issues not addressed through existing designated sites work or WFD.
 2. The relative importance of oligotrophic waters varies across the UK (there are many good examples in Scotland but this type is more vulnerable in England, Wales and NI) and hence a geographical bias may be justified. It is important that a particular subset of lakes within this type which correspond with the Annex 1 habitat type '*Oligotrophic waters containing very few minerals of sandy plains*' are highlighted as these are rare and impacted across Europe.
 3. JNCC comments relating to updating data and references are valid. There has been significant work undertaken by the UK Steering Group and for the purposes of WFD implementation on developing the GB Lake Inventory. This inventory has already been used to allocate lakes to the three trophic categories and the data could be used to support the development targets for oligotrophic lakes. There is also a large body of work being undertaken to support WFD implementation that could inform the HAP - setting reference conditions and exploring relationships between pressures and biological elements. Other sources of information include a special issue of **Aquatic Botany 73(4)** on soft water macrophytes and ecosystems and the new vegetation based classification of lakes (JNCC, 2006).

Comments provided by Stewart Clarke, 11/04/06

2.5 Ponds

P9 Only a rather narrow sub-set of ponds is included in the proposed priority habitat, which is accepted on the basis that the remit of an associated 'Ponds HAP' might take a wider scope. *Comments on this point in particular are invited.*

Because the proposed type is a relatively small subset of all ponds, a qualifier to the name is proposed, i.e. 'Ponds of high ecological quality', although 'Ponds of high (nature) conservation value' may be considered more meaningful. *Comments on this particular point are invited.*

We support the proposal to include ponds as a priority habitat for the following reasons:

- Small water bodies currently receive little protection and are unlikely to benefit significantly from the implementation of the WFD.
 - As outlined in the proposal ponds are of significant biodiversity importance, supporting a relatively high proportion of freshwater and wetland plant and invertebrate species.
 - Ponds are relatively easy to (re-)create and restore (given appropriate guidance) and are a popular focus for local action.
1. We have expressed some concern about the name and focus of the proposed priority habitat although we do appreciate that there is an opportunity to refine definitions during implementation. The proposed focus is on a subset of ponds that have been identified as of high ecological quality. There is a risk that the actions would be focused on protecting ponds that are already 'good'. In practice if a pond already has 'exceptional an

assemblage of key abiotic groups' it probably experiences few pressures and hence one could argue does not need protection. Conversely, ponds which have experienced nutrient enrichment or other pressures and have lost their ecological interest would be outside the scope of the HAP and hence receive no attention. This can be resolved by ensuring that any HAP does not exclude ponds which may have the potential support significant biodiversity interest.

2. The current proposal focuses on defining 'high ecological quality' through the presence of key species which may limit the scope to consider sites with potential. In some cases we are not clear how far these criteria actually constrain the scope of the HAP. For example the qualification of any pond supporting Wildlife and Countryside Act Schedule 5 species would bring in all ponds with common frog, common toad, smooth, palmate and great crested newts - potentially over 50,000 ponds. It is therefore important that these criteria are refined as part of HAP implementation and extended to include ponds with potential to achieve high ecological quality (this might require more of an emphasis on physico-chemical characteristics or geography).
3. Defining and agreeing size criteria for ponds and lakes will be an important first step in any HAP development. In practice close working and liaison between ponds and lakes groups will be required.
4. We have no strong views on whether the priority habitat is named 'ponds of high ecological quality' or 'ponds of high nature conservation value'. However, we can see that the latter name may be better in communicating with the wider public and distinguishing from ponds constructed for other purposes (e.g. fishing).

Comments provided by Stewart Clarke, with contributions from Jon Webb and Jim Foster, 11/04/06

2.6 Other potential freshwater habitats

2.6.1 Other river types

P10 The existing and proposed riverine habitats (Chalk rivers, Active shingle rivers and Headwaters) encompass only a relatively small proportion of running waters in the UK. This contrasts with the position for standing waters and other semi-natural terrestrial types. The purpose of the current review is to establish a comprehensive listing of habitats which meet the criteria for priority status, **prior** to consideration of implementation issues. It seems unlikely that there are **not** other categories of running waters which would merit listing on the basis of risk and/or key species assemblages. However, it has proved difficult to define what these might be. *Comments on this particular point are invited.*

English Nature would like to reiterate the point that we would want to avoid the 'blanket' approach to priority habitat listing for river types as has been the case for standing waters and other semi-natural terrestrial types. Except for the existing and proposed riverine habitats (Chalk rivers, Active shingle rivers and Headwaters), we are doubtful whether priority habitat status would bring substantial benefits over and above what should be achieved by the Water Framework Directive and our obligations towards designated wildlife sites. See also comments on freshwater habitats, Active shingle rivers and Headwaters (sections 2.1, 2.2 & 2.3).

A number of additional proposals were put forward for river habitats as part of the last habitat gap review in 2001. Some were for whole river types and others for partial features spanning all river types e.g. headwaters, exposed river sediments. However, many of the proposals

overlapped in various ways; were difficult to define and lack focus in terms of defining the features of high conservation interest.

Comments provided by Gavin Measures, 13/04/06

2.6.2 Canals

P10 Canals form a linear network of wetland habitat in some parts of the UK. These can be important for nature conservation, especially in areas where more 'natural' wetland habitats are scarce and boat usage is limited. Some of the most important stretches in England and Wales are notified as SSSIs, principally for their aquatic flora and fauna. Some fen and swamp habitats associated with canals would be covered by the existing Fens priority habitat type, but generally the open water zone appears not to be included within the current BAP priority habitat series or the new proposals in this review. However the freshwater specialists did not consider that there was a sufficiently strong justification for proposing a BAP priority habitat for canals in this review. *Further comments on this issue are invited.*

English Nature believes that in England most of the canal lengths with significant biodiversity value as standing water habitat are already designated as SSSI. A survey of selected non-designated canals in 2002 supported this conclusion. A number of wetland habitats that occur in, or adjacent to, canals are already covered by other priority habitats. Furthermore, the WFD will include objectives for all canals and hence we should expect improvements for biodiversity as far as 'use' allows as a result of implementation of this directive. We agree that there is not sufficient justification for including canals as a priority habitat.

Comments provided by Stewart Clarke, 11/04/06

3.0 Terrestrial habitats proposals – new priority types

3.1 Mountain heaths

P11 The habitat has been renamed 'Mountain heaths' rather than 'Montane heaths' to use more familiar terminology, although it can occur at low altitudes in Northern Scotland. It has been suggested that the words 'and scrub' could be added to the name to emphasise the inclusion of this important component. *Comments on these particular points are invited.*

English Nature was part of the group that proposed the relevant upland habitats and we endorse the proposal for mountain heaths for priority habitat listing.

Montane willow scrub is specifically included within the proposed Mountain heaths priority habitat and we would recommend that title of the habitat should include the word scrub (Mountain heaths and scrub) to highlight the importance of this rare vegetation type. See also our comments on scrub and treeline vegetation (section 3.7.4).

Comments provided by Alistair Crowle, 13/04/06

3.2 Upland flushes and fens

P12 Upland fens and flushes are usually closely associated with other existing or proposed priority habitats (blanket bog, upland calcareous grasslands, upland heaths, montane heaths, limestone pavements, upland rock and scree) and can be of functional importance for species associated with these wider habitats e.g. as feeding habitat for breeding birds.

Although the term 'fens' as used by the conservation agencies usually includes flushes (and springs), the suggested title 'Upland flushes and fens' is intended to highlight the particular importance of flushes/springs in the uplands. *Comments on this particular point are invited.*

English Nature was part of the group that proposed the relevant upland habitats and we endorse the proposal for upland fens and flushes for priority habitat listing.

1. Although implementation issues are to be addressed at a later stage in this review, much of the necessary conservation action for Upland flushes and fens (e.g. controlling grazing impacts) could be taken as part of other upland habitat plans since upland flushes and fens are generally minor components associated with these more extensive habitats. However, this does not reduce the justification for priority habitat listing.
2. The description of the habitat is quite broad, and would benefit from refinement to focus on features of high conservation interest. The focus should be upon the most important habitats (e.g. SAC) such as the following NVC types: M4, M9, M10, M11, M13, M37, and M38.
3. We do have a concern about ensuring that targets are set that are achievable given that we are talking about sites that are often remote and which are managed as part of a larger system. This concern also relates to existing upland HAPs (e.g. blanket bog) where the physical extent of the habitat presents management difficulties.

Comments provided by Alistair Crowle, 13/04/06

3.3 Upland natural rock and scree habitats

P13 A generally convincing case for priority status for upland rock and scree habitats is presented, although there are issues about the scope of the habitat as indicated below. Whilst the level of risk is not generally high, the nature conservation value is substantial and should justify priority status. *Comments on this are invited.*

The description of the habitat is very broad, and would benefit from refinement to focus on features of high conservation interest. This is not easy, but a current project to describe chasmo-phytic vegetation will help. Rock and scree habitats are difficult to survey and map due to topographic complexity, inaccessibility and classification difficulties, and a comprehensive inventory is unlikely to be feasible. *Comments on these points are invited.*

English Nature was part of the group that proposed the relevant upland habitats and we endorse the proposal for upland natural rock and scree habitats for priority habitat listing.

1. We agree that the description of the habitat is quite broad, and would benefit from refinement to focus on those features of high conservation interest. We are still awaiting the results of a major survey of chasmo-phytic vegetation in England and hopefully this report will help us in future, focus on the most important features and identify areas important for this habitat.
2. Although implementation issues are to be addressed at a later stage in this review, much of the necessary conservation action for upland natural rock and scree habitat (e.g. controlling grazing and trampling impacts) could be taken as part of other upland habitat plans. However, this does not reduce the justification for priority habitat listing.
3. We do have a concern about ensuring that targets are set that are achievable given that we are talking about sites that are often remote and which are managed as part of a larger system. This concern also relates to existing upland HAPs (e.g. upland heathland, blanket bog) where the physical extent of the habitat presents management difficulties.

Comments provided by Alistair Crowle, 13/04/06

3.4 Rock outcrops, mine spoil and river shingle rich in heavy metals

P14 The habitat has a relatively narrow focus, relating to its nature conservation value, and is defined on ecological criteria. As described it does overlap with two other newly proposed priority habitats: Upland natural rock and scree habitats (see Section 5.3) and Active shingle rivers (see Section 4.1). The definitions of these types could be revised to avoid overlap.

The Lowland grassland LCN considers that it makes practical sense to have this type as a separate priority habitat, particularly as it relates well to the Habitats Directive type. However, it would be feasible to cover the various component types with other proposed habitats. Types on mine spoil have been specifically excluded from the proposal for Post-industrial habitats (see Section 5.5), although they would otherwise sit quite well within that type; and the other occurrences could be covered jointly by Upland natural rock and scree (see Section 5.3) and Active shingle rivers (see Section 4.1) habitats. *Comments on the above two points are particularly invited.*

We support JNCC's view that this proposal is well justified and would make the following points.

1. English Nature's view is that Calaminarian grassland should form a distinct Priority Habitat. We are not convinced that the habitat would receive adequate attention if split between Post-industrial habitats, Upland natural rock and scree and Active shingle rivers. This view is also shared by the Lowland Grassland LCN. To avoid the confusion regarding potential overlaps with other types identified by JNCC, we recommend the priority be re-named 'Calaminarian grasslands'.
2. The conservation issues for Calaminarian grassland (e.g. sustaining metal toxicity) are rather different to the other proposed priority types. We are particularly concerned about inclusion within the Post-industrial habitats, as mentioned; we feel that management necessary for maintaining Calaminarian grasslands to be quite distinct.
3. The division of Calaminarian grasslands within the 3 other priority habitats would create major reporting difficulties. As far as grasslands are concerned, Calaminarian grassland is one of only two semi-natural types not covered by a BAP priority habitat. The other is MG2 (false-oat-meadowsweet tall-herb grassland) which is virtually restricted to the White Peak and a handful of sites, all notified.

Comments provided by Richard Jefferson, 11/04/06

3.5 Post-industrial sites

P15 The proposal to consider post-industrial sites of high nature conservation value as a priority habitat is generally convincing, subject to the selection criteria presented in the submission and need to prioritise at the implementation stage. *Comments on this point are invited.*

There is, given the range of vegetation types included in post-industrial sites, some inevitable overlap with other priority habitats. However, given that sites will be identified and separated from other habitats by their former industrial use, this is not thought to be a significant issue. The definition excludes mine spoil habitats rich in heavy metals (see section 5.4) although these could also sit quite comfortably here. *Comments on these issues are invited.*

Although posing challenges of definition, the proposal for a post-industrial priority habitat seems to make good sense in ecological and conservation terms. It essentially fits within a single Broad Habitat type and is at a similar hierarchical level to other types. *Comments on this issue are invited.*

1. Name -- a more descriptive name might help. 'Early successional mosaics on post-industrial land' might be a better title as, hopefully, it gives a better idea of the nature of the habitat.
2. BAP Priority species - although *Epipactis youngiana* is strongly associated with such sites, there are questions about the taxonomic status of this 'species' (Foley and Clarke) and the habitat used by this orchid represents a particular type that is not representative of its wider interest. There is support for the proposed habitat in relation to its importance for cryptogams. Although the habitat clearly has recognised importance for invertebrates, there is still a need to understand and characterise this better, both geographically and across a range of sub-types which should be identified within this category.
3. Overlap with other priority habitats - in most instances the presence of another priority habitat type is likely to be as patches as part of habitat mosaic, where they may not be extensive enough or of sufficient quality to be considered in their own right and where they form but one component of the wider interest of a site.
4. Calaminarian grasslands - these are primarily upland, whereas the post-industrial habitats are primarily lowland. I would agree with the suggestion that these should be considered as a distinct priority habitat in their own right, rather than being considered as part of the interest of a range of other habitats. This, together with the apparent overlap between the proposed 'Active River Shingles', 'Upland natural Rock and scree habitats' and 'Rock outcrops, mine spoil and river shingle rich in heavy metals' would suggest the need to review the scope and focus of these three proposals. Renaming the last of these as Calaminarian grasslands would help reduce potential confusion with the 'post-industrial sites' proposal. Similarly, it would allow the scope of the post industrial sites proposal to include wastes such as pulverised fuel ash, generally high in boron, without confusion with mine spoils rich in heavy metals.

