

CORE AREAS OF WILD LAND 2013 MAP

Scottish Natural Heritage's Advice to Government – 16th June 2014

1. SNH was asked by the Scottish Government to advise on whether the Core Areas of Wild Land (CAWL) 2013 map effectively identifies wild land, and is fit for purpose of supporting the policy intentions set out in the draft SPP published in April 2013. This report presents our conclusions on the key issues, reflecting on the views offered to recent consultations, and a review of our work on mapping wildness and wild land. In undertaking this work SNH has drawn on the most up to date information available, including new data on tracks, built structures, and native woodland.

SUMMARY OF ADVICE AND RECOMMENDATIONS

2. Our advice concludes that:
 - i. **the general approach and method applied to produce the CAWL 2013 map is valid and provides a sound basis for identifying areas of wild land considered important in the national context at a strategic level;**
 - ii. **the robustness of our work, and confidence in a map of wild land and its potential policy application has been strengthened by refining the approach and updating the analysis and supporting information; and**
 - iii. **a new map of Wild Land Areas 2014 should replace the CAWL 2013 map. The new map (Map 1) identifies 42 wild land areas (19.5% of Scotland). In comparison with the CAWL 2013 map this combines two areas into one, divides one area into two, sets aside two areas and adds one new area. It also modifies the extent of a number of areas.**

Wild land areas 2014 - overview of key changes

3. The new analysis we have undertaken applies the same approach as that used to produce the CAWL 2013 map. To address comments raised by respondents to the consultation, it includes the use of more up to date and new datasets, and refines parts of the methodology to improve accuracy and consistency.
4. Overall, the new analysis confirms the broad pattern and extent of high wildness across Scotland shown by the original analysis, although there is a net reduction in the extent of wild land considered important in the national context. **Whilst some of this reflects a degree of change on the ground since the original analysis was prepared, much of the change simply reflects refinements to parts of the methodology and use of new and more recent data. It is not that the wildness of these areas has changed significantly since the original analysis was prepared, but that the outputs are now more accurate.**
5. As with the 2013 analysis we have set different guideline thresholds for north and south of the country. In the 2013 analysis a guideline of 1000ha was identified as the smallest patch size of land of the highest wildness classes in the CAWLs. Due to changing data sets the new analysis suggests an equivalent guideline of 650ha for describing the wildness characteristics of the CAWLs. In

providing our advice we have therefore taken all areas with a patch size above 1000 ha (the 2013 guideline) to meet the minimum size requirement as before but have reviewed six areas falling between 650 and 1000 ha to ensure that there is consistency in what is included in the map. In the south, due to the very different landscape context and the very small number of possible wild land areas we have set aside a specific guideline figure and have undertaken an area by area evaluation. These changes both place more emphasis on the judgements SNH makes on the identification of wild land areas.

6. The overall change in extent of wild land between the CAWL 2013 map and new map of wild land areas 2014 is of the order of circa 62,000 hectares, a reduction from 20.3% to 19.5% of Scotland identified as wild land. The new analysis confirms the identification of 38 of the original 39 CAWLs in northern Scotland. Of these, two areas (Knoydart - Morar and Kinlochhourn - Glen Quoich) have been combined into a single area, and one area (Monadhliath) has been separated into two. One area, Upper Almond, includes a very limited extent of the highest levels of wildness, and we conclude does not merit identification from a national perspective.
7. In southern Scotland, the same four areas identified as CAWLs were again the only areas to come forward with any potential as wild land. The new analysis suggests that the Merrick stands comparison with areas in northern Scotland and should be included. Talla - Hart Fells and Waterhead Moor - Muirshiel stand out from the rest of southern Scotland and have similarly been confirmed. The remaining area – Broad – Dollar - Black Laws – still contains some high wildness though the new analysis suggests that it is more fragmented and much less extensive than in the other three areas in southern Scotland. We therefore do not consider it merits identification as a wild land area.
8. The 2014 analysis also suggested eight potential new areas. Only Ben More on Mull is considered comparable with other areas identified by our approach and merits identification as a wild land area.
9. Of the remaining seven areas, four had been similarly identified during the 2013 work and set aside as not being of the highest merit (Balmacaan Forest, Ben Vorlich, Dundonell-Inverbroom, North Lewis Peatlands). It remains our view that these areas should not be included. Another three areas (Eabhal, East Pairc and Whiten Head), are located on the coast. The potential size of any one of these areas is limited compared to other wild land areas that have been identified close to them. We therefore conclude that these three areas should not be included on the 2014 map, though they may merit further consideration in the development plan process as part of any policy approach developed for areas of isolated coast.
10. In drawing these conclusions we have applied in a consistent way the GIS and statistical methodology, including informed judgments based on the analysis. However Ministers may wish to note that a small number of consultation responses included comments on the specific areas discussed above. The individuals who responded were generally supportive of including more areas, or increasing the area of wild land in a particular part of Scotland more generally. There was also a strong expression of reservation on the inclusion of part of the Talla-Hart Fells area by those with a particular interest. In contrast Dumfries and Galloway, Scottish Borders and Stirling Councils and the Regional Park Authority

were supportive of the inclusion of the areas relevant to them, while Highland and Comhairle nan Eilean Siar raised concerns with the total extent of wild land in their areas.

Other key conclusions

11. Our advice also contains the following conclusions on wild land and wild land mapping.

- iv. The concepts of wildness and safeguarding of wild land enjoy strong support from the public and many stakeholders in Scotland. Areas of wild land are widely acknowledged as important assets, providing a number of significant ecosystem services that support a range of social and economic benefits and outcomes.**
- v. Despite the inherent subjectivity of the concept, the physical qualities most strongly associated with wildness and identification of wild land can be mapped in a robust and repeatable way through applying a systematic and transparent methodology.**
- vi. A map of wild land areas important in the national context is required in order to provide greater clarity to all stakeholders and better inform decisions affecting them.**
- vii. The name ‘Core Areas of Wild Land’ resulted in some confusion and we therefore propose the use of the nomenclature of ‘Wild Land Areas’. We suggest that the application of this name should be restricted in use to those areas shown on the map.**
- viii. The map of wild land areas should be considered a useful and important strategic tool in decision making. Its application will be enhanced by two further pieces work that are being developed during 2014-15: descriptions of the character and nature of each of the areas, and revision of our interim guidance on assessing the effects of proposals on wild land which allows a case by case assessment of proposals in relation to wildness character.**

1. INTRODUCTION

- 1.1. In light of responses it had received to its consultations on the Main Issues Report for the National Planning Framework 3 (NPF3) and draft revised Scottish Planning Policy (SPP), the Scottish Government requested that SNH provide further advice on its Core Areas of Wild Land (CAWL) 2013 map. These documents proposed a policy approach that afforded protection to wild land areas identified on the CAWL 2013 map. The proposal attracted many comments on the map itself and the approach and methodology applied in its development.
- 1.2. **SNH was asked to advise on whether the map effectively identifies wild land, and is fit for purpose of supporting the policy intentions set out in the draft SPP.** Our advice therefore focuses on these issues. It does not consider the policy that may be applied to wild land areas identified by this map.

Seeking the views of others

- 1.3. To inform the preparation of this advice SNH has considered the results of a focused consultation undertaken in November and December 2013. The advice is also informed by our experience of mapping wild land developed in recent years, our understanding of the issues raised in our previous consultation on the Phase I mapping methodology (in 2012), and responses to the NPF3 and draft SPP consultations (in summer 2013).
- 1.4. The recent SNH consultation sought comment on three questions:
 - Q.1. *What is your view on the Core Areas of Wild Land 2013 map?*
 - Q.2. *Do you have specific comments on any of the areas of wild land identified?*
 - Q.3. *Are there any other issues regarding the Core Areas of Wild Land 2013 map, or its preparation, that you would like to raise?*
- 1.5. Responses were received from 410 sources including 15 local authorities and related organisations, 4 public bodies, 40 third sector organisations, 66 businesses, 11 professional and research bodies, and 274 individuals. An independent and detailed analysis of consultation responses was published on [SNH's website](#) in March 2014¹.
- 1.6. **We are confident that the consultation has been sufficient to enable all the key issues to be aired and for us to reach informed conclusions in our advice to Ministers.** We note that there were a small number of criticisms of the consultation process, in particular the relatively short consultation period (seven weeks), the absence of direct engagement with individual local communities, the lack of a revised map and insufficient supporting information to enable a fully informed response. While acknowledging these concerns, we consider that the recent consultation has been effective in terms of the range of stakeholders who took part, the number of responses received, and the extent of common and recurring themes identified by the analysis.

¹ Craigforth and Planning Aid for Scotland. SNH Core Areas of Wild Land 2013 Map. Analysis of consultation responses.(2014). Available at www.snh.gov.uk

Broad overview of responses

1.7. In preparing our advice we have considered all views and addressed the main issues raised in both the recent and earlier consultations. In addition to considering individual responses ourselves, we have drawn on the consultation analysis report prepared for us by Craigforth and Planning Aid Scotland.

Table 1: Consultation respondents categorised by support/opposition to the CAWL 2013 Map²

Groups	Generally Supportive	Opposed or Raising Substantial Concerns	Unclear or No View	Total
1: Local Authorities and related organisations	8	3	4	15
2: Public Bodies	1	2	1	4
3: Businesses	18	43	5	66
4: Professional Firms and Bodies	4	5	2	11
5: Third Sector Organisations	29	7	4	40
6: Public and Politicians	238	25	11	274
Total	298 (73%)	85 (21%)	27 (7%)	410

1.8. In simple quantitative terms the consultations show that a substantial majority support the CAWL 2013 map. Nevertheless there were also significant concerns expressed. A number of common themes can be identified from responses.

- With a few notable exceptions, the concept of wildness and wild land, its importance and benefit that it brings to Scotland, are widely acknowledged and strongly supported from across the range of interests. This echoes the evidence of public surveys and previous research work.
- There is broad and a high level of support for the notion of SNH's work on mapping wildness and wild land in general, including from some critical of the CAWL 2013 map itself.
- The strongest concerns have been expressed by the renewable energy industry, from comment on points of principle, expressing concern with the general approach and method applied, through to the 'adverse' implications of the use of the CAWL 2013 map in planning policy.

²Craigforth and Planning Aid for Scotland. *SNH Core Areas of Wild Land 2013 Map. Analysis of consultation responses.*(2014). Available at www.snh.gov.uk

- Community development interests have also expressed strong reservations to the concept of wild land and its implication for future land management and development of these areas.
- Local authorities as a group have offered contrasting views, with some expressing concern with the extent of wild land identified in their Council area, whilst others have sought new or extended areas.
- A significant majority of individuals expressed strong support for the CAWL 2013 map, including a substantial number who want to see further areas of wild land included.

1.9. Our advice is set out below in five sections covering;

- understanding of wildness as a particular quality reflected in our landscapes;
- the appropriateness of the CAWL 2013 map, including consideration of the main methodological issues;
- outcomes of new analysis and consideration of individual areas, presenting a new map of wild land areas; and
- the potential use of a map of wild land.

2. UNDERSTANDING SCOTLAND'S WILDNESS AND WILD LAND

- 2.1. To consider how effectively the CAWL 2013 map identifies wild land, it is helpful to clarify the concepts of wildness and wild land in order to address misconceptions that some of the issues raised appear to be founded on.

What is wildness and wild land?

- 2.2. Our approach distinguishes between wildness (the quality experienced), and wild land (those places where wildness is best expressed and can be experienced).
- 2.3. Wildness is an important quality found in many of Scotland's landscapes that occurs across a spectrum to varying degrees, from places where it has only limited expression to others where wildness is a dominant characteristic. It can be experienced in a range of settings, such as rocky gorges, the coast and even close to some of our more settled areas. Our Phase I analysis identifies levels of relative wildness across all of Scotland.
- 2.4. Wild land is considered to be areas where the quality of wildness is most strongly expressed and of sufficient extent to evoke the full range of perceptual responses. It is generally found in Scotland's more extensive areas of remote mountain and moorland, and most isolated sections of coast and uninhabited islands. For many people, it is one of our country's defining characteristics that distinguishes it from the rest of the UK and many other parts of Europe, and should be safeguarded. **The CAWL 2013 map identifies those areas where wildness is most strongly expressed, and whose quality and extent is such that they are considered of most importance in a national context.**
- 2.5. Scotland's wild land is not 'wilderness', such as is recognised elsewhere in the world and we do not use this term. Scotland's landscape reflects its past occupation, current use and management. Areas of wild land are not empty of human activities or influence, even those places considered by some to be largely natural, very remote and isolated. In these areas, any evidence of past and contemporary land management and use affects but does not remove the significant quality of wildness that can be experienced.
- 2.6. Scotland's wild land areas are also not redundant and unused, but subject to some land management and activity that provides a range of social, economic and environmental benefits. These include providing opportunities for recreation, hunting and fishing, attracting visitors to areas and sustaining tourism, supporting some of Scotland's most important and iconic wildlife, acting as a carbon store and carbon capture, and playing a key role in the hydrological cycle. **This range of ecosystem services supported by Scotland's wild land resource was recognised by many responses to the consultation.**
- 2.7. Reflecting this understanding, it is important to emphasise SNH's view that wild land does not denote 'no human management or development' as suggested by some respondents who considered that such a label would restrict all future development options. SPP (2010) recognises that wild land areas are sensitive to development but also that sensitively sited and located development can be accommodated within them whilst maintaining their qualities.

Can we capture wildness and wild land?

- 2.8. Wildness is a quality that people appreciate and value but we need common agreement on where wildness can be found and which are the most important areas.
- 2.9. From the outset we have acknowledged that capturing the quality of wildness and identifying wild land is challenging. Wildness is a subjective matter, as people respond differently according to their individual experience, perceptions and expectations. Therefore we have systematically mapped and assessed the physical attributes people associate with wildness (Table 2), to give a measure of the degree to which wildness is likely to be experienced. **Although some interpretation is still required we have been able to explain the judgements made and how any subjectivity is defined.**

Table 2: List of physical attributes and the perceptual responses they engender³

These Physical Attributes... result in... These Perceptual Responses	
<ul style="list-style-type: none"> ▪ A high degree of perceived naturalness in the setting, especially in its vegetation cover and wildlife, and in the processes affecting the land ▪ The lack of any modern artefacts or structures ▪ Little evidence of contemporary human uses of the land ▪ Landform which is rugged, or otherwise physically challenging ▪ Remoteness and/or inaccessibility 	<ul style="list-style-type: none"> ▪ A sense of sanctuary or solitude ▪ Risk, or for some visitors, a sense of awe or anxiety, depending on the individual's emotional response to the setting ▪ Perceptions that the landscape has arresting or inspiring qualities ▪ Fulfilment from the physical challenge required to penetrate into these places

The benefit of a map of wild land?

- 2.10. Government recognised wild land in planning policy 15 years ago and both NPF2 and current SPP refer to areas of wild land character as very sensitive to any form of development. However there is no authoritative map identifying the important areas, the nearest being SNH's map of search areas for wild land prepared for debate with stakeholders in 2002⁴. This map was thought to identify most of the significant and valued areas of wild land, based on informed judgement and some simple desk based analysis.
- 2.11. Use of the search areas map has grown considerably since its preparation 12 years ago, and has evolved from providing the starting point for review of where the main resource is most likely to be found, to informing decisions on individual proposals. This has highlighted its known limitations, in particular that it is a preliminary and incomplete search map and does not identify smaller areas and uninhabited islands. Neither was the scale of the map originally intended to identify the extent of areas with precision.
- 2.12. Government tasked SNH in 2011 with the identification of wild land areas and, recognising the potential policy application of this work, referred to it in the draft

³Scottish Natural Heritage. *Wildness in Scotland's Countryside policy statement*. (2002)

⁴Scottish Natural Heritage. *Wildness in Scotland's Countryside policy statement*. (2002)

SPP and NPF3 Main Issues Report. Our work has identified the distribution of this particular natural heritage resource, independent of consideration of any specific form of development or land use change, and knowing that it is not intended to create a formal designation. **We remain of the strong view that a new map of wild land to replace the 2002 map is required in order to provide greater clarity to all stakeholders on the location of areas important in a national context, to better inform decisions affecting them.**

- 2.13. We also recognise that other areas of high wildness exist that are not identified on the map as wild land, and some of these may be an important natural heritage resource but are not considered to be large enough as seen from a national perspective. SNH has published a map of relative wildness on our website and this will be replaced by an updated version based on the new analysis.

3. THE CORE AREAS OF WILD LAND MAP 2013

3.1. The consultations have revealed a wide range of views on the CAWL 2013 map from unconditional support and comments suggesting improvements, through to suggestions for fundamental revision and outright concerns with the map. This range of views were expressed by both those wishing to see more, and those wishing to see less, extensive area of Scotland identified as wild land.

Issues raised that relate to the methodology

- 3.2. Many of those expressing the strongest concern with the CAWL 2013 map founded this on issues with the methodology used to produce it. In summary the methodology takes a three phase approach.
- Phase I mapped the relative wildness of all of Scotland, combining the results of GIS analysis of a number of datasets used as surrogates for the physical attributes identified in Table 2.
 - Phase II applied statistical analysis to the phase I results to identify a long list of the largest areas with highest wildness. Using the established 2002 search areas for wild land as the reference point, we determined a guideline to distinguish areas with an appropriate extent of high wildness.
 - Phase III applied informed judgement to the results to first select and then define the specific areas that would be identified as wild land.
- 3.3. We have reviewed carefully the range of issues identified and set out our consideration of these in more detail in Annex A. Table 3 summarises the main changes made that have improved the robustness of the analysis.

Table 3: Summary of modifications and refinements to the methodology

	Issue Identified	Resulting change applied
Phase I Identifying relative wildness		
Perceived naturalness	Apply most up to date and relevant GIS datasets	<i>National Forest Inventory</i> updated to 2014. New <i>Native Woodland Survey for Scotland 2014</i> applied. New <i>GB Lakes 2014</i> and <i>SEPA's Loch water bodies (large and small) 2014</i> applied.
	Refine methodology to better reflect different woodland types	<i>FCS Native Woodland Survey of Scotland 2014</i> data distinguishes different woodland types, requiring new 'naturalness values' to be ascribed to them.
	Refine methodology to better reflect impounded water bodies	<i>GB Lakes and SEPA's Loch water bodies (large and small) 2014</i> data distinguishes artificial and heavily modified water bodies >0.5km ² and some smaller impounded water bodies, requiring new 'naturalness values' to be ascribed to them.
Rugged or challenging terrain	Prepare analysis at more consistent scale	Increased resolution of analysis (from 50m to 25m cell size), and new generalised Digital Terrain Model generated using the 'Mean aggregate function' rather than 'Cubic convolution function'.
	Refine methodology to better reflect coastal ruggedness	Review identified that coastal ruggedness values were disproportionate, and a cap applied to extreme values to better reflect the range of probable values.

Remoteness from public roads	Apply most up to date and relevant GIS datasets	<i>OS MasterMap</i> updated to January 2014 <i>Land Cover Map 2007</i> replaced <i>LCM 2000</i> data.
	Completeness of tracks dataset	<i>OS MasterMap</i> Topography layer used to capture hill tracks, footbridges and fords not recorded in the <i>OS MasterMap</i> Integrated Transport Network layer.
	Review working of cost layer calculating theoretical travel time	Review identified that categorisation of track gradient (greater or less than 20 degrees, to assess ability to cycle) was not accurate. This categorisation was removed, and the model's assumed speed of travel reduced from 15km/hr to 10km/hr to better reflect an average speed across a wider range of track gradients. Review identified that simply applying Cairngorms study cost value for fords was disproportionate (due to larger cell size used in the national study), so an average cost value was applied to reflect the intended average cost. Cost values previously applied to LCM2000 applied to LCM2007 data with the exception of fen, marsh and swamp, and coastal classes, given a slower travel speed.
	Apply a consistent approach to access by rail or ferry	Corrour Station, the only station not on the public road network, has been added as a point of public mechanised access.
Lack of built modern artefacts	Apply most up to date and relevant GIS datasets	<i>OS MasterMap</i> updated to January 2014. <i>OS Points of Interest</i> wind turbines updated to December 2013. <i>SNH</i> and <i>RenewableUK Wind turbine</i> data updated to December 2013.
	Prepare analysis at more consistent scale	Increased resolution of viewshed analysis for wind turbines (from 100m to 50m cell size), to match that of the other three feature layers. Individual turbine heights added to the DTM prior to analysis. A generalised Digital Surface Model was created at 50m resolution from the NEXTMap 5m DSM using a maximum height function to better capture the height of features rather than the averaging method used previously.
	Completeness of tracks dataset	Tracks from <i>OS Master Map</i> topography layer applied to capture hill tracks and forestry tracks not in the <i>OS MasterMap</i> Integrated Transport Network layer.
Phase II New search areas for wild land		
Guideline threshold for extent of highest wildness	Identification of separate guideline threshold for northern and southern Scotland	As with the 2013 analysis we have set different guideline thresholds for north and south of the country. In the 2013 analysis a guideline of 1000ha was identified as the smallest patch size of land of the highest wildness classes in the CAWLS. Due to changing data sets the new analysis suggests an equivalent guideline of 650ha for describing the wildness characteristics of the CAWLS. In providing our advice we have therefore taken all areas with a patch size above 1000 ha (the 2013 guideline) to meet the minimum size requirement as before but have reviewed six areas falling between 650 and 1000 ha to ensure that there is consistency in what is included in the map. In the south, due to the very

		different landscape context and the very small number of possible wild land areas we have set aside a specific guideline figure and have undertaken an area by area evaluation.
Selection of areas	Clarify the judgements applied in the selection of the areas	The rationale for the rejection of any potential areas suggested by the analysis has been documented in Annex B.
Phase III Selecting and defining areas of wild land		
Defining areas	Ensure consistency in the application of the guidelines for defining areas	The approach to defining areas has been reviewed to reflect the new data now available, and the extent of areas reviewed to achieve greater consistency.
	Recognise the contribution of the marine environment to areas of wild land	Sea lochs and off-shore islands have been included where this was considered to be of particular importance to the coherence of an area. Coastal wildness will be considered further as part of coastal characterisation work SNH is taking forward.
Corrections	Correct identified errors in mapping of individual areas	The incorrect inclusion of public roads and consented wind farms has been corrected for CAWL areas 10, 17, 28, 32 and 42.

Issues raised that relate to the resulting map

- 3.4. Separate from the detailed methodological issues raised, a number of responses also addressed the extent and spatial distribution of the wild land areas that resulted from its application. These included:
- the extent of coverage nationally, noting an increase from the 13% identified in the 2002 search areas map to the 20% identified by the CAWL 2013 map;
 - the lack of, or under-representation, of some particular types of landscape, such as the coast and uninhabited islands;
 - the large extent of wild land identified in northern Scotland, in particular in the Highland and Argyll and Bute local authority areas; and (conversely)
 - the limited extent of wild land identified in southern Scotland, under-representing the wider rural landscape such as the Southern Uplands, and smaller areas closer to centres of population.
- 3.5. These issues reflect a concern with the use of the map and of policy. The increase in total area reflects the more thorough analysis not overlooking areas. Nevertheless some remote coasts and islands are still excluded even though they have significant wildness character as they are generally of limited extent. Similarly small areas close to settlements are not extensive enough or wild enough for inclusion from a national perspective, although they may well have great significance to those for whom they are relatively accessible. The 'geographic imbalance' in the extent of the resource reflects the contrasting character of Scotland's landscapes, with land use and settlement more intensive in the south.
- 3.6. **We recognise the issues raised concerning the overall pattern and extent of wild land identified by the map. These are matters about the appropriate application of the map and we assume they will be best addressed through policy and guidance.**

Name of areas and the map

- 3.7. A few consultees suggested the map should be labelled as 'search areas for wild land'. This is not appropriate given the considerable analysis that has been undertaken and greater confidence we now have in the areas identified.
- 3.8. It was apparent that some confusion resulted from the naming of areas as 'Core Areas of Wild Land'. Some interpreted this as referring only to those parts of the wild land area with highest wildness, which often lie towards their centre. Others concluded that the name suggested that other areas of wild land exist elsewhere in addition to those identified on the map. **We recognise that the term 'core' can mislead and therefore have simplified the nomenclature to 'Wild Land Areas', to which the geographical name can be prefixed as necessary (for example 'Merrick Wild Land Area'). The term 'wild land' should be restricted in its use to those areas identified through this mapping work.**

Possible alternative approaches

- 3.9. We have also considered responses suggesting that an alternative approach to the mapping of wild land is required, but set these aside.
- *Do not identify areas of wild land at all but use the Phase I map of relative wildness to trigger further consideration of wildness.* This does not reflect the context nor differentiate the varying importance of different areas with the same relative wildness, and will not provide the same degree of clarity for decision makers.
 - *Identify indicative zones for wild land, without rigid boundaries.* It is not clear how we could identify areas without rigid boundaries, and would lack clarity and certainty that the current approach provides.
 - *Rank the areas of wild land identified as being of differing importance.* Although the areas of wild land identified do differ to a degree in terms of their character and how wildness is experienced within them, which may be reflected in the level of ecosystem services they offer, they are nonetheless all considered of value and important in the national context. Moreover, trying to distinguish the relative importance of different areas will be difficult to achieve.

Conclusion on the CAWL 2013 map overall

- 3.10. **The general approach and method applied to produce the Core Areas of Wild Land 2013 map is considered valid, and provides a sound basis for identifying areas considered important in the national context, at a strategic level.**
- 3.11. However, reflecting on all the issues discussed and the improvements to be gained by refining the methodology and applying improved data, we conclude that the robustness of the work, and confidence in a map of wild land would be strengthened by updating the analysis to reflect the contemporaneous position in 2014 and preparing a new map of wild land areas 2014.

4. A NEW MAP OF WILD LAND AREAS 2014

Preparing a new analysis

- 4.1. We have prepared a new map of wild land areas 2014 (Map 1). This is based on the same approach as that used to produce the CAWL 2013 map but applying the methodological and data improvements identified in Table 3 above to improve the accuracy and consistency of our analysis. All consented but not built wind farms (as at 16th June 2014) have been considered in Phase III, as described in Annex A paragraphs A.7 and A.12.
- 4.2. The new GIS and statistical analysis confirms the broad pattern and extent of high wildness across Scotland that was revealed by the original work although there are a number of differences. No one pattern of change has emerged. 25% of Scotland has seen a reduction in the level of relative wildness, and 11% has seen an increase. **It is important to note that whilst some of these differences reflect a degree of change on the ground since the original analysis was prepared, much of the change simply displays refinements in the methodology and use of improved data to better reflect reality.** The effect of the following changes explains some of the differences identified.
- The contribution of the perceived naturalness layer to relative wildness has been reduced where artificial, heavily modified or impounded water bodies are now identified, and increased where native woodland (in particular native pinewood) has been confirmed.
 - The contribution of the original rugged or challenging terrain layer to relative wildness was very limited as a consequence of disproportionate values at the coastal edge moderating other relative scores. Applying a maximum cap to more accurately reflect rugged terrain increases the relativity of other values, resulting in a general increase in upland scores. The higher resolution of analysis also reduces the averaging effect of the previous analysis and its tendency to reduce ruggedness.
 - The contribution of the remoteness layer to relative wildness has been reduced in areas where additional data identifies a more extensive network of tracks than previously. A particularly marked reduction in remoteness arises from the addition of Corroir railway station as a new point of public mechanised access in the Rannoch – Nevis – Mamores - Alder wild land area.
 - The contribution of the lack of built modern artefacts layer to relative wildness has been reduced where new development has been captured, such as new wind farms, but in particular the more extensive track network.
 - As the analysis is of relative scores, a change in relative wildness can also be suggested where no actual, methodological or data change has occurred due to changes occurring elsewhere.
- 4.3. The new analysis confirms the identification of 38 of the original 39 CAWLs in northern Scotland. Of these, two areas (Knoydart - Morar and Kinlochhourn - Glen Quoich) have been combined into a single area, and one area (Monadliath) has been separated into two. However, one area - Upper

Almond – includes a very limited proportion of highest levels of wildness, and we conclude does not merit identification from a national perspective.

- 4.4. In southern Scotland, the same four areas identified as CAWLs were again the only areas suggested as potential wild land. The new analysis suggests that the Merrick stands comparison with areas in northern Scotland and should be included. Talla - Hart Fells and Waterhead Moor - Muirshiel stand out from the rest of southern Scotland and have similarly been confirmed. The remaining area, Broad – Dollar - Black Laws, still contains some high wildness though the new analysis suggests that it is more fragmented and much less extensive than in the other three areas in southern Scotland. We therefore do not consider it merits identification as a wild land area.
- 4.5. The 2014 analysis also suggested eight potential new areas. Four of these areas had been similarly identified during the 2013 work and set aside as not being of the highest merit (Balmacaan Forest, Ben Vorlich, Dundonell-Inverbroom, North Lewis Peatlands). This remains our view. Three other areas are coastal in nature. The potential size of any one of these areas is limited compared to other wild land areas that have been identified close to them. We therefore conclude that these three areas should not be included on the 2014 map, though they may merit further consideration in the development plan process as part of any policy approach developed for areas of isolated coast. The final area, Ben More on Mull, is comparable with other areas identified and merits selection. Our consideration of these areas is set out in Annex B.
- 4.6. The new map of wild land areas 2014 identifies 42 wild land areas.
 - 41 of the 43 CAWLs are confirmed as wild land areas (including two that have been combined into one, and one area divided into two);
 - two CAWLs have been removed (areas 3 Broad – Dollar - Black Laws and 9 Upper Almond), because the land of highest wildness is less in extent and more fragmented than originally thought; and
 - one area not previously identified (Ben More on Mull) is considered to merit recognition as wild land.
- 4.7. The overall change in extent of wild land between the CAWL 2013 map and new map of wild land areas 2014 is of the order of circa 62,000 hectares, a reduction from 20.3% to 19.5% of Scotland identified as wild land. **We recommend that the new map of Wild Land Areas 2014 should replace the CAWL 2013 map.**

Review of individual wild land areas

- 4.8. Reflecting on the new analysis and considering specific issues raised in consultation responses, we have reviewed each of the areas shown on the new wild land areas 2014 map. Potential new areas suggested in consultation responses⁵ have also been reviewed, although comments not very specific about a location are difficult to consider (for example, 'areas of Angus'). **The great majority of these are not supported by our analysis.** Whilst there are places of wild land character these are relatively small in extent or fragmented

⁵Appendix 3 of Craigforth and Planning Aid for Scotland. *SNH Core Areas of Wild Land 2013 Map. Analysis of consultation responses.* (2014)

and we do not consider these areas are important in the national context. It may be appropriate for local authorities to consider these areas further at the local scale.

- 4.9. The main issues raised and our consideration of these are summarised in Annex C.

5. USING THE MAP

5.1. A small number of consultation responses remarked on the difficulty of offering informed comments on the CAWL 2013 map ahead of knowing the policy context to which it might apply. We reiterate that our work identifies the distribution of this particular natural heritage resource, independent of any questions of policy, but the following considerations are relevant to its use. In our view the map, as updated, is fit for the purpose of supporting the policy intentions set out in the draft SPP published in April 2013.

A strategic planning tool

5.2. **We consider that the map can be used most effectively as a strategic planning tool, reflecting that it is the product of a desk based analytical study.** This was recognised in the consultation paper and supported by many, including those critical of the map and concerned with the way it might be used. Its use at the strategic level could include the following.

- **Informing spatial plans:** The map can be applied to the identification and management of the resource through the development plan process.
- **Supporting strategic plans:** The identification of wild land areas could be considered when developing other strategic plans, for example the National Tourism Development Framework.
- **Promoting Scotland's assets:** The map identifies areas to which many visitors may be drawn and while not a promotional tool it offers authenticity for the promotion of certain destinations and for appropriate relevant investment.

Informing development management

5.3. **The map provides greater clarity and certainty for development management.** However the particular characteristics and intensity of wildness that is found will vary across a wild land area and the detail of that variation may not always be picked up in a desk based analysis and broad brush approach we have used to defining these areas. Consideration of individual proposals and their potential effect on wildness and areas of wild land will require individual field assessment.

5.4. **To support consideration of the wild land areas we will prepare descriptions of the valued character and nature of the individual areas of wild land. Our *Interim Guidance on the assessment of impacts on wild land* (2007) will also be revised to take account of the preparation of the map of wild land areas and the supporting descriptions.**

Future review and updating of the map

5.5. The new map confirms the broad pattern and extent of high wildness across Scotland shown by the original analysis. Although some have suggested the need to regularly review and revise the map of wild land areas, we consider that frequent review is unlikely to be necessary. Reflecting the policy intent of SPP, these areas will generally retain their high wildness and remain important in the national context unless a significant development or land-use change

takes place. Should these circumstances arise, we propose that we would revise the map in discussion with the Scottish Government.

- 5.6. The Phase I map of relative wildness, as updated, will be published on the SNH website as it is of wider interest in considering and monitoring landscape change more generally. Bearing this in mind, we will keep under review the need to update the Phase 1 map.

Scottish Natural Heritage
16th June 2014

ANNEX A - Refinements to the methodology applied to the CAWL 2013 map

A.1. The following key issues have been identified in responses and from a review of our work to prepare the CAWL 2013 map.

Phase I

A.2. **Use of old and increasingly dated GIS data:** Although some of the data sources used in the Phase I analysis date back to 1997, at the time the original analysis was prepared in 2010 these were the most suitable. However new and better datasets have since become available, as well as updates to those used. The new 2014 analysis applies these, which better reflects the present situation and reduces the need to take account of known changes individually in later Phases (for example new wind farms built since the Phase I analysis was prepared). The new data are listed in Table 3 above.

A.3. **Other methodology issues:** A number of other issues have been raised in responses, which we have considered and concluded that the methodology remains fit for purpose.

- *The application of a methodology developed for and applied to the Cairngorms National Park is inappropriate for a national scale survey.* The broad approach remains relevant, and we have adapted this to reflect the national scale and resolution of analysis, and new considerations such as the treatment of the coast.
- *Perceived naturalness is a perception and not a physical attribute that can be mapped, and the naturalness classes ascribed are not justified.* Perceived naturalness is a term that is simply indicating a non-specialist perception of land cover, recognising that many may not be aware of the ecological status of a habitat and assume them to be more natural than they are in fact. Classes have been applied taking account of similar studies in Scotland's two national parks.
- *Perceived naturalness does not adequately distinguish different forest types.* A new data set, the Native Woodland Survey of Scotland, has been applied that allows us to distinguish different types of woodland and forest in a more refined way.
- *Inclusion of ruggedness layer in principle, and that it does not include altitude.* We consider ruggedness is an important and relevant attribute that contributes to wildness.
- *Remoteness should be calculated from private tracks and lodges, not the public road.* The method captures public rather than private mechanised access, which is best reflected by assuming access from the public road network, or railway station or ferry port where no public road.
- *Remoteness layer overstates the remoteness of islands without public roads or ferry routes.* Islands should be considered as inaccessible unless connected by a public ferry. Therefore applying the maximum remoteness score is considered the most appropriate approach. We would note however that this does not significantly affect the map of wild land areas as unconnected islands

are too small to be considered wild land unless they make a particular contribution to an adjacent wild land area.

- *Visible artefacts should take account of forestry plantations, hydro drawdown and the type of road (whether single track or motorway).* This layer addresses built artefacts rather than all evidence of human use, and variable issues such as loch drawn-down or level of road use are difficult to assess. However impounded waters and forestry plantations are considered in the perceived naturalness layer, and taken into consideration in Phase III.

Phase II

A.4. **Application of different guideline size thresholds in the north and south:**

Although the need for a different approach to wild land in the more settled landscapes south of the Central Belt was recognised by consultees, the justification for the 1000 hectare and 500 hectare size guideline in the north and south respectively was questioned.

A.5. These figures were determined by assessing the extent of contiguous patches of high wildness in the existing search areas of wild land used as a reference point. They were developed as a simple descriptive indicator to help inform judgements about the extent of high wildness required for an area to be identified as wild land.

A.6. As with the 2013 analysis we have set different guideline thresholds for north and south of the country. In the 2013 analysis a guideline of 1000ha was identified as the smallest patch size of land of the highest wildness classes land in the CAWLS. Due to changing data sets the new analysis suggests an equivalent guideline of 650ha for describing the wildness characteristics of the CAWLS. In providing our advice we have therefore taken all areas with a patch size above 1000 ha (the 2013 guideline) to meet the minimum size requirement as before but have reviewed six areas falling between 650 and 1000 ha to ensure that there is consistency in what is included in the map. In the south, due to the very different landscape context and the very small number of possible wild land areas we have set aside a specific guideline figure and have undertaken an area by area evaluation. These changes both place more emphasis on the judgements SNH makes on the identification of wild land areas.

Phase III

A.7. **Consideration of consented but not built wind farms:** The methodology has been criticised for taking account of consented but not built wind farms, excluding their sites from identified wild land areas when defining their extent. This is the only potential 'future development' that has been considered in this way, reflecting its potential impact on wild land qualities. Nevertheless, we recognise the issue raised by many that should a consented scheme not be built for any reason, an area of high wildness will remain but go unrecognised on the map. This will need to be reflected in any review of the map.

A.8. **Inclusion of artefacts and evidence of management in identified wild land:**

Some responses highlighted the presence of development and management within or visible from wild land. Scotland's wild land is not empty of human activities or influence, although many features such as former shielings and

bothies are small in scale and their effect on the overall wildness of an area is limited. More significant structures, such as isolated estate lodges, hydro infrastructure or transmission lines crossing remote areas would unreasonably fragment areas, and it would be impractical to exclude all such evidence. We have applied our approach pragmatically, and considered the particular issues when reviewing the areas.

- A.9. **Inclusion of lower wildness within the boundaries of wild land areas:** A number of respondents considered that the inclusion of areas with lower scores of relative wildness as part of wild land devalued the areas and, contrary to Government policy, acted as ‘buffers’ to the areas of high wildness that lie at their heart. It is our view that the experience of areas of the highest wildness is inherently dependent on an adjacent contiguous area of lower wildness. Generally, wildness is a quality which strengthens progressively as a person moves into an area. Our approach to identifying areas of wild land therefore seeks to capture this whole. The inclusion of lower wildness is therefore intrinsic to the area itself, and not a buffer.
- A.10. Related to the above, it should be noted that we have taken a desk-based approach to defining areas, applying a set of guidelines consistently. We have deliberately avoided seeking to define detailed, refined boundaries since that would not be appropriate for a map identifying a resource at the strategic level.
- A.11. **Introducing judgement and subjectivity to the process:** Some concerns have been expressed with the application of judgement to the results of the GIS and statistical analysis, departing from a repeatable and quantitative process by introducing individual or organisational subjectivity. We have been clear from the outset that the GIS and statistical analysis was an aid to decision-making, not an end in its own right. Whilst it is a robust analysis it has some limitations and can only ever be as good as the data input, the rules applied and criteria that have informed it. We therefore remain of the view that it is appropriate to apply judgement informed by the results of the analysis and that we have been reasonable and consistent in those applied.
- A.12. **Absence of fieldwork to ground truth the areas:** The reliance on desk-based analysis has been criticised by some, often highlighting that the areas of wild land include development or evidence of management that should be excluded from them. Section 2 addresses the nature of Scotland’s wild land and evidence of human management and use to be found in these areas. The general point however is that detailed field survey has not been undertaken and is not considered necessary as the map is intended to be used as a strategic tool, discussed in section 5. This is emphasised by our consideration of consented and/or built wind farms, whose potential effects have been taken account of by excluding the physical footprint of the wind farm from the wild land area and identifying a simple boundary using features recognisable on the ground rather than detailed consideration of the significance of their effect on wildness.
- A.13. **Minor corrections to the mapping:** Some existing or consented developments that should have been excluded from the areas identified on the CAWL 2013 map were mistakenly included. The new 2014 map of wild land has corrected these.

ANNEX B – Possible wild land areas

Nine areas identified by the new analysis as having a patch size of contiguous Jenks class 7 and 8 of less than the guideline applied in the CAWL 2013 map. (Wild land area reference numbers refer to the new map).

Wild land area	Jenks 7&8 largest patch size	Total Jenks 7&8 included in final area	Total Potential Area	Commentary
South Scotland				
2. Talla - Hart Fell (CAWL area 2)	469	1,245	9,335	<ul style="list-style-type: none"> The new analysis shows the area contains fragmented blocks of the highest wildness Jenks classes (circa 13% of the identified area), within an extensive area of medium wildness. The largest contiguous patch of class 7 and 8 falls just short of the previous 500ha guideline. In comparison with the CAWL 2013 analysis the relative wildness values across most of the area are lower, reflecting new data on tracks, impounded waters and general reduction in the human artefacts values. Tall-Hart Fell remains a relatively extensive area of wild land character (adjacent to the Broad – Dollar - Black Laws area from which it is separated by a minor road), one of only three areas that retain any significant extent of strong wildness in southern Scotland (the others being the Merrick and Waterhead Moor – Muirshiel). It merits identification as wild land considered important in a national context.
Broad - Dollar - Black Laws (CAWL area 3)	20	160	9,883	<ul style="list-style-type: none"> The new analysis shows the area contains a fragmented and minimal extent of the highest wildness Jenks classes (less than 2% of the identified area), within an extensive area of medium wildness. The largest contiguous patch of class 7 and 8 at only 20 ha is minimal, significantly outwith the scope of either guideline. In comparison with the CAWL 2013 analysis the relative wildness values across most of the area are lower, reflecting new data on tracks, impounded waters and general reduction in the human artefacts values. Broad – Dollar – Black Laws has wild land character and will contribute to the sense of wildness experienced in the adjacent Talla – Hart WLA, from which it

				is separated by a minor road. But the very small extent of the highest wildness is not considered sufficient to merit its identification as a wild land area of the highest importance in a national context.
4. Waterhead Moor - Muirshiel (CAWL area 5)	398	694	5,016	<ul style="list-style-type: none"> The new analysis shows the area contains a significant block of the highest wildness Jenks classes (circa 14% of the identified area), within an extensive area of medium wildness. Whilst the largest contiguous patch of class 7 and 8 is less than the previous 500ha guideline, it continues to stand out from much of the rest of southern Scotland. In comparison with the CAWL 2013 analysis the relative wildness values across most of the area are lower. This relatively small area of wild land character is significant given its Central Scotland context, and is one of only three areas that retain any significant extent of strong wildness in southern Scotland (the others being the Merrick and Talla-Hart Fell). It merits identification as wild land considered important in a national context.
North Scotland				
Upper Almond (CAWL area 9)	245	872	26,772 (CAWL 2013 area)	<ul style="list-style-type: none"> The new analysis shows the area contains a limited extent of the highest wildness Jenks classes (circa 3% of the previous CAWL area), within a much more extensive area of medium wildness. The largest contiguous patch of class 7 and 8 of only 245 ha is significantly below the scope of either guideline, and the proportion of total wildness is significantly less than any of the other north Scotland areas. In comparison with the CAWL 2013 analysis there is a broad reduction in relative wildness across most of the area, reflecting new data on tracks, impounded waters and general reduction in the human artefacts values. Upper Almond remains one of wild land character but in comparison with other mainland areas in the north, the extent of strong wildness is very limited in extent. The largest patch of highest wildness falls significantly below either guideline, and is the only mainland area with less than 1000ha in total of the highest classes to be considered. The relatively very small extent of highest wildness is not considered sufficient to merit its identification as a wild land area of the highest importance in a national context.
11. Lyon - Lochay (CAWL area 12)	718	1,171	7,297	<ul style="list-style-type: none"> The new analysis shows the area contains a small but significant extent of the highest wildness Jenks classes (circa 16% of the identified area), within a more extensive area of medium wildness. The largest contiguous patch of class 7 and 8 falls is below the previous 1000 ha guideline, and just above that

				<p>identified by the 2014 analysis. In comparison with the CAWL 2013 analysis there is a broad reduction in relative wildness across most of the area, reflecting new data on impounded waters and general reduction in the human artefacts values.</p> <ul style="list-style-type: none"> The Lyon – Lochay area is one of the smaller mountain areas of wild land character in the north, that will contribute to the sense of wildness experienced in the adjacent Breadalbane – Schiehallion and Ben Lawers areas (these areas are only separated by relatively minor roads). The extent and wider contribution of this resource, support its inclusion.
33. Quinag (CAWL area 31)	925	2,230	10,446	<ul style="list-style-type: none"> The new analysis identifies a significant extent of the highest wildness Jenks classes (circa 21% of the identified area), within an extensive area of medium wildness. The largest contiguous patch of class 7 and 8 falls just short of the previous guideline, but above that identified by the 2014 analysis. In comparison with the CAWL 2013 analysis there is a broad reduction in relative wildness across most of the area (more so in the west), reflecting new data on tracks and impounded waters and general reduction in the human artefacts values. This is a medium sized area of wild land character with a significant extent of the highest wildness. Although it falls just short of the previous guideline, it significantly exceeds the 2014 guideline. The extent of this resource, coupled with its inclusion in the SAWL 2002 map supports its inclusion.
38. Ben Hope - Ben Loyal (CAWL area 35)	688	1,912	22,085	<ul style="list-style-type: none"> The new analysis identifies a small, fragmented area of highest wildness Jenks classes (circa 9% of the identified area), within an extensive area of medium wildness. The largest contiguous patch of class 7 and 8 falls below the previous guideline, but as the smallest extent within any of the search areas establishes the 2014 guideline. In comparison with the CAWL 2013 analysis there is abroad reduction in relative wildness across most of the area. The Ben Hope – Ben Loyal area includes a significant extent of high wildness within an extensive area of medium wildness. The overall extent of this resource, coupled with its inclusion in the SAWL 2002 map supports its inclusion.
41. Hoy (CAWL area 39)	742	888	5,019	<ul style="list-style-type: none"> The new analysis identifies a small area of highest wildness Jenks classes (circa 18% of the identified area), within a relatively small area of medium wildness. The largest contiguous patch of class 7 and 8 falls below the previous guideline, but above that identified by the 2014 analysis. In

				<p>comparison with the CAWL 2013 analysis there is a broad reduction in relative wildness across most of the area.</p> <ul style="list-style-type: none"> The Hoy area is of relatively limited extent that reflects to some degree its island location. This island context, and absence of other wild land areas in the wider area, support its inclusion.
42. Ronas Hill & North Roe (CAWL area 40)	628	743	4,120	<ul style="list-style-type: none"> The new analysis identifies a small area of highest wildness Jenks classes (circa 18% of the identified area), within a relatively small area of medium wildness. The largest contiguous patch of class 7 and 8 falls below either guideline. In comparison with the CAWL 2013 analysis there is a broad reduction in wildness across most of the area, particularly in the north reflecting new data on tracks. The Ronas Hill and North Roe area is of relatively limited extent that reflects to some degree its island location. Although falling below both guidelines, its island location and absence of other wild land areas in the wider area, support its inclusion.
Potential new areas identified⁶				
8. Ben More	791	1,365	8,720	Suggested by 2014 analysis only. A large area of highest wildness Jenks classes (circa 16% of the identified area), within an extensive area of medium wildness. The area includes the Ben More massif up to and across Glen Cannel to include the hill of Beinn Talaidh in the east and Beinn Talaidh. Area is considered to merit identification as a wild land area.
<i>Ben Vorlich</i>	<i>1,407</i>	<i>n/a</i>	<i>n/a</i>	Suggested by 2013 and 2014 analysis. An extensive area of highest wildness Jenks classes (potentially up to 1688 ha in total). Any wild land would be largely confined to the Ben Vorlich massif and area north of Glen Artney. High wildness but not considered to be of the highest merit.
<i>North Lewis</i>	<i>4,912</i>	<i>n/a</i>	<i>n/a</i>	Suggested by 2013 and 2014 analysis. An extensive area of highest wildness Jenks classes (potentially up to 5910 ha in total). Set aside due to evidence of peat cutting activity. High wildness but not considered to be of the highest merit.
<i>Balmacaan</i>	<i>1,209</i>	<i>n/a</i>	<i>n/a</i>	Suggested by 2013 and 2014 analysis. An extensive area of highest wildness Jenks classes identified in its own right, but would be an extension of adjacent Area 24. Set aside due to extent of hydro infrastructure evident. High wildness

⁶ Note that for areas considered to be wild land a defined area has been identified, but for areas suggested by the analysis and set aside no boundary has been defined and therefore no figure for the extent of total Jenks 7&8 or total area can be calculated.

				but not considered to be of the highest merit.
<i>Eabhal, North Uist</i>	1,345	<i>n/a</i>	<i>n/a</i>	Suggested by 2014 analysis only. An extensive area of highest wildness Jenks classes (possibly up to 1549 ha in total), whose coastal peninsular location constrains potential extent. High wildness but given its context and extent of wild land areas already identified in the Outer Hebrides we have concluded that this area should not be included.
<i>Dundonell-Inverbroom</i>	902	<i>n/a</i>	<i>n/a</i>	Suggested by 2013 and 2014 analysis. A large area of highest wildness Jenks classes (potentially up to 1344 ha in total), set aside as relatively limited in extent compared with the adjacent areas of Fisherfield - Letterewe - Fannichs and Rhiddoroch – Beinn Dearg - Ben Wyvis. High wildness but not considered to be of the highest merit..
<i>Whiten Head</i>	887	<i>n/a</i>	<i>n/a</i>	Suggested by 2014 analysis only. A large area of highest wildness Jenks classes (potentially up to 1339 ha in total), whose coastal peninsular location constrains potential extent. High wildness but given its context and extent of wild land areas already identified in this part of northern Scotland we have concluded that this area should not be included.
<i>East Pairc</i>	741	<i>n/a</i>	<i>n/a</i>	Suggested by 2014 analysis only. A large area of highest wildness Jenks classes (potentially up to 795 ha in total), whose coastal peninsular location constrains potential extent. High wildness but given its context and extent of wild land areas already identified in the Outer Hebrides we have concluded that this area should not be included.

Annex C – Key issues noted for identified wild land areas

WILD LAND AREA	Comments suggesting enlargement of area	Comments suggesting reduction in area	Comment and revisions
<p>1. Merrick (CAWL area 1)</p>	<p>a. Extend to north (Loch Doon), south (toward A712) and east (Rhinnns of Kell).</p> <p>b. Include Galloway Forest Dark Skies Park and core and buffer zones of Galloway and Southern Ayrshire Biosphere Reserve.</p>		<p>a. Loch Doon and Rhinnns of Kell are physically separated from the Merrick by significant areas of plantation forestry.</p> <p>b. The area includes most of the open ground in the core area of the Dark Skies Park and the Biosphere Reserve’s Merrick core (not the Rhinnns of Kell core), although their boundaries follow the forest edge more precisely. There is merit to revise the simpler wild land boundary to better match these core areas by including Buchan Hill above Glen Trol.</p>
<p>2. Talla - Hart Fells (CAWL area 2)</p>	<p>a. Include high ground at head of Ettrick Valley (including. Ettrick Pen to Bodesbeck law. Combine with Area 3 to encompass Moffat Hills SSSI.</p> <p>b. South boundary excludes contiguous areas of Jenks class 7. NW boundary</p>	<p>c. Earlshaugh area forms a western arm, remote from the ‘central’ area, its inclusion is inconsistent with other areas and boundary appears arbitrary.</p>	<p>a. This area is separated from Area 3 by a minor public road, and the Ettrick Valley by the A708 (which by itself does not fulfill the criteria for selection).</p> <p>b. Boundaries have been sought to follow readily identifiable features on the ground.</p> <p>c. Inclusion of area surrounding Earlshaugh is primarily Jenks class 5 and 6, an important component of the wider area and whose inclusion is consistent with our approach. Evidence of development and management in the wider landscape is not so significant.</p>

	irregular and encompasses lower scoring area.		
Broad - Dollar-Black Laws (CAWL area 3)			a. Area contains limited and fragmented areas of high wildness that are not extensive enough to merit identification.
3. North Arran (CAWL area 4)		a. Neighbouring landscapes such as the Kintyre peninsular Isle of Bute and Arran coast have a more developed character.	a. Noted.
4. Waterhead Moor - Muirshiel (CAWL area 5)			a. Exclude access tracks at the eastern edge around Mistylaw Muir. Minor changes to boundary reflect a better understanding of the physical features on the ground.
5. Jura, Scarba Lunga and Garvellachs (CAWL area 6)		a. Eastern boundary seems very close to habitation and the public road.	a. Very small alteration to clarify the exclusion of a cluster of farm buildings at Kinuachdrachd which is located < ½ km from the existing boundary. b. Small exclusion of track at narrowest point making the area of wild land connected only via the waters of Loch Tarbert.
6. Ben Lui (CAWL area 7)	a. Name of area suggests there is a Beinn Ime but no evidence for this on the ground or maps.	b. Exclusion of Glen Fyne due to dams, tracks and power lines, pylons, house, quarry and Lairig power station.	a. Name changed to reflect area does not contain Beinn Ime. b. Exclusion of human artefacts within Glen Fyne including Glenfyne Lodge, dam, forestry and associated access tracks. c. Exclusion of far west limb to draw back to the dam, power station and tracks at Lochan Shira.
7. Ben More - Ben Ledi (CAWL area 8)	a. Inclusion of the higher land around Ben Lomond and south of Loch	b. Exclusion of Monachlye Glen, Balquhadden due to Sitka Spruce plantation.	a. Land to the south of Loch Arklet including Ben Lomond has not been included within this area of wild land as it is separated by a public road. Although this area displays strong wildness (scoring Jenks class 6 and 7) it is not extensive enough in itself to merit identification.

	Arklet.	c. Exclusion of Fathan Glinne and Gleann Dudh due to presence of extensive fencing, roads and farm buildings.	b. Exclusion of extensive area of plantation forestry within Monachlye Glen and the area of high wildness to the east. c. Exclusion of area to the south of Loch Voil to exclude a large farm building and its access track which are located at the edge of this area of wild land.
8. Ben More			New area identified by new analysis.
Upper Almond (CAWL area 9)			a. Area contains limited and fragmented areas of high wildness that are not extensive enough to merit identification.
9. Loch Etive mountains (CAWL area 10)		a. Inclusion of Cruachan power station. b. The area includes plantation forestry according to the NFI. The influence of forest management and associated infrastructure is evident within glens.	a. The Cruachan Reservoir has been excluded due to it being identified as a heavily modified water body and being located at the edge of the area of wild land. b. Exclusion of plantation forest on west side of Loch Etive.
10. Breadalbane - Schiehallion (CAWL area 11)	a. Suggest combining Area 12 and 11 as they are only separated by a track.	b. Area includes two dammed un-natural water bodies. c. Exclude the railway line.	a. These areas are separated by the presence of a public albeit minor road. b. The dams of both Loch Lyon and Loch an Daimh have been excluded. c. The railway line has not been included within this area of wild land. Minor change in Bridge of Orchy area to re-align boundary with the railway line. d. Inclusion of some native woodland at the edges where they provide a more readily identifiable boundary.
11. Lyon - Lochay	a. Suggest combining Area		a. These areas are separated by the presence of a public albeit minor road.

(CAWL area 12)	12 and 11 as they are only separated by a track.		
12. Ben Lawers (CAWL area 13)			
13. Moidart - Ardgour (CAWL area 18)	a. Include more of Ardgour, Morvern and Ardnamurchan.	b. Exclusion of the commercial plantations within Glen Hurich. c. Exclude the railway line.	a. Morvern and Ardnamurchan have not been included within this area of wild land as they are separated by public roads. Much of Ardgour is already included within this area of wild land. b. Large coniferous plantation forests within Glen Hurich have been excluded due to more certainty about the nature of the woodland as identified within the NWSS, whilst the native woodlands along Loch Shiel remain included. c. The Lochailort to Glenfinnan railway line and its alignment along the shores of Loch Eilt have been used as a readily identifiable boundary feature at the northern extent of the area of wild land.
14. Rannoch - Nevis - Mamores - Alder (CAWL area 14)		a. Exclude the railway from this wild land area b. Exclude the Blackwater reservoir as it is unnatural	a. Rannoch station has been considered within the remoteness model as points of access, however as it is not possible to leave the train at any other point along the line within the area of wild land, the railway itself has not been excluded. b. The dam on the Blackwater reservoir and its associated access tracks have been excluded. The waters themselves penetrate deep into the area of wild land where a strong sense of wildness can be found.
15. Cairngorms (CAWL area 15)	a. Extend to include the Abernethy Forest and the upper edges of the Rothiemurchus forest.	c. Exclude plantation forest in Upper Glen Feshie, Glen Feshie Lodge and road. d. Exclusion of Gaick Lodge, road, dam and plantations.	a. Parts of the Abernethy and Rothiemurchus Forests have been included. b. This area of wild land is separated from Area 14 by the A9 trunk road. c. Minor alteration to exclude Glen Feshie lodge at the very edge of the area of wild land. The woodland within Glen Feshie is predominantly native woodland as identified within the NWSS

	b. Join with Area 14 where they currently run either side of the Drumochter Pass.		and merits inclusion. d. Exclusion of Gaick Lodge, hydro development including dam, access track and plantation forestry due to more certainty about the nature of the woodland as identified within the NWSS. e. Exclusion of Dalmunzie House (Glen Shee) and Loch Cuiach dam and associated tracks.
16. Lochnagar - Mount Keen (CAWL area 16)	a. Extend to include upper woodlands of Ballochbuie b. Suggest following the forest edge in Coire Fee	c. Exclude Glas-allt Sheil, Spittal of Glenmuick and Loch Muick due to tracks. d. Exclude plantations in upper Glen Prosen and Upper Glen Finlet.	a. Some of the upper reaches of the Ballochbuie Forest have now been included in this area wild land due to their separation from the A93 and due to more certainty about the nature of the woodland as identified within the NWSS. b. The distinct upper reaches of Glen Doll and its surrounding corries currently demarcate a recognisable edge to this area of wild land. c. Glas-allt Sheil and Loch Muick warrant inclusion in this area of wild land as they display strong wild land characteristics (mainly Jenks class 5 with the tracks being 4). Spittal of Glenmuick was not within area. d. The plantation forestry within Glen Prosen and Upper Glen Finlet has been excluded due to more certainty about the nature of the woodland as identified within the NWSS. e. Revision of southern boundary to reflect the presence of a high number of hill tracks reducing wildness.
17. Rum (CAWL area 20)	More of Rum should be included.		Inclusion of west Rum to include an area with high wildness around the coast as far north as Kilmory Glen (scoring Jenks 8, 7 & 6).
18. Kinlochhourn - Knoydart - Morar (CAWL areas 19 and 21)	a. Extend the area to the east to include Beinn Loinne and about half of Loch Loyne.		a. Loch Loyne has not been included as it is located at the edge with lower wildness values, and is a heavily modified water body. Beinn Loinne is a relatively small area separated from this area of wild land by the Cluanie Lodge track. b. The consented Coire Glas pump storage scheme will include a large impoundment with associated tracks and intake

	<ul style="list-style-type: none"> b. There should be an extension to the north to include Ben Tee and Coire Glas. 		<ul style="list-style-type: none"> structures, that excludes this area. c. Exclusion of northern limb of Loch Quoich due to a collection of artefacts such as a heavily modified water body, (with evidence a draw-down) prominent access track and forestry blocks. d. Removal of an area of plantation forestry associated with the Ratagan Forest south of Loch Duich due to more certainty about the nature of the woodland as identified within the NWSS. e. Include the waters of Loch Hourn (excluding Kinlochhourn).and the upper reaches of Loch Nevis where this area of wild land encompasses both shores. With the inclusion of the waters of Loch Hourn (excluding Kinlochhourn), these two areas are contiguous and have been merged.
<p style="text-align: center;">19 & 20. Monadhliath (CAWL area 17)</p>	<ul style="list-style-type: none"> a. