WORKING PAPER 1

INTERPRETING GRASSLAND REQUIREMENTS SET OUT WITHIN THE DIRECTIVE ON RENEWABLE ENERGY (DIRECTIVE 2009/28/EC)

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This paper was commissioned by WWF European Policy Office from the Institute for European Environmental Policy (IEEP). It aims to provide a basis for discussion, clarification and interpretation of the criteria for the protection of highly biodiverse grasslands set out in Article 17 of Directive 2009/28/EC on renewable energy. In so doing we hope to offer a basis for the development of an effective and practical system to implement these criteria.

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1 INTRODUCTION

The Renewable Energy Directive attempts to limit the negative consequences of expanded European demand for bioliquids and biofuels by proposing a series of sustainability criteria, set out under Article 17. Under the Directive biofuels and bioliquids must fulfil the Article 17 criteria to be: taken into account when complying with national targets set under the Directive; or eligible for financial support.

Paragraph 3 of Article 17 states that biofuels and bioliquids '*shall not be made from raw material obtained from land with high biodiversity value*'. It then goes on to qualify this statement by clarifying that for the purposes of the Directive this means land 'that had one of the following statuses in or after January 2008, whether or not the land continues to have that status':

a) Primary forest and other wooded land

b) Areas designated for nature protection

c) *Highly biodiverse grasslands that is:*

    (i) *natural, namely grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes; or*

    (ii) *non-natural, namely grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status.*

Point c has been the source of debate among experts, policy makers and environmental NGOs with uncertainty over its coverage and how the definitions could be operationalised. The European Commission is tasked (by article 17,3 second subparagraph) with establishing *'criteria and geographic ranges to determine which grassland shall be covered by point (C)'* these are then to be approved under the comitology procedure with scrutiny[1]. This analysis is intended to support this interpretive process and ultimately support implementation.

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[1] Regulatory committees with scrutiny: these must allow the Council and the European Parliament to carry out a check prior to the adoption of measures of general scope designed to amend non-essential elements of a basic instrument adopted by co-decision. In the event of opposition on the part of one of these institutions, the Commission may not adopt the proposed measure, although it may submit an amended proposal or a new proposal. http://europa.eu/scadplus/glossary/comitology_en.htm

2 THE CONTEXT – THE REPRESENTATION OF GRASSLANDS IN DIRECTIVE 2009/28

Within Directive 2009/28 references to the importance of grasslands are made at three different levels; within the Directive's recitals (paragraph 69), in Article 17 paragraph 3 and Article 17 paragraph 3 point c. The interconnectivity of these clauses is of importance when interpreting their meaning. Based on analysis of these three elements of the Directive's text – see Annex – **the overarching objective can be identified as to 'avoid the destruction of biodiverse lands' (including certain grasslands) through the expansion of biofuels and bioliquid production** (set out in the Directive's Recitals).

Analysis of Article 17 paragraph 3 reveals that 'highly biodiverse grassland' is the core term of importance during interpretation of the Directive's application to grasslands. The cross-referencing within Paragraph 3 means that for the purposes of the Directive **highly biodiverse grassland is one of the types of land that qualifies as of 'high biodiversity value'**.

Within Article 17, 3, c it is clarified that highly biodiverse grassland can be natural or non-natural. However, different characteristics are used within the Directive to determine whether certain natural and non natural grasslands should be classified highly biodiverse. The definition of 'natural highly biodiverse' grasslands requires the maintenance of 'natural species composition and ecological characteristics and processes', importantly making no explicit reference to species richness. 'Non-natural highly biodiverse' grassland is specified as needing to be 'species-rich and not degraded'.

The wording of the Directive implies **no hierarchy between highly biodiverse natural and non-natural grasslands, these are deemed as equally important to protect**. While the distinction between the two grassland types is useful in aiding identification of grasslands to be protected and the evidence base required[2], the lack of hierarchy means the primary objective is simply protecting highly biodiverse grasslands. Logically, therefore, if a grassland can be identified as likely to be highly biodiverse it should be avoided for the purposes of biofuel and bioliquid production. It is not necessarily important to distinguish precisely whether grassland is deemed natural or non-natural.

Despite the above clarifications important questions of interpretation remain outstanding. The remainder of this paper is, therefore, focused upon the following questions:

– What defines grassland?

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[2] See section 6 for discussion over the distinction between natural versus non-natural grasslands and the differing characteristics valued under these two classifications based on the text of Directive 2009/28/EC.

– Are highly biodiverse grasslands and high biodiversity value comparable?

– How should natural and non-natural grassland be defined and interpreted, given the Directive's text, at an ecological level?

– How can the 'valued' characteristics of natural and non-natural grassland i.e. natural species composition and ecological characteristics and processes, and species-rich and not degraded respectively, be defined?

When considering the following analysis it should always be borne in mind that the Directive's wording is the product of a political process and not a formal scientific one. As a consequence part of the challenge is identifying what is meant by the Directive and reinterpreting this in light of the ecological realities.

3 DEFINING GRASSLAND

To comply with the Directives' aim of protecting highly biodiverse grasslands - including "highly biodiverse savannahs, steppes, scrublands and prairies" (Preliminary Recital 69) - it is important to ensure that **a broad definition of grasslands** is used, which includes biotopes that can have a high proportion of species or habitats other than grass (such as shrubs, trees, mosses, other plants), and bare soil or exposed rock. Many habitats of importance are likely to be intermediate or transitional (between forest and steppe, wetlands and grasslands, and desert and grasslands) or consist of complex mosaics of different micro habitats.

The meaning of "Grassland" for the purposes of the Directive should be clarified using a scientific but sufficiently broad definition. This is of importance given that the Directive covers both natural and non-natural grasslands, with the latter being anthropogenically formed and maintained. This would be in line with a **precautionary approach** and the spirit of the Directive, in terms of protecting biodiverse lands.

A large number of definitions of grasslands exist, but according to Gibson (2009)[3] the most widely accepted among scientists and ecologists is that of White et al (2000)[4]. According to White grassland comprises **"terrestrial ecosystems dominated by herbaceous and shrub vegetation and maintained by fire, grazing, drought and/or freezing temperatures."** Although not explicitly stated in the definition, ecosystems dominated by cereals and other crop cultivars are excluded. White's definition is also the basis of an extensive data set on the distribution of grasslands. This definition, however, does not cover holistically non-natural grasslands. To translate White into a definition appropriate to the coverage of Directive 2009/28/EC there are a number of possible approaches:

1. to extend the maintenance categories within the definition adding 'and other forms of human intervention';

2. to extend the category to explicitly cover the other main form of human intervention that maintains grassland ie cutting/mowing; or

3. to simply shorten the definition and remove the maintenance categories completely leaving this as a primarily ecological definition ie that grassland is 'a terrestrial ecosystem dominated by herbaceous and shrub vegetation'.

The three definition approaches set out above are all considered sufficiently broad to ensure that: both natural and non-natural grasslands are covered; that grasslands with high levels of shrub cover would be included; and that habitats with low levels of total vegetation cover are captured.

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[3] Gibson, D.J. (2009) Grasses and grassland ecology Oxford University Press, Oxford.

[4] White, R.P., Murray, S., & Rohweder, M. (2000). Pilot analysis of global ecosystems. Grassland ecosystems. World Resources Institute, Washington, D.C.

Within Directive 2009/28/EC, Article 17.3, second sub paragraph it is stated that the '*Commission should establish appropriate criteria and geographical ranges to define such highly biodiverse grasslands in accordance with the **best available scientific evidence** and relevant international standard*'. It is considered that **White's definition offers the best available scientific basis for a definition of grasslands. It is proposed that option 3, above, offer the simplest mechanisms for amendment of the White definition, extending the coverage clear way, appropriate to the Directive.**

Internationally under the auspices of the Convention of Biological Diversity (CBD) there is a definition for grassland ecosystems set out under the Dry and Sub Humid Land Biodiversity Programme of work. This states that 'grassland ecosystems may be loosely defined as areas dominated by grasses (members of the family Gramineae excluding bamboos) or grass-like plants with few woody plants'[5]. This was repeated, in a slightly different form within the Decision adopted at the 9th Conference of Parties to the Convention in May 2008.

It is considered that, while this CBD definition might be useful there are many uncertainties that would need to be clarified were this to be adopted to interpret Directive 2009/28/EC. These would include 'what are grass-like plants' and what is considered to exceed 'few woody plants'? Moreover, the emphasis on this being a 'loose' definition and the apparent conception of this definition to perform a specific purpose under the dry land programme means that further detailed assessment would be required to ensure appropriateness, in line with the breadth of coverage under the Directive. It should, however, be noted that any approach adopted within the EU should not contradict the aims of the CBD.

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5 http://www.cbd.int/drylands/definitions.shtml

4 HIGHLY BIODIVERSE VERSUS HIGH BIODIVERSITY VALUE

Under Article 17.3 of Directive 2009/28/EC the biodiversity related criteria aim to avoid 'land with high biodiversity value' and specifically 'highly biodiverse grasslands'. According to the Convention on Biological Diversity (CBD) 'biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems'[6].

It is therefore important to note that the overarching biodiversity aims of Directive 2009/28 are broader than those outlined in the clauses defining 'highly biodiverse' grasslands, which only refer to natural grasslands and 'species-rich' non-natural grassland. In other words, natural grasslands and non-natural species-rich grasslands are a subset of highly biodiverse grasslands. In particular, the term species richness is usually used with respect to plant species richness (and normally only higher plants, i.e. excluding mosses and liverworts etc).

The term 'highly biodiverse' should not be interpreted as simply species richness. Moreover, were species richness and highly biodiverse to be strictly interpreted, some grasslands of high biodiversity value might not be captured under the definitions of natural grassland or species-rich-grassland offered in Article 17. These could include natural or non-natural grasslands that provide important habitats for threatened species (but are not formally contained in protected areas), that support high populations of animals (e.g. breeding or wintering birds) or that are scarce examples of semi-natural habitats that are typically species poor (e.g. some grasslands on low fertility soils). For example, according to Gibson (2009) grassland/savannah/scrub is the main biotope in 23 of 217 Endemic Bird Areas, identified by BirdLife International[7], of which three have the highest rank for biological importance (Peruvian High Andes, central Chile, and southern Patagonia). Similarly, thirty-five of 136 terrestrial ecoregions identified as of outstanding diversity and priorities for conservation, in the WWF-US Global Programme, are grassland.

Thus, **to achieve the overall environmental aim of the Directive, it is important to interpret the definitions of 'highly biodiverse grassland' in a broad sense, to avoid unintended detrimental impacts on biodiversity**. This is in accordance with the approach adopted by the multi-stakeholder Roundtable on Sustainable Biofuels, which according to the secretariat of the Convention on Biological Diversity[8] proposed the following

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[6] http://www.cbd.int/convention/articles.shtml?a=cbd-02

[7] Stattersfield, A.J., Crosby, M.J., Long, A., & Wege, D. (1998) Endemic birds areas of the world: priorities for biodiversity conservation BirdLife International, Cambridge

[8] CBD (2009). Consideration of ways and means to promote the positive and minimize the negative impacts of the production and use of biofuels on biodiversity. Regional workshop on ways and means to promote the sustainable production and use of biofuels. 28-30 September 2009, São Paulo, Brazil. CBD Secretariat, Montreal

principle (amongst others): 'biofuel production shall avoid negative impacts on biodiversity, ecosystems, and areas of High Conservation Value'.

In order to deliver this the following interpretations are recommended:

– **The requirement for grasslands to maintain their natural species composition and ecological characteristics and processes to qualify as natural should not be based solely on the composition of the vegetation**. In particular, natural grasslands that support significant populations of animals (e.g. savannahs of east Africa) or threatened species should be protected, irrespective of their vegetation composition. This is because the importance of many natural grasslands for biodiversity is often primarily related to their associated fauna, rather than their flora.

– There is no such thing as an objective standard above which grasslands can be considered highly biodiverse. The features of grasslands will vary, depending on the natural characteristics of the biological system, as well as other factors such as latitude and temperature. Any approach to classification will have to take account of this variability. **Any assessment of grassland characteristics (including species composition) should be appropriate to the biogeographic region in which the given grassland exists** i.e. regionalise standards will need to be developed, it will not be possible to have a 'one size fits all' approach to the identification of grasslands of value.

– The consideration of **species richness in non-natural grasslands should not be restricted to plants**. Thus, species-rich non-natural grasslands should include grasslands that are species-rich with respect to any taxa group (e.g. plants, invertebrates, reptiles, birds and mammals).

– **Consideration of species richness should not be solely based on small-scale assessments**, e.g. species per m^2. Larger scale species diversity patterns are equally important. Thus grasslands should also be protected if they hold rare or otherwise threatened species or species assemblages, the loss of which would reduce national, regional or global scale biodiversity.

5 NATURAL AND NON-NATURAL GRASSLANDS

There are two reasons why it is useful to distinguish between natural and non-natural grasslands:

- That **different requirements** in terms of quality and characteristics are applied to these **two sub categories by Article 17**;

- That the differing characteristics of these two habitat types and their origin mean that **different data sets are required** to identify them.

- **Making the Distinction**

Under the Directive natural and non-natural grasslands are distinguished by the fact that the former would remain grassland in the absence of human intervention, while the latter would cease to be grassland in the absence of human intervention. Firstly, it is vital to note that just because human activity is taking place in an area does not automatically classify grassland as non-natural. The vast majority of natural grasslands globally are used for some form of agriculture, primarily extensive grazing of livestock. **The mere presence of farming activities at some level cannot, therefore, be used as a basis to distinguish between natural and non-natural grasslands.**

When considering human intervention it is vital to consider the counterfactual. There are areas of naturally occurring grasslands that were historically maintained by grazing wild herbivores. However, these species and their ecological functions have been largely replaced by domestic livestock. Such grasslands were, therefore, naturally generated but are now maintained by human activities. When interpreting the Directive, such areas should be classed as natural grasslands, unless they have been modified extensively for example by fertiliser use, ploughing, reseeding or herbicides. Therefore the presence of human intervention, in isolation, cannot be used as a mechanism to distinguish natural and non-natural lands consistently.

When determining natural grassland, one mechanism would be to identify whether the system was created by human intervention. For example, in Europe most grasslands are primarily non-natural; grasslands created by more recent waves of deforestation in the tropics would also be classified as non-natural. Meanwhile the major grassland ecosystems of savannah, steppe, tundra, prairie etc would be natural.

In conclusions **the mere presence of human activity on an area of grassland should not be used as a proxy for determining whether the grassland is natural or non-natural**. When determining whether grasslands qualify as "natural" one mechanism would be to identify if they were created by human activity, rather than seeking to establish if they would remain as such in the event of the loss of human activity.

- **Natural versus Non-Natural Grasslands – The Data Needs**

The ecology and distribution of most natural ecosystems is relatively well understood and their potential occurrence can be predicted and mapped with reasonable confidence. In contrast, the occurrence and biodiversity value of non-natural grasslands is much less predictable as they encompass an array of very differently created and managed grasslands with highly varied current and potential biodiversity value. The difference in the two types of systems results in different data needs, applicability of mapping approaches and availability of information. There are a variety of global maps and datasets (White, 2000) that can be used to identify areas that have the potential to hold natural grasslands. More detailed national or sub national maps also occur. The potential for areas to hold natural grasslands can also be modelled. For example, a recent modelling study has mapped the expected locations of habitats protected under the Habitats Directive across the EU[9].

Remote sensing information (i.e. from aerial photographs and satellites) may also be used to verify that areas within the mapped extent of natural grasslands are indeed grasslands (rather than cultivated crops or forest etc). It may also be possible to establish land uses over the previous 10 or more years for many areas. One particular challenge remains, however; the establishment of land use as of January 2008 as specified in the Directive. The presence of a base date in the past, while integral to the Directive represents a particular challenge for provision of proofs to meet the criteria.

There are no global datasets that include the location of non-natural grasslands (although there may be regional and local mapping exercises). Furthermore, very little information is available for most countries on the location of non-natural grasslands of high biodiversity value. Although some information may be available for particularly important sites (e.g. Important Plant Areas[10], or Important Bird Areas[11] etc) such information is likely to the incomplete and use a variety of biotope classifications. For example, within the UK maps exist of grassland habitats of high biodiversity value (as listed in the UK Biodiversity Action Plan[12]) for Wales; some data are old (dating from the 1980s) therefore, many of the mapped grasslands are likely to no longer exist. Only incomplete data exist on the location of UKBAP grasslands in England and Scotland.

In conclusion, natural grassland systems will likely result from determinable natural processes, and have been mapped. There is, however, be no consistent biological process that leads to the generation of non-natural grassland systems of high biodiversity value - and their distribution cannot therefore be readily predicted and mapped.

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9 Mücher, C.A., Hennekens, S.M., Bunce, R.G.H., Schaminée, J.H.J., & Schaepman, M.E. (2009) Modelling the spatial distribution of Natura 2000 habitats across Europe. Landscape and Urban Planning, 92, 148-159

10 http://www.plantlife.org.uk/international/plantlife-ipas-about.htm

11 http://www.birdlife.org/action/science/sites/

12 http://www.ukbap.org.uk/

6 UNDERSTANDING NON-NATURAL GRASSLANDS

Under the Directive the clause regarding non-natural grasslands is more complex to interpret than for natural grasslands. This is partly due to the wide array of potential non-natural grassland types. Further confusion is added by the incorporation into the definition of highly biodiverse non-natural grasslands the requirement that they be 'species-rich and not degraded'. Both issues are examined below.

- **Defining non-natural grasslands**

Non-natural grasslands will have been created through the loss of another natural habitat, as a consequence of human intervention such as deforestation. While some areas of non-natural grassland may be extensive others, such as pasturelands of importance for biodiversity in much of Europe, will be located within a mix of other land use systems.

We have initially identified several groups of non-natural grasslands based on management practices and the origin of the grassland. **It is felt that expanding the use-based classification of non-natural grasslands would aid non expert identification of potential biodiversity impacts of expansion in biofuel production**. Different non-natural grassland types will have substantially different biodiversity value.

1. **Grasslands that have been intentionally improved and are under intensive agricultural management**. These have generally been agriculturally improved, typically by ploughing, re-seeding, fertilisation, herbicide treatments, and in some cases other activities intended to increase productivity on the land such as extensive drainage or irrigation. Such grasslands normally have low biodiversity value and low species richness (even when classified in the broadest sense). It should, however, be noted that despite this they may remain important habitats, for example as an over-wintering site for birdlife.

2. **Semi-natural grasslands** are usually used for extensive livestock grazing and/or hay production. They often need such grazing or other forms of disturbance to maintain their diversity of flora and dominance of the grass sward. They tend to hold a high proportion of native species of open habitats and are often species rich, and are therefore classed as highly biodiverse.

3. **Land that was formerly in agricultural use for either arable or as grazed land and has since been abandoned**. The lack of agricultural activity may have led to a decline in biodiversity value or an increase depending upon environmental conditions, including the matrix of surrounding habitat and the type of agricultural activity undertaken previously. This category may also include land that is intentionally being restored to biodiverse grassland. These lands may be of low biodiversity value now but over time, provided appropriate management is in place, should be expected to become more biodiverse and develop the characteristics of semi-natural grassland.

4. **Land that is now grassland but has been recently deforested** where the forest system has yet to, or is unable to, regenerate. This may have been farmed, be still in use or abandoned due to poor soils etc. These lands may be of low biodiversity value now and into the future, or may offer biodiversity potential in terms of future reforestation and regeneration.

The process and level of detail needed in any assessment to determine whether a non-natural grassland is highly biodiverse will vary according to the type of grassland that exists on a site. Generally, however, species richness declines as a result of grassland improvement, in an agricultural sense. If grassland has been ploughed up, reseeded, fertilised etc it is likely to have low species richness. This can, therefore, be used as a first tier to determine which lands are most likely to be appropriate for biofuel feedstock production.

- **Understanding the quality of Non-Natural Grasslands: the Concept of Degradation**

Within the definition of non-natural grasslands in Directive 2009/28 it is required that these are 'not degraded'. The meaning of this clause is unclear and potentially difficult to assess particularly given the specific wording that non-natural grasslands be "species-rich and not degraded". Based on the Directive text there is a lack of clarity as to whether degradation refers to broad concepts of environmental degradation (e.g. as a result of pollution or over-grazing) or more specific agricultural degradation (e.g. as a result of soil loss, salinisation, over-grazing or agricultural abandonment). Although these overlap to some extent, environmental impacts will vary according to circumstances.

Under most circumstances degradation (as a consequence of intensive grazing, cultivation and associated soil damage/loss) will reduce species richness; although there may be some limited examples to the contrary. In practice it is, therefore, unlikely that many situations will occur where grasslands are species-rich and significantly degraded.

The greatest difficulty arises in cases such as overgrazing, where degradation is part of a continuum with diversity being progressively lost. Some species-rich grasslands may be found to be subject to short-term degradation as a consequence of inappropriate grazing regimes, but the ecological condition of many will recover once the pressure is removed, assuming the original species composition and underlying soil conditions remain intact. Therefore, limited losses of species richness associated with overgrazing in particular should not trigger the loss of a non-natural grassland's protection under the Directive.

Degradation in the context of non-natural grasslands, therefore, should be understood to be a near permanent loss of ecological value. If a loose interpretation of degradation is accepted there is a danger that it becomes a major loophole for those who wish to weaken the Directive's impact on grassland conservation.

When determining the quality of grassland long-term indicators of sward condition and in, particular, species composition and richness should be used rather than indicators of immediate condition/degradation. In other words, over-grazed or otherwise degraded grasslands should not be used for biofuel production if they are of high biodiversity value or are likely to regain high biodiversity value with more appropriate farmland management. Degradation is part of a continuum and this should be recognised within the Directive's application.

7 ANNEX - INTERPRETING DIRECTIVE 2009/28, GRASSLAND REFERENCES, THEIR IMPORTANCE AND INTERDEPENDENCE

Section Reference	Directive Text	Interpretation
Preliminary Recitals – No. 69	The increasing worldwide demand for biofuels and bioliquids, and the incentives for their use provided for in this Directive, should not have the effect of encouraging the destruction of biodiverse lands. Those finite resources, recognised in various international instruments to be of value to all mankind, should be preserved. Consumers in the Community would, in addition, find it morally unacceptable that their increased use of biofuels and bioliquids could have the effect of destroying biodiverse lands. For these reasons, it is necessary to provide sustainability criteria ensuring that biofuels and bioliquids can qualify for the incentives only when it can be guaranteed that they do not originate in biodiverse areas or, in the case of areas designated for nature protection purposes or for the protection of rare, threatened or endangered ecosystems or species, the relevant competent authority demonstrates that the production of the raw material does not interfere with those purposes……..Having regard, furthermore, to the **highly biodiverse nature of certain grasslands, both temperate and tropical, including highly biodiverse savannahs, steppes, scrublands and prairies, biofuels made from raw materials originating in such lands should not qualify for the incentives provided for by this Directive**. The Commission should establish appropriate criteria and geographical ranges to define such highly biodiverse grasslands in accordance with the best available scientific evidence and relevant international standards.	Recitals are of relevance providing context to the clauses in the Directive especially in the context of a legal challenge or ECJ review. Two key aspects to this: - sustainability criteria are intended to avoid destruction of biodiverse lands as a consequence of increased demand for biofuels and bioliquids; biodiverse lands should be preserved - That in this context it is highly biodiverse grasslands that are of importance, but that these could be temperate and tropical.
Article 17, Para 3	Biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 **shall not be made from raw material obtained from land with high biodiversity value**, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status…..	That the intention is to protect land with high biodiversity value, but for the purposes of the Directive the areas of value are determined by the lower order categories in the context of grassland point C. That the time horizon of January 2008 is key and any assessment of site characteristics needs to take this into account.
Article 17, Para 3, point C	(c) **highly biodiverse grassland** that is: (i) natural, namely grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes; or (ii) non-natural, namely grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status.	One of the types of land considered of high biodiversity value under the Directive is highly biodiverse grassland. The use of the phrase 'that is' in i or ii means that highly biodiverse grassland can be either natural or non-natural. However, based on the definition for natural grasslands (point i) this does not specifically

		need to equate to species richness, but maintain the natural species composition and ecological characteristics and processes. For non-natural grasslands these are specified as species-rich and not degraded. There is no hierarchy of importance between point i and ii implied by the wording.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption

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