Comments provided by David Knight, 13/04/06

3.6 Traditional orchards

P16 There is some inevitable potential overlap with/inclusion of other priority habitats, including semi-natural grassland, wood-pasture, woodland, hedgerows and hedge trees. The scope and limits of the habitat need to be clearly defined, as does the separation from other 'non-priority' orchards. *Comments on this particular point are invited.*
 Because the proposed type is a subset of all orchards, a qualifier to the name is proposed, i.e. 'Traditional orchards', although 'Orchards of high (nature) conservation value' may be considered more meaningful. *Comments on this point are invited.*

English Nature welcomes the supportive assessment made by JNCC on the case for including traditional orchards on the list of national priority habitats. It is worth noting that the habitat is already recognised in a number of Local Biodiversity Action Plans.

1. The strong evidence for the biodiversity interest of traditional orchards is presented in the case but interestingly is being added to all the time, for example a record of a provisional Red List fungus, *Leucoagaricus barssii*, has recently be reported from a cherry orchard in Kent, while the potential importance of traditional orchards for the severely declining lesser spotted woodpecker is becoming clearer, based on European work identified since the case was made. A EN/RSPB pilot study in the Wyre Forest area this year should help us understand the significance of orchards for this species in the UK.
2. With regard to overlap with other habitats, this issue is shared with wood pastures and parklands (see Annex 1 comments on the latter habitat definition by Dr Keith Kirby), given

that both are structural types. It is important to keep focussed on the habitat complex character of both habitats to avoid falling into the trap of dividing up the landscape into "boxes" for our convenience, thus producing divisions which militate against wildlife species that depend on several "boxes", and which need integrated conservation action. The "box-like" approach of the current BAP is one of its major weaknesses. That said, a simple, mappable definition of the traditional orchard habitat can be derived, which will pave the way for production of inventories of the habitat.

3. The name of the priority habitat suggested is one which has wide currency in the conservation and agricultural sectors and is a neater label than 'Orchards of high (nature) conservation value'.

Comments provided by Heather Robertson, 12/04/06

3.7 Other potential terrestrial habitats

3.7.1 Field banks

P17 Despite not receiving a formal submission for field banks, there is clear support for them as an important habitat in Wales and from Cornwall County Council. They certainly seem worthy of proper consideration, at least so that they are recognised as an important landscape feature capable of supporting significant areas of recognised priority habitat. Even if field banks do not merit treatment as a separate priority habitat, they could be recognised as part of any action plan directed at field boundaries (including hedgerows) or, at the very least, as an important feature in the definition of certain priority habitat types. *Comments on these points would be useful.*

separate priority habitat, but agree that, at least, field banks should be given proper consideration for priority listing as part of the current review. The Hedgerow HAP Group has considered including field banks within the remit of the HAP and has concluded it would best be treated separately from hedgerows.

Comments provided by Gavin Measures, 12/04/06

3.7.2 Roadside verges

P17-18 Like field banks, road verges are clearly a landscape feature of some importance. They can certainly support extensive amounts of priority habitat types, particularly unimproved, infertile, species-rich grassland. Particularly in intensively farmed lowland areas, road verges can be the single most important location for these habitats and associated species, hence the development of specific action plans in many local BAPs. Roadside verges should, at least, be given recognition within the definition of relevant priority habitats. They should be identified as part of any action plan directed at field boundaries in general or any associated species or habitat. Such action could include: best practice guidance on roadside verge management for biodiversity; mechanisms for information exchange between roadside verge managers; and specific agri-environment guidance for roadside verge management and enhancement. *Comments on these points are invited.*

We recognise the value of road verges as part of the lowland grassland habitat resource, and also recognise the urgent need for improving road verge management on botanically-important verges. We have an open mind on the best way forward for road verges in terms of HAP, but agree that, at least, road verges should be given recognition within the definition of relevant priority habitats. The issues around verges are somewhat different to unimproved grasslands as they, unlike the latter, are seldom managed as part of agricultural holdings. What is probably required is a national roadside verge initiative where the Association of Local Government Ecologists, the Wildlife Trusts and LBAPs could be influential.

Comments provided by Richard Jefferson, 11/04/06

3.7.3 Arable land

P18 It is concerning that the current and proposed new definition explicitly for field margins excludes whole-field options from the priority habitat definition, albeit that their value for wildlife is acknowledged and the associated HAP Group intends to review their status in due course. This review is very much endorsed. BAP should certainly afford due consideration to all arable land that meets the criteria for priority status, even if delivery mechanisms continue to focus on the margins of fields. *Comments on these points are invited.*

Please refer to comments for Cereal Field Margins HAP (section 4.3)

3.7.4 Scrub and treeline vegetation

P19 As in the earlier gaps review, it is recommended that scrub habitats should be dealt with as an integral component of the various woodland, coastal, grassland, wetland, heath, rock and hedgerow priority habitats, rather than being considered separately. This should be addressed through the habitats manual being developed by JNCC. The conservation value of scrub as a structural component of these priority habitats also needs to be fully acknowledged in relevant Habitat Action Plans. It would be desirable to produce a guidance note regarding scrub conservation and management issues which could be circulated to all relevant HAP Steering Groups. *Comments on these points are invited.*

Specific concern was expressed by the Montane Scrub Action Group that upland scrub types are not covered sufficiently in existing upland/woodland priority habitats. Montane willow scrub is specifically included within the proposed Mountain heaths priority habitat (Section 5.1). Treeline scrub/Krumholtz vegetation is a high priority for restoration and it is recommended that it should be clearly encompassed within relevant priority habitats, such as Upland birchwoods and Native pinewoods. Concern has also been expressed about the status of juniper scrub if juniper is removed from the priority species list as a consequence of the current species review. *Comments on these points are also invited.*

(as in the earlier review) that scrub habitats should be dealt as an integral component of the various priority habitats with which it forms a mosaic, rather than being considered separately. We also note that montane willow scrub is specifically included within the mountain heaths priority habitat proposal.

The needs of scrub should be fully acknowledged within the relevant Habitat Action Plans and we particularly welcome the proposal by JNCC for the development of the BAP Habitats Manual and guidance note regarding scrub conservation and management issues which could be circulated to all relevant HAP Groups.

We do have concerns about the status of juniper scrub if juniper is removed from the priority species list as a consequence of the current species review. We need to ensure the conservation needs of juniper scrub are being adequately addressed through existing Habitat Action Plans (e.g. lowland calcareous grassland and woodland HAP types).

Comments provided by Gavin Measures, 12/04/06

4.0 Changes to existing priority habitats

4.1 General issues

P20 Several consultees took the opportunity to propose amendments that were considered to be beneficial using the forms provided. These included several significant changes, mostly arising as a consequence of the 2005 targets review, which are analysed below (Sections 6.2 to 6.6). Various smaller points of clarification or amendment also came to our attention, e.g. the need to stress the importance of disturbed ground in various habitats; and proposed minor modification of the Reedbed definition. It is also known that there are a range of other points which need to be resolved for individual priority habitats, such as where the published HAP description is insufficiently clear or ambiguous and is being interpreted in different ways. There are also minor changes which would be needed as a consequence of the new types proposed, e.g. to the lower size limit of lake types, see Section 4.4. Other changes are recommended in this review (see Sections 4.5. and 5.7). It is proposed that these points are all addressed through the BAP Habitats Manual which JNCC is currently developing, rather than resolving them through this review (see Section 3.2, final bullet point). *Comments on this proposed approach are invited.*

We agree that where there are only minor amendments being proposed to the existing priority habitats (e.g. lowland calcareous grassland and lowland heathland) these should be addressed through the BAP Habitats Manual being developed and not through the current habitat list review. However, there has been several significant changes proposed for a number of plans (e.g. ancient and species-rich hedgerows, cereal field margins and woodland priority types) as a consequence of the 2005 targets review, which we feel should be addressed through the current review due to their wider implications.

We also welcome the proposal by JNCC for the development of the BAP Habitats Manual, within which a comprehensive and systematic review would be made of the scope of priority habitats. We would recommend that there is a clear timetable outlined for the completion of the BAP Habitats Manual and that the HAP Groups and the Country Agencies are fully involved in this process.

Comments provided by Gavin Measures, 12/04/06

4.2 Ancient and/or species-rich hedgerows

P21 There are several points of concern about the proposed extension of the priority habitat. The new definition encapsulates virtually all hedgerows in the countryside, not a prioritised sub-set within this major habitat type, and thus could be seen as inconsistent with other habitats. Although the proposal highlights several improvements that would result for nature conservation, we still consider that the existing sub-set tends to support the majority of the relic (woodland/grassland) species associated with hedgerows. It is arguable how well the additional hedgerow resource which it is proposed to include would meet the criteria for new types; the main criterion which would be relevant is that relating to key species assemblages, and some evidence is presented for various BAP priority faunal species which indicates that hedge structure or the presence of particular woody species is the critical issue, rather than antiquity or species-richness. Although several policy instruments do not isolate ancient/species-rich hedgerows from other hedgerows, and monitoring of ancient/species-rich hedgerows in isolation is problematic, it would be inconsistent to base the priority habitat definition on such considerations of convenience rather than importance for nature conservation. There are specific concerns about including hedgerows in certain areas on the basis of species consider to be native or long-established elsewhere in Britain, e.g. beech hedges in Scotland. If it is accepted that the future action plan could be wider in scope than the priority habitat, does the proposed change go beyond what could be considered to be a priority? *Comments on these particular points are invited.*

English Nature notes the JNCC's comments on the proposal to widen the definition of hedgerows beyond ancient and / or species-rich hedgerows. The proposal has the support of the statutory conservation agencies in the UK, i.e. English Nature, The Countryside Council for Wales, and Scottish Natural Heritage, as well as support from the Department for Agriculture and Rural Development Northern Ireland and the Department for the Environment, Food and Rural affairs, and other members of the HAP group.

1. Consistency of approach

The Broad Habitat to which hedgerows belong is 'Boundaries and linear features'. Hedgerows are specified as one element making up this habitat, according to the NBN Habitat Dictionary, along with others such as walls and dry ditches and verges of roads and railways. Identification of hedgerows as defined in the proposal as a priority within this Broad Habitat is entirely consistent with the relationship of other priority habitats to Broad Habitats, such as Lowland Meadows within Neutral Grasslands and Lowland Acid Grasslands within Acid Grasslands.

2. Biodiversity of hedgerows

The JNCC puts weight on relic species, however the biodiversity role of hedgerows is much wider than acting as a relic of past species' distributions. These relic species, floristically at least, do not feature among the most 'important' species associated with hedgerows, as they are neither BAP priority, or rare and protected, in contrast to, for example, Plymouth pear.

The structural role of hedgerows, along with their composition of predominantly native or archeophyte woody species, is of major significance, at the individual hedgerow scale, and at the landscape scale, because of the connectivity of the habitat. The latter characteristic is a unique feature among the priority terrestrial BAP habitats and is of particular importance for priority species such as greater horseshoe bats and dormice. To further illustrate the value of such hedgerows, attached to these comments is a list of important hedgerow species, including priority BAP species, a diagram illustrating the significance of hedgerow structure to many of these species, and supporting references is attached (see attached annexes 3-5).

3. Policy relationships

The proposal links to the wider land use policies that post-date the original HAP. Conservation policy reflects the value placed on particular features, as it is geared to safeguarding them. At the highest level, Article 10 of the European Habitats and Species Directive and the European Community's Biodiversity Action Plan for agriculture make explicit reference to the importance of field boundaries. At national level policy measures such as cross-compliance and agri-environment incentives also address the broader definition of hedgerows, rather than ancient and / or species-rich hedgerows. In this sense, policy makers have recognised the significance of a wider set of hedgerows before the formal BAP process, which now needs to catch up by introducing a revised definition.

4. Separation of priority hedgerows within the HAP

Any attempt to identify a sub-set incorporating 'ancient hedgerows' within the HAP seems as doomed to failure as the previous definition of the habitat. Apart from the confusion and lack of positive outcome consequent upon making such a sub-division, the biodiversity case for including the hedgerows specified in the revised definition is considered sufficient justification for treating all these hedgerows as priority. Similarly, the concern about 'native' status in different parts of the country, aside from being extremely difficult to establish for some species, belies the planted origin of most of the abundant woody hedgerow species, and even some of the less common species, which cannot be considered to have a pristine 'native' distribution in hedgerows anywhere.

5. Summary

English Nature supports the HAP group's proposal to widen the definition of the priority hedgerows and pursue their conservation within a revised Hedgerow HAP.

4.3 Cereal field margins

P22 The submission proposes a change in the name of the priority habitat to Arable Field Margins, and some refinements to the definition.

The proposed name change for the priority habitat is sensible given the proposed change to the definition, i.e. that the priority habitat should be extended to include field margins set against all (short-term) arable crops. Even so, the habitat definition would benefit from some clarification. More pertinent, however, is that the refined definition is a general description of arable field margins linked to the scope of the current HAP. It does not seem to explicitly consider or define nature conservation priorities or priority habitat areas in arable landscapes, which is also apparent in the existing habitat definition. It would probably not meet the criteria for new types.

Text is, encouragingly, provided at the end that outlines the actual priorities, but only as a longer-term aspiration for the group to consider at a future review. Our recommendation is that this should be done now rather than deferring it for an indefinite period.

With regard to this later definition, greater consideration ought to be given to a wider range of declining, threatened and/or vulnerable species and habitats associated with arable areas, including certain rare and threatened open vegetation communities described in the NVC as types OV1-6 and OV16-17 (see Section 5.7.3). *Comments particularly on these last two points are invited.*

1. Timescale of BAP review of arable habitats

English Nature, as a member of the Habitat Action Plan Steering Group for Cereal Field Margins, recognises the need to assess the status of the arable in-field habitat as well as field margins, but in the timescale of the current review the Group was not able to complete this evaluation. English Nature understands that the assessment is planned to occur within the next 5 year target period. However, the anomaly of crop-type in the name of the habitat and the focus of the existing Cereal Field Margins HAP have been addressed, so that the definition is clarified to cover arable field margins, and much greater emphasis is put on quality of margins, through targets for margin types, to conserve the full range of biodiversity associated with them.

2. The rationale for the proposed revision of the definition

The opportunity to correct the anomaly of 'Cereal' rather than 'Arable' field margin for the HAP was not considered by the HAP group as a reason for a full-scale assessment of the criteria to justify the habitat as a whole as a priority. The comment from JNCC that it would not meet the present criteria thus seems poorly founded. The evidence base for the biodiversity value of field margins in arable landscapes is legion, and they play a crucial role in conservation of priority species including farmland birds and arable plants, which have suffered some of the largest declines among the UK's biodiversity. In fact, they are the most recognisable facet of the arable landscape that retains biodiversity value, with in-field values being much less securely based until the recent introduction of in-field conservation measures such as skylark plots and over-winter stubbles. The attention given to field margins through recognition as a priority in the original BAP thus seems justified, while accepting that it is now appropriate to consider the in-field habitat as well.

3. Practical issues in habitat definition

Habitat definitions have to be practical as well as reflecting the biodiversity associated with them. While basing definitions purely on the occurrence of key species might seem attractive, these are not likely to be usable in practice, especially where habitat re-creation is planned and wide-scale monitoring required. In a landscape as dynamic as arable, structural/management habitat types are likely to be the most useful. However, species

information can be used to target action on these types into particular geographic areas, even if the exact locations of species cannot be pinpointed, e.g. identification of Joint Character Areas with high diversities of arable plants, where cultivated, un-cropped margins would be a priority for establishment. Integration of SAPs and the HAP is of vital importance in this regard.

4. The role of organic farming

The position of organically-managed margins seems somewhat anomalous at present when considered against conservation headlands and un-cropped / un-harvested margins on conventional farms. Organic Entry Level Scheme options include several relevant to field margins, which should definitely be included in the HAP, though surprisingly the options do not include an un-cropped, cultivated margin option as an equivalent to EF11 on conventionally farmed land. There would likely be benefits to having this option in OELS, to allow arable plants to grow without competition from the crop or weeding pressure. In HLS an un-cropped option seems to be available on both organic and conventional farmland.

While most margin types have conservation objectives as the primary rationale for their retention and creation, conservation headlands on conventional farmland and organic arable land have dual outcomes, both a crop and potentially some biodiversity benefit. For conservation headlands, application of fertilisers is allowed in some types of headland, as well as weed control of problem weeds (and the option is rotational), while organic cropping involves other methods of weed control and sometimes application of organic-approved fertilisers or pest control compounds, along with crop rotation, e.g. with grass. The biodiversity associated with these types of management is variable depending on local management employed. However, the evidence for the biodiversity value of organic arable shows that in most cases greater biodiversity, both infield and on the margins, is associated with such management compared to conventional farming. The inclusion of organic arable should be considered in the planned wider assessment of arable biodiversity.

In terms of the current margin types, organic, cropped, margins could be considered as an interim measure, although the spatial definition becomes tricky here as the whole field is in the same management. However, there is evidence that organic margins are richer in biodiversity than organic in-field, and at least should figure in the current target revision. For target purposes an arbitrary 6 m margin width could be adopted, calculated against an “average” field size and the area under organic arable farming systems. This area is likely to be too small to be picked up in Countryside Survey samples in reasonable numbers, and organic arable area figures would need to be used as a supplement to Countryside Survey to monitor targets, ideally with some field sampling to monitor biodiversity.

Comments provided by Heather Robertson, 12/04/06

4.4 Lowland wood pasture and parkland

P22 The submission proposes the removal of the ‘lowland’ element from the existing name of the priority habitat, concomitant with an extension of the definition to include suitable wood-pastures and parkland in upland as well as lowland situations.

As the Lead Agency for lowland wood pasture and parkland HAP, we endorse the proposal to remove the ‘lowland’ element from the existing name of the priority habitat and the extension of the habitat definition to include suitable wood-pastures and parkland in upland as well as lowland situations.

The chief concern here seems to be the question of overlap with the other woodland types. This situation is not substantially changed by the extension to the uplands.

The nature of wood-pasture is that it does overlap various other woodland and non-woodland types as defined by their vegetation. The Wood-Pasture Group recognises this and is not aiming to 'take-over' all other woods etc. We are concerned that there should be greater recognition of where grazing is a positive element in management for biodiversity in woodland systems whether upland or lowland. The action should be determined by the details of the particular site. Where it subsequently gets recorded is more a matter of bureaucracy rather than substance, as long as particular actions are not double counted.

I attach as Annex 1 an amended version of the introduction to the original plan to allow for incorporation of upland examples. This would appear to be the sort of minor change set out at the bottom of page 5 that does not need the approval of the UK Biodiversity Partnership. Annex 2 is a longer explanation of what the group understands by wood-pastures, but is not intended as a substitute for the short version currently in the plan.

Comments provided by Keith Kirby, 12/04/06

4.5 Lowland calcareous grassland

P23 The proposed refinement to the definition of the priority habitat is clear. It is based on new knowledge of the distribution of particular NVC calcareous grassland types above/below the limit of agricultural enclosure. The amendment has the support of all the main inter-agency grassland expert groups.

This is a relatively minor, technical change, which helps to clarify/improve the existing definition. It will not result in any change to the overall scope of existing priority habitats. It does, however, require that the Upland calcareous grassland priority habitat is accordingly redefined. *Comments on this point are invited.*

We agree with the proposed change to the definition to include CG10. This view is also shared by the Lowland Grassland LCN.

Refinement to the priority habitat definition will not require upland calcareous grassland priority habitat to be redefined. In essence CG10 above the upper limit of agricultural enclosure will still be counted as upland calcareous, whilst CG10 below the limit of agricultural enclosure will now be counted as lowland calcareous grassland.

Comments provided by Richard Jefferson, 11/04/06

4.6 Lowland heathland

P23 The proposed refinement to the definition of the priority habitat is generally clear. It represents only a minor change, which helps to clarify/improve the existing definition, and will not result in a significant change to the scope of the existing priority habitat. The proposed amendment appears to attract support from the Lowland Heathland HAP group. It is not clear what view other groups take, in particular the Lowland Grassland HAP group.

Although the proposed definition would benefit from further precision, particularly with regard to the spatial and temporal occurrence of non-Ericaceous vegetation with lowland heathland sites, there is no suggestion that the proposal goes beyond what ought to be included in the priority habitat. *Comments on this point are invited.*

We agree that using the Phase I definition to clarify the boundary between lowland heathland and lowland grassland makes sense - i.e. <25% dwarf shrub cover = grassland; more is heathland. This view is also shared by the Lowland Grassland LCN and Grassland HAP Group.

With reference to the second point concerning the definition of lowland heathland, we have provided some further changes. It has been suggested to add relevant NVCs and characteristic species, but since the use of this definition is not clear we have only made some minor amendments at this stage (see below). We expect to provide a full habitat definition for lowland heathland as part of the Priority Habitats Manual being developed by JNCC.

'Lowland heathland is a broadly open landscape on impoverished, acidic mineral and shallow peat soil, which is characterised by the presence of plants such as heathers and dwarf gorses. It is generally found below 300 metres in altitude in the UK, but in more northerly latitudes the altitudinal limit is often lower. Areas of heathland in good condition should consist of an ericaceous layer of varying heights and structures, plus some or all of the following additional features, depending on environmental and/or management conditions: scattered and clumped trees and scrub; bracken; areas of bare ground; areas of acid grassland; lichens; gorse; wet heaths, bogs and open water. Lowland heathland can develop on drift soils and weathered flint beds over calcareous soils (limestone or chalk heath). Lowland heathland is a dynamic habitat which undergoes significant changes in different successional stages, from bare ground (e.g. after burning or tree clearing) and grassy stages, to mature, dense heath. These different stages often co-occur on a site. The presence and numbers of characteristic birds, reptiles, invertebrates, vascular plants, bryophytes and lichens are important indicators of habitat quality'.

Comments provided by Isabel Alonso, 11/04/06

4.7 Native woodland

P23 There has been some debate about combining the existing native woodland types into a single 'native woodland' type, but it is clear that the consensus view as reflected by the proposal is to retain the existing priority woodland type subdivisions. This is supported as they are sufficiently extensive, distinctive and individualistic in terms of their treatment and conservation, to merit recognition as individual priority habitat types. *Comments on this point of view are invited.*

English Nature supports the proposal to retain the separate priority woodland habitats within a single native woodland framework.

1. The UK Native Woodland Habitat Action Plan Group (UKNWHAP) has debated the future structure of the native woodland Habitat Action Plans (HAPs) in the light of the current review of targets. With the two new HAPs (Lowland Mixed Broadleaves and Birch in Scotland) (not yet formally published) almost the full range of native woodland now falls within a HAP.
2. Bringing together the existing separate 7 native woodland plans within a single framework would provide greater simplicity, especially for target setting and reporting, but retaining the ability to monitor and set targets at the level of priority woodland type. This proposal is sufficiently flexible to allow country priorities to be addressed, but for UK BAP reporting purposes data can be aggregated up to UK level.
3. In order to track progress of each **priority woodland type** throughout the UK it is important that monitoring systems in each country are still be capable of estimating status and trend by each individual type whether or not individual quantitative targets are set for them. This will allow policies and programmes to be tailored in future so that incentives and advice are achieving the desired balance between woodland types and to safeguard rarer types.

Comments provided by Gavin Measures, 12/04/06

Annex 1. Minor changes proposed to Biological Status section of plan (Wood-Pasture and Parkland)

- 1.1.1 Wood-pastures and parkland are the products of historic land management systems, and represent a vegetation structure rather than being a particular plant community. Typically this structure consists of large, open-grown or high forest trees (often pollards) at various densities, in a matrix of grazed grassland, heathland and/or woodland floras.
- 1.1.2 There are no reliable statistics on the extent of the overall resource, nor on historical and current rates of loss or degradation of this type of habitat. The figure of 10-20,000 ha currently in a working condition given in the habitat statement of the UK Biodiversity Steering Group report is the current best estimate. This habitat is most common in southern Britain, but scattered examples occur throughout the country for example Hamilton High Parks and Dalkeith Oakwood in Scotland. **Recently it has been recognised as also being widespread formerly in the uplands.** Outgrown wood-pasture and mature high forest remnants (virgin forests) occur in northern and central Europe, but the number and continuity of ancient (veteran) trees with their associated distinctive saproxylic (wood-eating) fauna and epiphytic flora are more abundant in Britain than elsewhere. Parklands and wood-pasture may also be of interest for bats and birds and may preserve indigenous tree genotypes. These areas are outstanding at a European level.
- 1.1.3 These sites are frequently of national historic, cultural and landscape importance. Some, but not all, of the individual habitat components (lowland beech and yew woodland, lowland heathland, lowland dry acid grassland) are biodiversity action plan priority habitats in their own right. Requirements of these plans will need to be given due regard during implementation.
- 1.1.4 Included in this plan are:
- i. Wood-pastures and parklands derived from medieval forests and emparkments, wooded commons, parks and pastures with trees in them. Some have subsequently had a designed landscape superimposed in the 16th to 19th centuries. A range of native species usually predominates amongst the old trees but there may be non-native species which have been planted or regenerated naturally.
 - ii. Parklands with their origins in the 19th century or later where they contain much older trees derived from an earlier landscape.
 - iii. Under-managed and unmanaged wood-pastures with veteran trees, in a matrix of secondary woodland or scrub that has developed by regeneration and/or planting.
 - iv. Parkland or wood-pasture that has been converted to other land uses such as arable fields, forestry and amenity land, but where surviving veteran trees are of nature conservation interest. Some of the characteristic wood-pasture and parkland species may have survived this change in state.
- 1.1.5 Not normally included in this plan are:
- i. Upland sheep-grazed closed-canopy oak woodland, **derived from coppice**, or Caledonian pine forest (see the respective plans for these habitats) **although in some cases grazing may be part of the desirable management approaches for these woods.**
 - ii. Parklands with 19th century origins or later with none of the above characteristics.
- 1.1.6 In terms of the National Vegetation Classification (NVC) of plant communities lowland wood-pastures and parkland are most commonly associated with W10 *Quercus robur* - *Pteridium aquilinum* - *Rubus fruticosus* woodland, W14 *Fagus sylvatica* - *Rubus*

fruticosus woodland, W15 *Fagus sylvatica* - *Deschampsia flexuosa* woodland and W16 *Quercus* spp. - *Betula* spp. - *Deschampsia flexuosa* woodland, although others may occur. Upland examples may show more resemblance to W11 and W17 woodland types. In addition the more open wood-pastures and parkland may include various scrub, heathland, improved and unimproved grassland NVC communities.

Annex 2. Additional explanation of what is meant by Wood-Pasture

Scope. This definition was produced for the Advisory Group for the Parkland and Wood Pasture HAP by the Definitions Sub-Group Meeting. The terms of reference were to produce: *'a practical set of working definitions for different types of wood-pasture systems (both upland and lowland) to guide implementation of the HAP'*.

It can include parkland although this can usually be defined by its distinctive features involving enclosure of a set area to maintain deer or for landscape effect. This definition is intended to mainly cover semi-natural wood pastures on unenclosed rangeland, relics of these and other similar habitats. In recent years it has become increasingly clear that wood pastures occur and occurred much more widely and in more varied forms than had previously been widely appreciated. These are linked by some basic features and are rich in rare and declining species but can be found in many different landscapes. As such there is a need for a loose definition that can accommodate very different types of wood pasture.

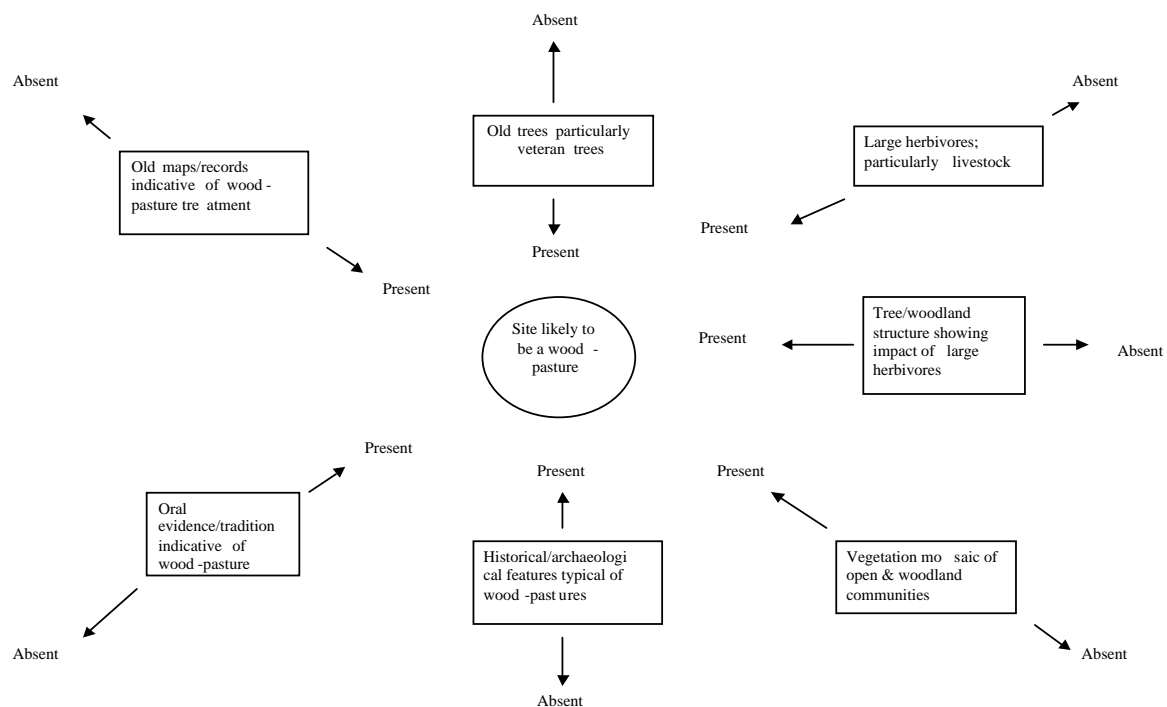
Synonymy & the Problem. Wood pasture and pasture woodland are taken to be synonymous here. This has not always been so, the latter term has been used to cover both trees and shrubs over pasture (savanna) and the denser cores of trees over grazed woodland communities (grazed high forest), this structure encourages the survival of rich epiphytic lichen floras. The New Forest exemplifies this structure, which is produced by patchy natural regeneration in the presence of grazing. Many definitions of wood pasture confine it to savanna, regarding all closed canopy woodland as wood, anciently grazed or not. Open savanna is a more conducive habitat for warmth loving dead wood invertebrates than for lichens and the pure savanna habitat is typical of wood pasture suffering from regeneration failure and planted parkland. The inclusion of the New Forest within the HAP, however means that any definition based on pure savanna habitat with all closed canopy woodland being excluded as wood is untenable.

Definition. Wood-pastures are areas that have been managed by a long-established tradition of grazing allowing, where the site is in good condition, the survived of multiple generations trees, characteristically with at least some veteran trees or shrubs. The tree and shrub component may have been exploited in the past and can occur as scattered individuals, small groups, or as more or less complete canopy cover. Depending on the degree of canopy cover other semi-natural habitats, including grassland, heath, scrub etc may occur in mosaic with woodland communities. While oak, beech, alder, birch, ash, hawthorn, hazel or pine are often dominant, a wide range of other tree and shrub species may occur as part of wood-pasture systems.

The following diagram may help judge whether a site is/was a wood-pasture. Wood-pastures in good condition are likely to have most factors scoring towards the central circle. Sites with a wood-pasture history (relic wood pastures) that have not been managed as such recently may be lacking some of the characteristic features. Landuse is fluid and just as relic wood pastures are evolving into different woodland types, other woodlands, or formerly open ground, may be evolving towards wood pastures with increases in grazing pressure or tree/shrub invasion respectively. Again these will not score as closely to the centre of the diagram.

Boundaries. Some wood-pastures have very clearly defined boundaries; in others it may be difficult to set limits and many may simply be part of a much larger range landscape. In the same way that a mire will be only part of a larger moorland ecology with the heath and grassland on drier ground wood pasture is often intimately linked to non treed land. While it may be pragmatic to distinguish the area that represents the tree component of the wood-pasture from the broader grazing unit, this should not lead to the treed area being regarded as uniquely separate from the rest of the ecological unit.

Consequences. This is intended as a guide to the identification of high quality relic and evolving wood pasture. Identification does not mean that all areas identified as such should be managed as wood pasture but it is vital that its existence is appreciated and the possibility of maintaining or enhancing wood pasture features considered. The positive features of grazing in woodland and the role of wood pasture in planning ecological restoration needs recognition.



Notes (clockwise from top left):

1. Old maps, these are variable across the country, but many do indicate unclosed grazed woodland as different from enclosed woodland, as is seen if one compares known wood pastures with known enclosed woods. A very useful source, especially in the uplands, is the 1st series 6 inch OS maps dating from 1860s & 1870s. At this time most coppices will still be shown as enclosed, any wood shown as unenclosed, with dense stands irregular in shape and with areas of open scattered trees is likely to be an ancient pasture woodland. Enclosed relic stands will, however often have been enclosed in the lowlands by this time.

2. The term veteran tree includes both ancient (massive limb loss and large visible hollows) and post mature trees (or shrubs) (thinning of crown and hollowing starting but not very visible yet). Old trees are a strictly a consequence of wood pasture management and not part of the definition, but they do indicate sites likely to be of great biodiversity interest. The more the better but any are significant.

3. Significant numbers of herbivores must be present in working pasture woodland but these may have been long gone in relic sites. Presence in past can be significant in relic sites, if significant numbers of trees originated under grazing pressure survive.

4. & 5. Structure is a complex factor and can be very different between woods and between regions, but characteristic features are irregular boundaries, very uneven stocking, frequent glades and areas with scattered trees. In healthy and expanding wood pastures scrub and thickets of infilling young trees are also to be expected but are normally patchy in working pasture woodlands, only where all enveloping due to the cessation of grazing are these negative features. Closed canopy stands are also typical in many wood pastures but these will be in mosaics with more open stands, uniform even aged closed canopies are a negative feature, but not closed canopies per se. Non-boundary pollards nearly always indicate grazing but not all pasture woodlands have pollards. Alder pollards are highly indicative of summer grazed upland wood pasture but unprotected Alder coppice on wet soils is characteristic of lowland pasture woodlands. Open grown trees and shrubs are typical but this does not mean just fully open grown individuals but also includes tall partially open grown ones with irregular growth forms in low density grazed high forest. No fixed boundaries with open vegetation.

6. Archaeological features will vary regionally and can include the total absence of features, as in many New Forest pasture woodlands, in particular an absence of boundary banks is a positive feature. Charcoal can be made from pollards or unenclosed Alder coppice, so a few charcoal heaths does not indicate enclosed coppice but a high density may.

7. Useful for 20th century, not usually before this.

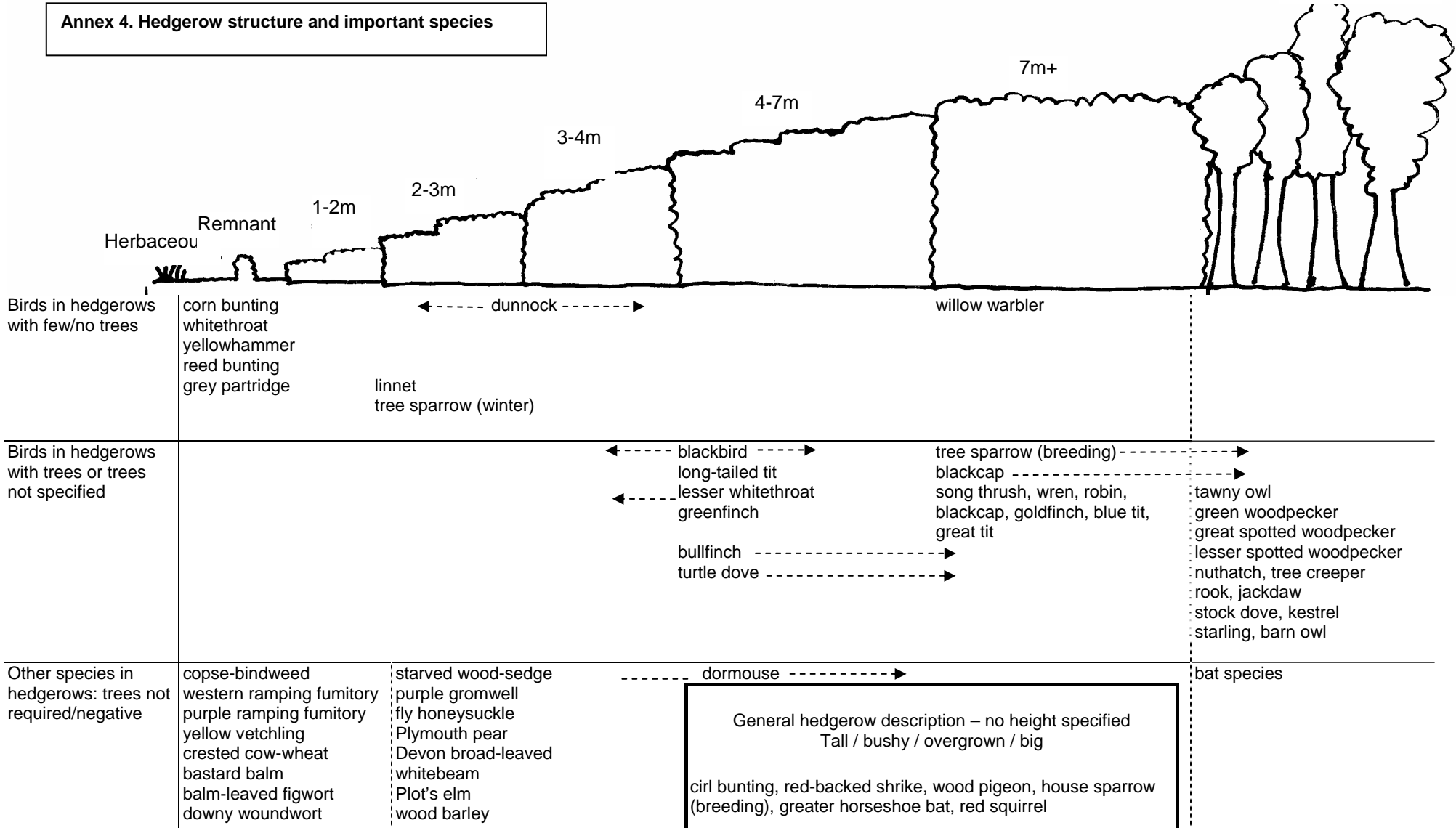
Annex 3. Important hedgerow species: status of species

Mammals		Birds			
Dormouse	BAP	Barn owl	A	Robin	W
Barbastelle bat	BAP	Blackbird	W	Rook	F
Bechstein's bat	BAP	Blackcap	W	Song thrush	BAP, R, W
Pipistrelle bat	BAP	Blue tit	W	Spotted flycatcher	BAP, R, W
Greater horseshoe bat	BAP	Bullfinch	BAP, R, W	Starling	R, F
Lesser horseshoe bat	BAP	Chaffinch	W	Stock dove	A, F
Red squirrel	BAP	Chiffchaff	W	Tawny owl	W
		Cirl bunting	BAP, R	Tree sparrow	BAP, R, F
		Coal tit	W	Treecreeper	W
Stag beetle (<i>Lucanus cervus</i>)	BAP	Corn Bunting	BAP, R, F	Turtle dove	BAP, R, F
Gastrallus immarginatus (beetle)	BAP	Cuckoo	A	Whitethroat	F
Noble chafer beetle (<i>Gnorimus nobilis</i>)	BAP	Dunnock	A, W	Willow tit	R, W
Barberry carpet moth (<i>Pareulype berberata</i>)	BAP	Garden warbler	W	Willow warbler	A, W
White spotted pinion moth (<i>Cosmia diffinis</i>)	BAP	Goldfinch	F	Wood pigeon	F
Buttoned snout moth (<i>Hypena rostralis</i>)	BAP	Great spotted woodpecker	W	Wren	W
		Great tit	W	Yellowhammer	R, F
		Green woodpecker	A, W		
Starved wood-sedge (<i>Carex depauperata</i>)	NR	Greenfinch	F		
Copse-bindweed (<i>Fallopia dumetorum</i>)	NS	Grey partridge	BAP, R, F		
Western ramping fumitory (<i>Fumaria occidentalis</i>)	NS	House sparrow	R		
Purple ramping fumitory (<i>Fumaria purpurea</i>)	BAP, NS	Jackdaw	F		
Wood barley (<i>Hordelymus europaeus</i>)	NS	Kestrel	A, F		
Yellow vetchling (<i>Lathyrus aphaca</i>)	NS	Lesser spotted woodpecker	R, W		
Purple gromwell (<i>Lithospermum purpureocaeruleum</i>)	NR	Lesser whitethroat	W		
Fly honeysuckle (<i>Lonicera xylosteum</i>)	NR	Linnet	BAP, R, F		
Crested cow-wheat (<i>Melampyrum cristatum</i>)	NS	Long-tailed tit	W		
Bastard balm (<i>Melittis melissophyllum</i>)	NS	Marsh tit	R, W		
Plymouth pear (<i>Pyrus cordata</i>)	NR	Mistle thrush	A		
Balm-leaved figwort (<i>Scrophularia scorodonia</i>)	NS	Nightingale	A, W		
Devon broad-leaved whitebeam (<i>Sorbus devoniensis</i>)	NS	Nuthatch	W		
Downy woundwort (<i>Stachys germanica</i>)	NR	Red-backed shrike	BAP, R		
Plot's elm (<i>Ulmus plotii</i>)	NS	Redpoll	A, W		

Bithynian vetch (<i>Vicia bithynica</i>)	NS	Redstart	A, W		
Slender tare (<i>Vicia parviflora</i>)	NS	Reed bunting	BAP, R, F		

BAP = BAP priority species, NS / NR = Nationally scarce/ rare, R = Red list, A = Amber list, F/W = Farmland/ Woodland bird indicator . . . Line of trees

Annex 4. Hedgerow structure and important species



Bithynian vetch
slender tare

Annex 5. Hedgerow structure and important species: supporting references

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Unpublished information

Rare and scarce plants: information from Ian Taylor, English Nature Botanical Service.
Birds: information from Dr Richard Bradbury, Royal Society for the Protection of Birds

Buglife's views on the proposed changes to the list of UK Biodiversity Habitat Action Plans.

Additions

Active shingle rivers

View

We fully support this submission, although we would like to see a clearer definition that includes sandy sediments.

Comments

The habitat title fully inclusive of the priority features. Sand as well as shingle is a critical feature of these rivers. Three/four BAP flies (a crane fly *Rhabdomastix laeta/japonica*, and two stiletto flies *Spiriverpa lunulata* and *Cliorismia rustica*) are associated with the exposed sand rather than shingle and in the last year we have found an astounding six new species to Britain during surveys on this habitat – Active course sediment rivers?

As a dynamic system, the exact position of ERS is liable to move. Whilst there are circumstances where a river may support ERS at a single fairly static place, for the most part ERS is a dot -dash occurrence, and the wave length may vary from fairly compact to highly dispersed. The main sediment source is often the higher reaches (which may qualify as headwaters or not) so division of a river into main ERS presence and no obvious conservation features can be fraught. How extensive must 'significant reaches' of gravel or pebbles bars/bed be, and how 'dynamic' should the river be, for it to meet the definition?

Is there any estimate of the extent of this habitat? Presumably it covers a large number of rivers. Is there a case for limiting the priority habitat to rivers of high ecological quality or conservation value, as in the proposal for ponds?

Riverbanks can be very important invertebrate habitats and a number of the species associated with ERS are found in sediment that will rarely actually be covered with water. Such sediments should be included, but how would the definition be set to include this habitat, and would it exclude wooded or grassy banks? (see also note below about riverbanks).

Headwaters

View

We support this submission.

Comments

The threat is clear and the definition of the habitat to encompass the threats rather than detailed ecological typology is sensible. The Chalk stream and Active sediment river plans could be restricted to cover the non-headwater parts of the relevant systems.

It is a great shame that there was no information presented on the RDB and BAP Priority species present in this habitat. Without this information it is difficult to compare and contrast with the importance of other habitats. Can a list of key species be presented to give the submission more context?

Does the definition adequately cover springs and seepages at the very source of the rivers?

Oligotrophic lakes

View

One of the weaker submissions.

Comments

The 'filling the lake gap' and 'delivering the WFD' arguments are weak. It is a shame that more data on threat was not presented. The balance and importance of the threats does not come out clearly, is the main threat atmospheric pollution? Acidification clearly 'affects' oligotrophic lakes, but does it result in a loss of biodiversity? Which specialist species are disappearing?

Ponds of high ecological quality/conservation value

View

We fully support this submission.

Comments

Should not be called 'Ponds'. 'Ponds of high nature conservation value' would seem to best describe the category and would fit with the terminology used for other BAP habitats.

A habitat exposed to threat and containing an exceptionally large threatened fauna. Shame there is little data on the trend in the habitat, but this will hopefully be resolved if this becomes a BAP.

The aquatic margin, emergent vegetation, drawdown zone and boggy edges of a pond can support key biodiversity and, where this is so, the pond should be included in the definition.

Other river types

View

We would be interested in submissions on other river types or features.

Comments

Bankside faunas can be particularly important, but there is limited knowledge about their distribution or status. This is a habitat comparable to roadside verges in its potential significance to nature conservation

Canals

View

We would not support a submission on canals.

Comments

While some canals are important for biodiversity this is often due to local circumstances and are best catered for through SSSI designation and site management.

Mountain heaths

View

We support this habitat with reservations.

Comments

For the sake of consistency and in light of recent recommendations there is an argument that this habitat should be more tightly defined. The current definition presumably includes vast areas of very degraded habitat? The regeneration of this habitat should add area to the targets, not just quality. A

tighter definition would focus conservation effort on the most critically important areas and would focus regeneration efforts on the damaged areas.

It is a shame that the submission does not quantify or provide estimates for the area of habitat, the proportions of degraded and high quality habitats remaining, or the current trends.

We would support the addition of the words 'and scrub'.

Upland flushes and fens

View

We fully support this submission.

Comments

Conservation priorities have been based almost entirely on flora. Invertebrate evaluation is urgently needed since some important invertebrate communities almost certainly remain unrecognised.

Natural upland rock and scree habitats

View

We do not support this submission.

Comments

High nature conservation value is not enough in itself. There is no decline data presented. The threats to the habitat seem to be weak and are more associated with grazing overspill from nearby upland grazing areas. Area of habitat is, one assumes, quite static? How the quality baseline will be set and monitored is unclear.

Rock outcrops, mine spoil and river shingle rich in heavy metals

View

We do not support this submission.

Comments

The natural formations do not seem to be under threat and the next habitat submission should encompass the relevant brownfield sites. It is not clear if the generic threats to the artificial habitats are causing the declines in BAP species or if there are other factors better addressed with plans for the small number of species of conservation significance specifically associated with the habitat.

The inclusion of river shingle appears awkward. Surely there is a gradient down stream so where is the boundary between rich in heavy metals and not so rich, especially if floristic determinants are absent.

This habitat in itself has limited significance for invertebrate conservation, where there is significance this would be wrapped up in the 'ERS river' proposal or the 'Brownfield' proposal.

Post-industrial sites of high nature conservation value

View

Such habitats have the highest level of threat and arguably the greatest importance to biodiversity of all the habitats submitted. Hence we consider this an urgent habitat to include. However we have some substantial issues with both the name and the definition of the habitat as currently proposed.

Comments

Background

The conservation of Brownfield invertebrates is probably the biggest site level issue facing invertebrate conservation in the UK. As the NGO representing these groups, Buglife has a broad involvement in the issue and a large programme of work focusing on resolving the threats, particularly in the London and Thames Gateway area.

While the essence of the importance of the habitat for invertebrates is captured, the submission lacks some detail and underplays the importance somewhat. At least 40 invertebrate species are wholly confined to brownfields and at least 18 of the BAP Priority invertebrate species have key populations on brownfield sites. Species that are currently on the BAP, or have been proposed for BAP listing due to imminent threats, that are not mentioned in the proposal include:- the Phoenix fly (*Dorycera graminum*), the Distinguished jumper (*Sitticus distinguendus*), the 5-Banded weevil wasp (*Cerceris quinquefasciata*), the Lesser bombardier beetle (*Brachinus sclopeta*), the Saltmarsh shortspur (*Anisodactylus poeciloides*), the Lagoon sand shrimp (*Gammarus insensibilis*), and there will also be a significant number of BAP moths and butterflies on brownfield habitats.

To put the priority of this habitat into context, one site in Essex supports 33 RDB, 105 Nationally Scarce and 5 BAP Priority species, more than the totals occurring on all the sites for several of the other habitats proposed for BAP listing.

Title

It is our view that the current title of this habitat is not ideal. The term 'Post-industrial' is a narrow one that appears to exclude a range of ecologically comparable sites and does not have the same level of awareness or policy underpinning that a number of alternative terms would have. There is a high risk that unless we use the same terminology as the planning and other sectors then we will end up talking at cross purposes and the HAP will be much less effective in securing conservation outcomes.

Excluded from 'post' are habitats such as railway sidings, land within the curtilage of developments and brown roofs, all are perfectly analogous to the early succession habitats that are the priority for action here. Also the term 'post' suggests that there is a historic time frame that we are considering to be a priority (the term may be associated in peoples minds with the industrial revolution). This backward looking ethos may undervalue more recently created habitat and may be less likely to encourage positive planning for such habitats for the future.

Excluded from 'industrial' is land associated with transport, land associated with housing and offices, brown roofs, military sites and dredgings, again a critical part of the resource of threatened habitats that are supporting the endangered fauna.

The term brownfield is in legal terms the same as previously developed and should be used in the title of the habitat.

Definition of the habitat

The following definition of brownfield developed by the National Brownfield Sites Project (2000) is a good starting point:

"A brownfield site is any land or premises which has been previously used or developed and is not currently fully in use, although it may be partially occupied or utilised. It may also be vacant, derelict or contaminated."

For the purposes of Buglife's conservation work a more exact definition of brownfield land is used, to identify the specific types of land which should be included. This expanded definition includes:

"Previously developed or post-industrial land, quarries and extraction pits (both aggregate and non-aggregate), landfill sites, road cuttings, railway cuttings and sidings (including disused lines), disused canals, brown and green roofs, underground (covered) reservoirs, disused sewage works, disused harbours and wharves, spoil (including fly-ash and dredgings), military sites, ex-built sites and derelict buildings with a minimum size of 0.25 hectares."

In our work the following habitats have been excluded: urban gardens and allotments, parks (unless they incorporate previously developed land), amenity grassland, churchyards and cemeteries. These habitats all tend to be very different in nature, are carefully managed, are predominantly grassland, and while they can be of conservation significance, there is relatively little overlap between these habitats and the more classic 'previously developed land' in terms of endangered species present and active threats.

The terms brownfield and previously developed are interchangeable and are the terms used in PPS9, PPG3 and the relevant objectives in the England Biodiversity Strategy. The term post-industrial does not have a firm basis in conservation policy.

Because so many of the habitats (e.g. quarries and firing ranges) are not urban it seems illogical to propose that the habitat is a subset of 'built up areas and gardens', indeed as set out above active gardens are so different from the most important threatened sites that they do not sit well in the same BAP plan.

The 'Correspondence with existing habitat/s' section should recognise that 'Previously developed land/Brownfield land' is a widely recognised and defined land use category, and that there are national and local inventories of this habitat already in existence. The definition could also include Calaminarian grasslands, but it may be that these are better excluded as being 'predominantly grassland' and hence inherently ecologically different.

The criteria for defining the habitat as presented seem a bit back to front, the easiest and most significant factor to assess to establish conservation value is the presence of endangered species, failing that an assessment can be made of the likely value of a site in terms of its potential to support these species. Perversely, sometimes the new sites at the start of their succession are going to make a greater contribution to nature conservation than older sites where the early succession habitat is disappearing. However, this does not mean that all older brownfield habitats are unimportant. Also of significance is the role that that site plays in maintaining meta-populations of invertebrates in a particular area.

We would reword the criteria so as to reflect the real priorities, considering that some BAP species are very common, that some Red Data Book species are no longer Rare, and that there will not be a SoCC list of invertebrates in the foreseeable future :-

Criteria for selection of post-industrial sites of high nature conservation value

The main criteria for selecting post-industrial sites of high nature conservation value are:

1. Presence of a significant population of a species of conservation importance, defined as a highly localised UK or Country BAP priority species; or a genuinely rare Red Data Book or Red Data List species which is part of an assemblage of scarce or threatened species;
2. The potential to support a species of conservation importance as defined under 1 - including:
 - rich and/or large examples of habitats typical of the substrate/edaphic conditions, which demonstrate the characteristic mosaic of bare ground, pioneer communities, flower rich grassland and other habitat patches;
 - sites which have retained areas of bare ground and pioneer communities over an extended period, demonstrating arrested succession;
 - isolated sites in former industrial or urban areas where the habitat was formerly widespread or extensive that may support relict populations or provide stepping stones between other habitats;
 - sites that form or will form a significant meta-population resource, or a resource for a key population of invertebrates nesting elsewhere;
 - sites with the potential to provide habitats that will support large or important populations of locally occurring species.

Including this habitat under the broad category of 'inland rock' is tortuous.

Sites that have already achieved 'nature conservation importance' are often referred to a 'Phoenix sites' to distinguish them from the previously developed land that should fall in the PPG3 definition. Use of the term Phoenix site should be considered in drawing up the BAP.

Extent and threats

The section setting out 'Geographic distribution and extent' does not recognise that there are inventories of previously developed land kept, and although these are insufficient for monitoring the habitat from a nature conservation perspective, they do provide a sound starting point, and are ironically and unusually biased towards the inclusion of the sites at greatest threat. In the Thames Gateway a partnership led by Buglife and EN is carefully defining and mapping the entire resource of previously developed land. To date over 500 hundred sites have been identified and mapped. Ecological surveys will follow in the next two years.

There are a considerable number of additional sites of nature conservation importance that have been partially or wholly destroyed, including:-

Honor Oak Road, Covered Reservoir, Forest Hill, London
Chafford Hundred, Lakeside Thurrock, Essex
Ferry Fields at Tilbury in Thurrock Essex
Coventry Colliery and Homefire Plant
St Clements Church, Thurrock, Essex

And a growing number that are under threat (a couple of which of which may have recently been destroyed) including:-

West Thurrock PFA lagoons, Thurrock, Essex
Sharlston Colliery, Wakefield
Renishaw Iron Foundry, Derbyshire
Rabbit Ings, Barnsley/Wakefield
'Site adjacent to Junction 6 of the M20 Maidstone'
Frome Road, Radstock

Trap Grounds, Oxford
'land adjacent to Tilbury Power Station, Essex'
Radley Lakes, Oxfordshire.

As well as saving existing sites a Brownfield BAP could play an important role in helping to ensure that suitable new habitats were created in the most appropriate areas for the maintenance of biodiversity.

Early succession brownfields are an important mitigation for the impacts of nitrate deposition on other habitats.

Land Restoration Trust

This organisation does not have a track record of protecting or enhancing sites for biodiversity, their involvement and keenness is to be welcomed, but the extent of their involvement should be carefully considered. Whoever the 'champion' may be, it has to be an organisation fully in tune with promoting invertebrate conservation priorities.

Conclusions

1. The habitat should definitely go forward;
2. the term 'post-industrial' is an anachronistic term with a low awareness level with the public and decision makers;
3. the term 'Brownfield land of high nature conservation value' would have much wider significance to the public, planning policy and other sectors and should therefore be used as the title for this habitat type;
4. the above restrictions to the habitat definition should be considered as they have been developed through practical experience of quantifying the habitat;
5. the definition of high quality should focus in on the species of conservation importance that the land supports or could support;
6. the development of a full inventory of 'Brownfield land of high nature conservation value' is already underway for London and the Thames Gateway, a significant part of the UK resource.

Traditional orchards

View

We support this submission.

Comments

How old is 'traditional'? 'Traditional orchards' is a neat phrase for general consumption, but are we saying that all traditional orchards have high conservation value or just a sub-set. The definition should be clarified.

Field banks

View

We would not support a submission on field banks.

Comments

Best delivered through LBAPs or Roadside verges if such a habitat definition met the criteria.

Roadside verges

View

We would be interested in considering a submission on roadside verges.

Comments

The threats and land use definition are clearly defined and coherent, there is good evidence that they are becoming proportionally more important for wildlife, but are also under threat from increasing inappropriate management.

The contribution of road verges to biodiversity conservation needs more focus. In many landscapes road verges are becoming very significant refuge habitats. Botanically there is a clearer picture than for invertebrates, more research is required to establish the significance of this habitat to biodiversity. Their maintenance is a consideration in the climatic change debate.

Arable land

View

We would probably not support a submission on arable land.

Comments

The issue of defining high nature conservation importance would arise and be difficult to resolve. The farmland birds indicator, WFD and relevant SAPs should push arable fields in the right directions. What targets would be set and monitored for the habitat as a whole?

Scrub & treeline vegetation**View**

We would be interested in a submission on Scrub & treeline vegetation.

Comments

In principle we support the view that this habitat should be seen as a feature of other habitats, however, this may need to be carefully monitored to see if this happens. In practice there are many examples where scrub has been removed without sufficient consideration of its value.

Alterations**Ancient and/or species-rich hedgerows****View**

We oppose this proposal.

Comments

It goes against the principle that a habitat should be tightly defined around the biodiversity significance with actions that relate to the improvement of lower quality areas of the habitat being encouraged in the HAP.

Cereal field margins**View**

We support this proposal.

Comments

Not an easy habitat to reduce to high conservation value as it is used by foraging species that may actually be nesting in adjacent habitats. Consider refining definition at next review.

Lowland wood pasture and parkland**View**

We support this proposal.

Comments**Lowland calcareous grassland****View**

We support this proposal.

Comments

Lowland heath

View

We support this proposal.

Comments

However, the new definition is also unsatisfactory as it places too much emphasis on the dwarf shrubs and insufficient on the bare ground. Over 90% of the BAP priority and RDB species on heathland are dependant on bare ground. Is there a heathland that does not contain bare ground? Don't all important heathlands contain significant areas of bare ground? In addition, the paragraph does not recognise or include the heath verge habitat that can be critically important for supporting nectar feeding insects on the heath. We suggest the following amendments :-

'Lowland heathland is characterised by the presence of plants such as heather, dwarf gorses, and cross-leaved heath and is generally found below 300 metres in altitude. Areas of good quality heathland should consist of an ericaceous layer of varying heights and structures with a significant area of bare ground, plus some or all of the following additional features: scattered trees and scrub; heath verge; areas of acid grassland; on rare occasions calcareous grassland with limestone or chalk heath; gorse; wet heaths, bogs and/or open water. The presence and numbers of characteristic birds, reptiles, invertebrates, vascular plants, bryophytes and lichens are important indicators of habitat quality'.

Native woodland

View

We would oppose a proposal to dissolve the priority habitats into a broad BAP.

Comments

Unfortunately the debate about broadening the definition seems to have precluded the identification of additional sub-habitats that would qualify as BAP priority. The most obvious of these being aspen woodland which is a rare habitat and supports several BAP Priority species (e.g. Dark bordered beauty and Aspen hoverfly) and many very rare species.

Jane MacKintosh, Land Use Group, Scottish Natural Heritage

Hedgerows:

The definition of Ancient and/or species-rich hedgerows excluded most Scottish hedges on both the historical and the botanical basis. The proposed new definition (all hedgerows consisting of at least one woody species) is intended to be more inclusive and I am happy to support it. However, the definition of what is a native woody species is contentious since it includes beech and sycamore, two species which have not been considered native to Scotland in the past. I understand that the woodland specialists of the country agencies are also grappling with the problem of how to treat these species so we need a policy which can be applied to all woody habitats.

Grasslands:

The grassland proposals have all been thoroughly discussed by the Lowland Grassland HAP group and the Lowland Grassland LCN so I have nothing further to add on these.

Lynne Farrell, on behalf of Vascular BAP Plant Expert Group

Overview

With consideration of the list of proposed BAP Priority vascular plant species, the Vascular Plant Expert Group can express support for the following proposed new BAP Priority Habitats:

- Oligotrophic lakes
- Ponds of high ecological quality
- Mountain Heaths and Scrub (see additional information below)
- Upland flushes and fens
- Upland natural rock and scree habitats
- Rock outcrops, mine spoil and river shingle rich in heavy metals

Specifics:

- **Mountain Heaths**

We support the proposals for a new priority habitat of mountain heath and welcomes the addition of “and scrub” to the habitat title. Without this qualification, montane scrub and treeline habitats will continue to receive fewer resources and less attention than they deserve and need. *Juniperus communis* is included on the proposed list of vascular plant BAP Priority Species, although the Mountain Heath and Scrub Priority Habitat should make reference to juniper scrub in its description of the habitat.

- ***Epipactis youngiana***

The proposed BAP Priority Habitats ‘Rock outcrops, mine spoil and river shingle rich in heavy metals’ and ‘Post-industrial sites’ mention *Epipactis youngiana* as a key species. The following is a summary of the current understanding on the status of *E. youngiana* and its place within the UK BAP:

The emerging consensus seems to be that because *E. youngiana* is genetically indistinct from *E. helleborine* but can be distinguished morphologically, it is best described as a variety of *E. helleborine*. The *Epipactis youngiana* SAP Steering Group have put forward a grouped species plan in the BAP target review which would cover the *Epipactis helleborine* complex. The proposed group plan would aim to conserve populations of *E. youngiana* and mixed populations of *E. helleborine* and *E. dunensis* (*E. dunensis* possibly being involved in the parentage of *E. youngiana*).

- **Other potential terrestrial habitats**

With respect to field banks and roadside verges we would support the inclusion of these landscape features within the definition of all relevant Priority Habitats. We agree that these features provide interesting and important habitats and as such should specific targets and action could be identified within the relevant HAPs.

We support the proposal to change the name of the Cereal Field Margin Priority Habitat to Arable Field Margins. The definition of this Priority habitat should be widened in step with reviews of Environmental Stewardship, to support and recognise further whole farm options and incentives.

Woodland Trust

General comments

Woodland Trust believe that we shouldn't be ever increasing the number of priority habitats based on slight & individual differences (i.e. traditional orchards and wood pasture), and thereby potentially increasing the divergence of delivery and perpetuating a site centred approach, but rather embracing the commonality between habitats (traditional orchards and wood pasture have far more in common than they do in difference) and therefore increasing the consolidation, widening the definitions of priority habitats, to ensure they embrace the variations. Such an approach, we believe, is the most pragmatic, forward looking approach given the need to make habitats and species resilient to climate change, vegetation dynamics, and ensuring best use of resources that will affect the greatest benefit to the widest possible biodiversity.

Furthermore increasing the number of priority habitats brings with it increasing legislative responsibility, whether this is with an equal number, or fewer consolidated HAPs.

We would certainly support the point, made in the paper, that scrub should form part of the habitat definition of priority open habitats

Specific comments

Table 1. Proposals for new UK priority habitats (terrestrial and freshwater)

Table 1 shows how habitats are becoming increasingly sub-divided (even more habitats in boxes) and will become ever more unwieldy to deliver. For example, our view would be that the rivers and streams priority habitat should have a definition wide enough to accommodate active shingle rivers and headwaters- particularly in the context of such policy drivers as the Water Frameworks Directive and whole catchment planning.

Similarly, whilst we fully support the need to better protect traditional orchards, we would rather this was done by widening the definition of the WP&P priority habitat definition. The two habitats have far more in common than they do in difference.

Table 2. Proposals for changes to existing UK Priority habitats (terrestrial and freshwater)

We support the proposal to change the name and widen the definition of wood pasture and parkland, but would re-iterate our point about widening the definition that much further to accommodate traditional orchards.

3.2. Summary of generic conclusions

First bullet point.....“This first part of the review is being undertaken on the basis that Habitat Action Plans or other future implementation mechanisms could be wider in scope than priority habitats”.

We would support this approach, but would first seek to ensure that existing priority habitats definitions are sufficiently broadened to enable the inclusion of many of these new priority habitat proposals.

4.5.2 Canals

Open water where associated with other priority habitats i.e. fen could be included within that existing priority habitat definition. Just as scrub should become part of open habitat definitions.

5.3 Traditional Orchards

We fully support the need for greater conservation of traditional orchards, but in our view they should be part of the WP&P priority habitat.

5.7.4 Scrub & treeline vegetation

Certainly, we would support getting scrub seen as part of all the priority open habitat definitions. We believe this would be a major step forward in terms of getting habitats out of boxes. Scrub is part of all habitats and part of the vegetation dynamics of all habitats.

Wood pasture

In terms of Wood pasture we are happy with the proposed changes and have been involved in the process.

Native woodland

In terms of native woodland we fully support bring the existing priority habitats into one framework and producing targets for one native woodland HAP. In terms of the different priority habitats this is a difficult one and one where much discussion has already taken place. You will have realised the problem at UKNWHAP meeting, the difficulty of reporting against the existing priority habitats. Also of course given the nature of devolution and forestry, there are differing views in different countries and clearly you need a UK consensus. We would in principle certainly support one native woodland priority habitat, and believe that reporting against such a priority habitat would be much more straight forward than currently. In our view vegetation dynamics and climate change makes a bit of a mockery of dividing habitats. In practice even experienced surveyors find it difficult to distinguish between woodland type, particularly where they meet, and in many woods several woodland types might exist together.

One concern we did have was the issue of retaining the ability to report against priority habitats, and whether this is a requirement, or something a country can do if it chooses.

Plantlife

- **Oligotrophic lakes**

Plantlife supports the inclusion of oligotrophic lakes as a Priority Habitat, particularly given its importance to stoneworts including UK BAP Priority Species (e.g. *Nitella gracilis*). Prioritising this habitat within the UK BAP programme is a step in the right direction to ensure that the threat of eutrophication with this habitat is directly tackled through policy and management, and monitored accordingly.

- **Ponds of high ecological quality**

Plantlife supports the inclusion of ponds (of high ecological quality) as a Priority Habitat. A good range of BAP Priority Species occur in ponds which this Priority Habitat would describe –including *Ranunculus tripartitus*, *Pilualria globuilfera*, *Damasonium alisma*, and *Tolypella intricata*. It would be crucial that this Priority Habitat be cross-referenced with other Priority Habitats of which such ponds are a microhabitat feature (e.g. lowland heathland).

- **Mountain Heaths (and scrub)**

We support the proposals for a new priority habitat of mountain heath and welcomes the addition of “and scrub” to the habitat title. Without this qualification, montane scrub and treeline habitats will continue to receive fewer resources and less attention than they deserve and need. As Lead partner for *Juniperus communis* we believe it is important that its BAP Priority Species status is retained, however, juniper should be linked to all the relevant Priority Habitat within which it occurs: mountain heath and scrub, upland heathland, upland birchwoods, native pine woodlands, coastal sand dunes, and lowland calcareous grassland.

- **Upland flushes and fens**

Plantlife supports the proposal for this botanically important upland habitat to be included as a Priority Habitat, and would agree with specifically including ‘flushes’ in the title as this provides a better definition of the habitat described.

- **Rock outcrops, mine spoil and river shingle rich in heavy metals and Post-industrial sites of high conservation value**

The consultation paper states that the post-industrial sites proposal does not include mine spoil habitats, however, *Epipactis youngiana* for which Plantlife are Lead Partner is a plant of heavy metal-rich mine spoils and is included as a key species in both proposals. We are supportive of proposals for heavy metal rich spoils to be prioritised as a habitat within BAP, and more generally for post-industrial sites to be a BAP Priority Habitat (particularly for their importance to lower plants such as *Tortula cernua*, a UK BAP species). Plantlife would be supportive of including heavy metal-rich spoils within the **Post-industrial sites of high conservation value** Priority Habitat definition.

See Annex I for information on the status of *Epipactis youngiana* from the UK Steering Group. See Annex II for original proposal from Plantlife for BAP status for ‘outcrops and mine spoil rich in heavy metals’ in 1999.

- **Traditional orchards**

Plantlife supports this proposal, specifically from a lower plant and mycological perspective. For example, *Sarcodontia crocea*, is a newly proposed BAP Priority Species restricted to old orchards.

- **Other potential terrestrial habitats**

With respect to field banks and roadside verges we would support the inclusion of these landscape features within the definition of all relevant Priority Habitats. We agree that these

features provide botanically interesting and important habitats and as such should specific targets and action could be identified within the relevant HAPs.

We support the proposal to change the name of the Cereal Field Margin Priority Habitat to Arable Field Margins. The definition of this Priority habitat should be widened in step with reviews of Environmental Stewardship, to support and recognise further whole farm options and incentives.

Waxcap grasslands – a priority habitat?

The following is supporting information for the recognition of waxcap grasslands with the BAP Habitat series. At present the full ranges of habitats which support waxcap grasslands are not covered in the Priority Habitat series. Whilst waxcap grasslands may not meet the BAP Priority Habitat criteria they should at least be recognised as an important feature of other Priority Habitats, particularly in light of conservation delivery for waxcap fungi BAP Priority Species. It should be acknowledged that there is a significant gap within the Priority Habitat system to cover all waxcap grasslands.

- Waxcap grasslands are grasslands that are rich in fungi, the most striking of which are the brightly coloured ‘waxcaps’ (*Hygrocybe spp.*), but which may also play host to a variety of other species including earth tongues (e.g. *Geoglossum spp.*), fairy clubs (e.g. *Clavaria spp.*) and pink gilled entolomas (*Entoloma spp.*).
- Waxcap grasslands support several rare and threatened species, including the existing BAP species pink waxcap (*Hygrocybe calyptiformis*), date-coloured waxcap (*H. spadicea*) and olive earth tongue (*Microglossum olivaceum*), and big blue pinkgill (*Entoloma bloxamii*) and dark purple earth tongue (*Geoglossum atropurpureum*), both of which are being proposed as BAP species in the current BAP Priority Species Review.
- Waxcap grasslands are also important for the diversity of fungi they support. The best sites may support over 60 species just from the four groups listed in the first paragraph, not to mention other species.
- Grasslands that are important for their fungi have become very scarce on a European scale and the UK has an important resource.
- Waxcap grasslands are not necessarily also rich in vascular plant species. Indeed, some sites that may appear to be botanically ‘dull’ can be exceptionally rich in fungi.
- The best waxcap grassland sites are well drained, have a short turf, a well-defined bryophyte layer and a low availability of nitrogen. The key management factors that favour fungal fruiting appear to be a high level of grazing (or mowing) and lack of agricultural inputs. Old unimproved pastures, traditionally managed old lawns and churchyards can all be potentially good sites.
- Although some waxcap grasslands will be covered by existing Priority Habitats, many probably best correspond to the Broad Habitat ‘neutral grassland’ and not to any Priority Habitat therein. There is therefore a significant gap in the existing Priority Habitat list.
- Waxcap grasslands are threatened by agricultural intensification and in some cases, neglect. These threats are perhaps exacerbated by the lack of knowledge about waxcap grasslands and the fact that they may initially be ‘written off’ for conservation purposes since they may appear unimportant to those who are unaware of their mycological value.

- Research is currently ongoing at Aberystwyth University into the ecology of this habitat. Survey work has been carried out Scotland, Wales and Northern Ireland to determine the extent of this resource and to identify the best sites. However, further survey, particularly in England, is urgently needed. Targeted agri-environment schemes that are tailored to take into account the needs of waxcap grasslands potentially offer an effective means to conserve many sites.

Plantlife April 2006

Annex I

***Epipactis youngiana*: its status as a UKBAP priority species.**

A statement from Plantlife Scotland, as UKBAP lead partner, on behalf of the species steering group.

Current taxonomic status:

Plantlife Scotland has commissioned a species dossier, currently in press, which states that: “*Epipactis youngiana* is part of the *E. helleborine* complex..... this complex has produced many distinctive local variants, some of which have been recognised taxonomically. Some of these are outcrossing but geographically or ecologically distinct,..... Other taxa within the *E. helleborine* complex have evolved partial or complete autogamy..... Subsequent work [on *E. youngiana*], notably by Harris & Abbott (1997) and Hollingsworth et al (2005) has clarified certain points. *E. youngiana* is very closely related to *E. helleborine*, and populations in Scotland and England are more closely related to their local *E. helleborine* than they are to each other. *E. phyllanthes* is definitely not a parent of *E. youngiana*, although *E. dunensis*, which occurs in both the main districts where *E. youngiana* is found, could have been involved in its parentage. Although field observations suggest that *E. youngiana* must receive a substantial proportion of selfed pollen, it possesses the population genetic structure of a typical outcrosser (Hardy-Weinberg equilibrium), suggesting that cross pollination must occur. The emerging consensus seems to be that because *E. youngiana* is genetically indistinct from *E. helleborine* but can be distinguished morphologically, it is best described as a variety of *E. helleborine* (Harris & Abbott 1997, Bateman 2005, Hollingsworth et al 2005).”

Steering group recommendations:

- Support local monitoring schemes to track population levels.
- Where the variety is listed on the Local Biodiversity Action Plan, some management to ensure continued availability of habitats should be considered.

•

Ongoing work:

- Hardy Orchid Society are growing on *E. youngiana* seeds to find out if they come true or not.
- Monitoring of *E. youngiana* at one Scottish site is ongoing.

•

Does this species need a SAP?

Probably not its own SAP, but we have put forward a grouped species plan in the target review. It would be better to conserve *E. youngiana* as part of the *Epipactis helleborine* complex, as a grouped plan. This plan would have a single target:

N1 – Maintain all extant populations where *Epipactis youngiana* plus either *E. helleborine* or *E. dunensis* occur.

The reason for this decision is:

Although *E. youngiana* does not represent a distinct species, its populations are certainly not typical *E. helleborine*. Sites where *E. youngiana*, *E. helleborine* and *E. dunensis* co-occur show a range of morphologies outwith the norm for *E. helleborine* and encompass plants with floral morphologies typical of outcrossers, and those more typical of selfers. Given the

large number of distinct selfing lineages that have arisen in *Epipactis*, these complex populations containing *E. youngiana* may well represent the types of populations from which autogamous taxa arise. Given the active diversification in the group, conserving such populations offers the potential for the generation of new species in future.

However, the taxon will require some protection of its habitat and a grouped UKBAP plan for this group of species may be an effective mechanism.

DJL

On behalf of the *Epipactis youngiana* SAP steering group
20 September 2005.

Annex II
BIODIVERSITY HABITAT CLASSIFICATION
PROPOSED NEW KEY HABITAT

<p>SUGGESTED HABITAT NAME</p> <p>Outcrops and mine spoil rich in heavy metals</p>	<p>NAME OF ANY CORRESPONDING HABITAT/S (e.g. Phase 1, NVC, Annex 1)</p>
<p>DESCRIPTION</p> <p>Biological features (e.g. dominant life forms/species, structure/notable species) Outcrops and mine spoil rich in heavy metals and other unusual minerals is an important habitat for lichens and bryophytes, several of which are specifically adapted to these conditions which are toxic to most plants. This includes a number of RDB species including the following BAP species; Cornish Path Moss, Lead Path Moss, Western Rustwort and the liverwort <i>Cephaloziella nicholsonii</i>.</p> <p>Other characteristic features In most sites the metaliferous outcrops which would have been the natural habitat for these species have been quarried away but the mine spoil still provides suitable habitat. The toxic nature of the soils means that successional changes are slow but a greater threat is the rehabilitation of derelict land often with grant aid from EC and the government.</p>	
<p>GEOGRAPHIC DISTRIBUTION (e.g. widespread, restructured)</p> <p>Sparsely scattered in western and northern parts of the UK.</p>	
<p>REASONS FOR RECOMMENDATION</p>	
<p>Not covered by other Key Habitats. An uncommon and threatened habitat of high biodiversity importance.</p>	<p><u>Key Habitat Type</u></p> <ul style="list-style-type: none"> • <u>Habitat which the UK has international obligations</u> • <u>Habitats at risk</u> • <u>Habitats which may be functionally critical</u> • <u>Habitats important for key species</u>
<p>NAME OF PROPOSER Martin Harper</p>	<p>ORGANISATION Plantlife</p>
<p>DATE 16th December 1999</p>	

Hedgerows HAP Steering Group

We note the comments made by the JNCC Habitats Advice Team on our proposal to widen the definition of hedgerows beyond ancient and/or species-rich hedgerows. We would like to offer the following comments in response.

Support for the proposal

As set out in the proposal template, the wider definition has the support of the statutory conservation agencies in the UK (English Nature, The Countryside Council for Wales, and Scottish Natural Heritage) as well as other members of the HAP Group. There is also strong support from the Dormouse and Greater Horseshoe Bat SAP Groups.

Consistency of approach with other habitats

The JNCC notes that the new definition encapsulates virtually all hedgerows in the countryside, not a prioritised subset within this habitat type, and thus could be seen as inconsistent with other habitats.

Hedgerows belong to the 'Boundaries and linear features' Broad Habitat and, according to the NBN Habitat Dictionary, are specified as a key element of this habitat along with others such as walls, dry ditches and verges. Therefore, the new definition of hedgerows as a priority within this Broad Habitat is totally consistent with the relationship of other priority habitats to Broad Habitats, e.g. Lowland Meadows within Neutral Grasslands and Lowland Acid Grasslands within Acid Grasslands.

Biodiversity benefits of hedgerows

The JNCC considers that the existing definition supports the majority of the relic (woodland/grassland) species associated with hedgerows. However, as set out in the proposal template, hedgerows have a much wider role than simply acting as a relic of past species' distributions. Indeed, most of these relic species are not included among the most 'important' species associated with hedgerows, i.e. they are not priority BAP species and they are generally not rare or protected.

As the JNCC acknowledges, hedge structure and the presence of predominantly native or archeophyte woody species are of major significance at both the individual hedgerow and the landscape scale because of the connectivity of the habitat. This is a unique feature among the priority terrestrial BAP habitats and is of particular importance for priority species such as greater horseshoe bats and dormice.

Policy relationships and monitoring

The JNCC notes that most policy instruments do not relate to ancient and/or species-rich hedgerows. The new definition provides a much better fit with the land use and conservation policies that now operate, which recognise the significance of a wider set of hedgerows. For example, at European level, Article 10 of the Habitats and Species Directive and the EC Biodiversity Action Plan for Agriculture make specific references to the importance of traditional field boundaries, including hedgerows. At national level, policy instruments such as CAP cross-compliance and agri-environment schemes also address the broader definition of hedgerows, rather than ancient/species-rich hedgerows. Thus, the wider definition is now consistent with current policies which recognise the importance of a much broader set of hedgerows than ancient and/or species-rich.

The JNCC also recognises the monitoring difficulties associated with ancient and/or species-rich hedgerows. The new definition would enable existing Countryside Survey datasets to be used as baselines and allow repeats of the Survey in future to monitor targets. Adopting a wider definition is not simply a matter of convenience, but is vital if we are to assess the

quantity and quality of the habitat and to identify changes over time. As such, this is of great importance for nature conservation.

Final comments

We consider that there is a strong biodiversity case for extending the priority habitat definition to all hedgerows consisting predominantly of at least one woody native species. We note that there may be some concern about 'native' status in different parts of the country (e.g. beech and sycamore in Scotland). However, apart from being very difficult to establish for some species, it should be recognised that most of the abundant woody hedgerow species, and even some of the less common species, are of planted origin and cannot be considered to have a pristine 'native' distribution in hedgerows anywhere.

Cereal Field Margins HAP Steering Group

Whilst we welcome the recommendations made by the JNCC Habitat Advice team and would be keen to see the adoption of a wider definition based on nature conservation value, we feel that there are scientific and practical barriers to the adoption of a new definition. We therefore want to express concern about the timescale for any changes.

The Group has felt for some time that Cereal Field Margins were a peculiarity in that the habitat is defined by what you do to it, rather than by its nature conservation value. Priority cereal field margins are essentially any field edges managed specifically for biodiversity (this is not so very different from Coastal and Floodplain Grazing Marsh). There are however, good reasons for taking this approach.

We do have good research and monitoring evidence to demonstrate that land managed in the ways set out in the new definition provide significant biodiversity benefits. In addition, qualitative targets have been proposed for arable field margins, to ensure that arable field margins managed for biodiversity do actually deliver biodiversity.

Nonetheless, the Group recognises that there are other ways of delivering biodiversity in arable habitats. Organic farming is known to benefit some arable plants. Whole-field management can also have a range of benefits. The difficulty comes in agreeing a definition. With arable plants, we may well be able to use the Important Arable Plant Area concept, or define importance based on species richness or community types (including NVC types OV1-6 and OV16-17, as mentioned in the JNCC text). However, many of the mobile species associated with arable habitats, such as farmland birds or bumblebees rely on the provision of a range of habitat types within a landscape, and these individual habitat components would have to be defined separately, incorporating attributes such as flower or seed abundance.

It would therefore take some time to agree a revised definition, in consultation with Arable Plant, Farmland Bird and Bumblebee SAP groups. **We propose that this would take at least two years and would want to see a mechanism for incorporating proposed changes into the definition at that time.**

Furthermore there is considerable concern about how the extent or condition of an ecologically based Priority Arable Habitat could be monitored. Current monitoring proposals envisage using the Countryside Survey arable margin plots. We do not see how uptake targets based on ecological definitions could be set and monitored without an ecological survey of all arable land. This is clearly impractical and **we would suggest that even with a revised definition, targets would still need to be focussed on uptake of management options in field margins and on the condition of an appropriate sample. It may be possible to add new targets for whole fields or part-fields to this set.**

Within our paper, we had set out two options for further elaboration of the habitat definition:

1. A re-defined priority habitat. This would be based on ecological characteristics of the habitat (species richness, presence of certain key species etc.).
2. Not having a priority arable habitat. Instead, current HAP would be replaced by a broad habitat plan with individual targets relating to the species associated with arable habitats: primarily birds, arable plants, small mammals and certain invertebrate groups. Essentially this would be an umbrella group for the SAPs.

We would welcome further feedback and guidance on these two options.

Kate Holl, SNH

Traditional orchards

There is inevitably overlap with other habitats as traditional orchards are a sub-set of wood pasture and parkland, which is itself a structurally defined variant of the semi-natural woodland HAPs, with associated non-woodland ground vegetation. However, I do think the habitat is clearly defined within the annex and consequently consider on balance that it is preferable for this habitat to be treated as a distinct HAP to ensure that appropriate conservation and management measures are targeted in the right direction.

Agree with the separation of 'traditional' orchards as a BAP priority habitat, particularly from wood-pasture and parkland.

Much prefer "traditional orchards" as a name because of the implied link to historic management and the role of people in creating these habitats which are now considered of high nature conservation value.

Scrub & treeline vegetation

The difficulty here is that from experience of working with the existing suite of HAPs, unless a habitat is specifically listed as a stand-alone type it tends to get overlooked. We previously included the Atlantic hazel woods within the Upland Ash HAP, but most people are not aware of this and so little or no action has been directed at the conservation and management of these hazel woods. Sometimes management for upland ash may even be to the detriment of atlantic hazel woods. Similarly tree-line scrub was included within the Upland Birch HAP, but unless you read the full plan then you would not be aware of this as the targets are not differentiated.

If we say that all scrub types can be classified as structural components of the various habitats within which they occur – then the same logic could be applied to a number of woodland habitats, eg. pine woodland, upland oak woodland and others. Clearly we do not consider that this would ensure sufficient appropriate action for the woodland habitats concerned, and I feel the same argument applies to certain scrub habitats which have a high biodiversity value, but whose management requirements are frequently overlooked when they are considered within a matrix of a more widespread habitat which determines the overall management. I do think that there is a case to be made for certain scrub types to be explicitly mentioned within a scrub HAP which would also need to clearly define which scrub types are not included.

I agree with the concern expressed by the Montane scrub action group (see my comments above).

Lowland wood pasture and parkland

The proposal is supported by the Scottish Wood Pasture HAP group.

Native woodland

Many of the woodland HAP types are not sufficiently distinctive especially given historical interference with the canopy species, therefore I strongly support the proposal to combine the existing native woodland HAPs within a single framework so at a practical level targets can be easily translated to appropriate action on the ground, but there would still be the opportunity to monitor results of action at an individual HAP level.

Stewart Angus, Scottish Natural Heritage

There is a reference to the importance of arable weeds on machair. The text goes on to say that the condition of arable weeds has improved, and though it does not actually state that this applies to machair, it could be regarded as doing so. In fact the biodiversity of arable machair has plummeted recently, to the extent that we are now seriously concerned.

Further comments from David Knight & Jon Webb, English Nature

David Knight

Regarding the comments in Buglife's submission on the post-industrial habitats proposal, their main criticism is that the post-industrial focus is narrow and excludes many types of brownfield land. I would agree with this but would point out that this is intentional as the proposed habitat is intended to recognise sites which share characteristics largely in terms of their structure, and have a range of associated species or groups of biodiversity interest.

I'd agree that the definition is not exclusive of brownfield land of biodiversity interest, though the argument that 'brownfield' is a legally recognised term is undermined by the definition they propose which is not even close to that in existing planning guidance.

I'd welcome Jon's comments on Buglife's proposed revision of criteria regarding invertebrate species, (though would emphasise that the biodiversity interest of the proposed habitat includes other species and groups of notable biodiversity interest).

With regard to a national inventory of sites, different parts of the country have histories of different types of heavy/extractive industry, such as the Yorkshire coal field, and these could provide an initial focus for a provisional inventory.

Jon Webb

Whether Post-industrial/brownfields HAP is inclusive or exclusive of different 'habitats' is a difficult issue and one I will not get embroiled with. The key elements for decision makers is whether or not they feel current HAPs cover the interest on Brownfield - we already have Heathland and Acid Grassland HAPs, can't we use these? Is it more or less confusing to have a Brownfield HAP that overlaps with these?

I agree with Buglife that the term Brownfield has more relevance than post-industrial and I like the term Phoenix as it sounds special / enigmatic.

Invertebrate Criteria:

Criteria 1 sounds fine and seems relatively robust. Adding terms like 'genuinely rare' in front of RDB is eminently sensible. I think we even could go a little farther and have a category that states something like: includes a nationally important assemblage of species associated with early successional habitat. This definition would currently be down to expert opinion but I do not think it will be long before we can use ISIS (an EN invertebrate assemblage program) to detect and rank these.

Criteria 2 As much as I would like to I do not think it may be plausible to rate things on potential. Does anyone know if potential for sites to include species has been used before? Buglife certainly list a very interesting set of habitat types within this criteria that should support interesting invertebrates but I suspect we would be on safer ground by actually proving the interest within them.

Richard Evans, Department for Environment Planning and Countryside, Welsh Assembly Government

Fieldbanks (cloddiau)

- As the original proposal for this habitat to be included as part of the Hedgerow BAP came from my colleague, Aisling Carrick, I fully support the case for their consideration as priority habitat. As there is little support in the remainder of the UK for this habitat (with the exception of Cornwall), there may be little impact on the Hedgerow regulations in England. Wales intend to carry out a separate consultation process in the future and this habitat should be included as part of the Welsh consultation. I still feel however that as the HAP is a UK organisation that this habitat has importance at a UK level.

Hedgerows

- Should the 'native species' be restricted to local provenance? Many newly planted hedgerows are of European provenance and should not be included in this.
- Given the above point the name " Hedgerows " should be renamed as native hedgerows.
- As there appears to be an inconsistency due to the problems in defining this HAP, why not have two categories - "Ancient and species rich " and "other hedgerows". The latter could include the definition of 1 native species while the A & SR definition should be more refined. This may not overcome the monitoring issue identified later but at least it would enable ecologists to classify those hedges which were important from a landscape and stock proofing point of view and the more species rich ones which require more sensitive management.
- Agree that the definition should be done sooner rather than later.

Diana Reynolds, Welsh Assembly Government

There is much debate in Wales but the flavour seems to be that we are keen to have cloddiau included within the Ancient and/or Species rich hedgerow HAP as long as it is clear that it is to protect existing cloddiau not to create cloddiau out of more bio-diverse habitats.

Although they may not generally be species rich (?except perhaps for nesting Yellowhammer?) they are part of our cultural heritage, of landscape importance, and thereby fit into Article 10 of the Habitats Directive.

I am aware that we can "correct" for any exclusion in Wales by adding cloddiau back in when we consult but I am also aware that colleagues in Cornwall will not be able to do this. I would welcome your views as to whether the above change might be possible (including my proviso). In the meantime I am seeking further advice from CCW, which I will share with you once you let me know the position.

Richard Weyl, Environmental Heritage Service, Northern Ireland

For information in 2003 and 2005 we published NI HAPs covering most of the UK priority habitats occurring in NI on http://www.ehsni.gov.uk/natural/biodiversity/hap_ni.shtml. These give further information on how the priority habitats have been defined here.

Priority habitat		NI position	NI comment
Active shingle rivers	New	OK	Uncertain of extent in NI. Crowfoot rivers is a NI priority habitat which was proposed and rejected as a UK priority habitat- I am uncertain how this habitat differs from this.
Headwaters	New	OK	Similar position to rest of UK
Oligotrophic lakes	New	OK	Similar position to rest of UK
Ponds of high ecological quality/conservation value	New	OK	Proposal built on GB data - little survey data in NI (National Pond Survey does not include NI). Fully agreed a NI priority. In NI small water-bodies with high conservation value mostly associated (and to date included) with natural wetlands e.g. fens and lakes. Overlap with lakes and fens needs to be resolved. Ponds of high (nature) conservation value' preferred.
Canals	Possible	Not relevant	Canals are a insignificant freshwater habitat in NI
Mountain heaths	New	OK	Montane heath already a NI priority habitat. Suggest keeping the name simple and keep as "Mountain heaths"
Upland flushes and fens	New	OK	Similar position to rest of UK. Content with current name.
Upland natural rock and scree habitats	New	OK	Similar position to rest of UK. Content with inclusion as a priority habitat. A large number of NI priority species and Irish RDB species associated with the habitat. Formerly uneasily included in adjacent which had different management requirements. The habitat could be defined as "Upland natural rock and scree habitats of high nature conservation value" using plant records to define the sites.
Rock outcrops, mine spoil and river shingle rich in heavy metals	New	OK	Uncertain to what extent NI sites included but liable to be of very limited extent. In NI to date possible examples of this habitat have been included as part of existing priority habitat e.g. calcareous grassland and as with lowland calcareous grassland it may be pragmatic to continue with this approach.
Post-industrial sites of high nature conservation value	New	Little benefit to NI	Little conservation benefit for native biodiversity in NI but agree important elsewhere in UK. In NI to date good examples of this habitat have been included as part of equivalent semi-natural priority habitat e.g. calcareous grassland.
Traditional orchards	New	Little benefit to NI	Subject to agri-environment schemes in NI but of uncertain benefit to native biodiversity in NI (but agree there is a good case for its important elsewhere in UK).
Field banks	Possible	OK	With the local disappearance of lowland grassland this

			habitat would appear to be of similar value in NI as it is in Wales. Grassland field banks are uneasily included in NI grassland HAPs.
Roadside verges	Possible	OK	With the local disappearance of lowland grassland this habitat is of increasing importance. Grassland field banks are uneasily included in NI grassland HAPs and measures for them included in some NI SAPs.
Arable land	Possible	OK	Fully agree with the comments and offer strong support. The area and management of the whole arable fields is much more an important biodiversity issue in NI than the management of the margins. The definition of favourable condition (or the habitat) could be restricted to field managed in a wildlife friendly way e.g. winter stubble or part of an agri-environment scheme.
Hedgerows	Change	OK	Similar position to rest of UK
Arable Field Margins	Change	OK	Similar position to rest of UK. See comments on arable land which should be really be considered the priority habitat. In considering declining, threatened and/or vulnerable species and habitats associated with arable areas differences in regions should be noted (many vascular plants and birds are more frequent in south and east Britain) but may be declining severely outside this area e.g. some weed species and yellowhammer.
Wood-pasture and parkland	Change	OK	
Lowland calcareous grassland	Change	OK	Examples of this habitat of limited extent and excluded for practical purposes
Lowland Heathland	Change	OK	Changes OK not particularly needed in NI
Scrub and tree-line vegetation	Possible		Agree with proposal to include as part of general HAP advice. Montane scrub requiring specially management absent in NI and juniper very local and could be included as part of favourable condition of individual grassland or heathland sites.
Native woodland	Change		No strong views. NI has individual plans for each woodland priority habitat. However many woodlands in NI are small and contain more than one type and it is therefore difficult to distinguish between current woodland priority habitats.

Ian Fozzard, Scottish Environment Protection Agency

The Joint Lakes HAP Steering Group (covering the mesotrophic lakes HAP and the eutrophic standing waters HAP) met in Bangor last week (3 and 4 May) at the offices of CCW and considered this consultation. We agree that the original proposal probably merits some minor updating, but we can confirm that the work in progress cited and that all subsequent work undertaken confirms our stated view - that this habitat is at significant risk in the UK from the pressures identified. The updating of the proposal would not be too onerous - if we could simply find a few hours to do it! There are a number of points which I think I should flag up to you as outcomes of our discussions at Bangor last week:

- In identifying and quantifying the Lake resource in GB for the Targets Review for the existing Lakes HAPs, we have also identified oligotrophic lakes, decided which ones are "important" (in terms of designation and presence of priority species), and allocated them to Tiers (Tier 1 - probably in good condition, Tier 2 - probably in less than good condition). You should bear in mind of course that these allocations are largely based on modelled data.
- Our initial analysis indicates that there are only 29 oligotrophic lochs which fall into the following category: "important" for biodiversity priority species and NOT designated, and believed to be in Tier 2 - less than good condition. These are 10 in England, 15 in Scotland and 4 in Wales. It is these oligotrophic lochs which might be considered as the core business of the Lakes HAP JSG since they are not currently offered the protection of designated sites. There is one caveat to this analysis: the number of BAP species associated with oligotrophic lakes which we have recorded in the GB Lakes Inventory is probably somewhat restricted (less effort has been put into establishing the species linked with oligotrophic lakes since this is not a priority habitat yet). If this situation is addressed at some future date the number of lakes in this category is clearly likely to rise. Nevertheless, this initial analysis suggests that the workload is manageable.
- Our understanding is that UKBAP reporting will continue to be based on the individual lakes HAPs, which although is somewhat arbitrary in many cases, does not now present such a major problem for us as previously envisaged. Our procedure for allocation of lakes to Tier 1 and Tier 2 is in fact based upon this primary allocation of lakes to trophic types.
- The Lakes HAP JSG view remains essentially as expressed by Simon (Leaf) in his email to Ian Strachan of 24 November 2005 - which I've appended to this email as an attachment in case you don't have it to hand.
- The feeling I gained from the recent Lakes HAP JSG meeting was that there was an especially strong wish for oligotrophic lakes to become a priority habitat in England and Wales where this particular habitat is both rare and under significant threat.

Joanna Drewitt, SEERAD

We have been having some discussions re the habitats definitions. The comments below were made from some Agriculture policy colleagues, but following these I spoke to SNH regarding the hedgerow habitat definitions and understand that the proposal is a long way short from their desire to look at the hedge bottom and arable weed composition etc. rather than just woody species in the actual hedge structure. So, I'm not clear on the approval process/next stages for the habitats given these differences in opinion. In addition, I asked the Action Plan and Science Group of the Scottish Biodiversity Forum to give any further Scottish input over and above what Brigid Primrose is collating from SNH and so far I have only received one set of comments which I also attach.

Ron Vass, SEERAD

I have a general comment and comments on a couple of specific habitat proposals. On a general note, I know that the proposed process is for the habitat definitions etc to be decided first, to be followed at a later stage by funding and management questions. However, I am concerned that widening (in some cases significantly) the definition of a habitat gives little or no guidance to funding agencies when considering how best to target limited resources. I also agree with some of the comments to the effect that widening the scope moves the focus away from “priority” habitats and therefore away from the justification for specific intervention measures.

In particular, I and colleagues are concerned about the proposal to widen the scope of the Hedgerows habitat. We accept that the present definition has limited relevance in Scotland, but the proposed extension brings some difficult questions about the definition of “native” species and, as noted in the comments, the biodiversity value of some types of single-species hedgerow (eg beech). We believe that a lot more work is needed to refine this measure and to justify its extension to virtually all hedgerows.

We also find it difficult to take in the concept of a “headwaters” habitat. Looking at the many different types of headwater environment around the UK, it is not at all clear what the common habitat/features are, to justify bringing them together under a common definition. This seems to go against the focus and rationale which are present for other habitats.

These and other points will no doubt be discussed further by the Review Group and other fora. I look forward to seeing your note of draft replies.

Dr Mark Young, School of Biological Sciences, Aberdeen University

Here are very brief comments on the proposed additions and changes to the habitats review.

1. River shingles. Very important habitat with strong Scottish focus - certainly include.
2. Headwaters is an odd definition, in that it could be taken to mean waters so high on a river that it is an eroding zone, with no fish and/or water voles etc.. I find it hard to get to grips with what it is to include. In essence it seems to be the upper currently unpolluted and unmodified parts of water courses. I agree that such areas are of conservation interest and see the 'pragmatic' definition. I am OK with this but feel that it stretches scientific limits.
3. Oligotrophic lakes. I strongly support this category.
4. Ponds. The difficulty is with the definition of what is of 'high ecological quality' (or 'high nature conservation value'. I know of some very grotty ponds that support crested newts (and perhaps medicinal leeches). Presumably these are to be included. The full definition is not included. As long as it is workable then of course ponds should be included but the definition must be tight.
5. Other freshwater habitats. This is too vague to convince.
6. Mountain heaths Essential to include these!
7. Upland flushes and fens. Should be included, but should they be part of, or separate from, the main flushes and fens plan? I would include them with others.
8. Upland rock and scree. This is a very important habitat and deserves listing, once the definition has been sorted out.
9. Habitats associated with metal contamination. I understand the rationale here but know little about such areas and so do not wish to comment.
10. Post-industrial sites. Same comment as for 9.
11. Traditional orchards. I know about these from my time in Herefordshire. I thoroughly approve their inclusion, although I cannot imagine an easily sustainable management plan.

New section - other potential habitats. I have no strong feeling that these should be included, except that I do not agree that montane scrub and tree-line trees will be covered sufficiently well by existing categories and I strongly recommend that a separate category is established for them.

Changes to existing categories. In general I agree with the changes proposed. My concern is with the use of just one 'native woodland' category. This will be so broad,

and will need such a diverse management brief, as to be impractical and so, for pragmatic reasons, I recommend it remains subdivided. (You might as well put all 'native grassland' together, or all 'natural waters!').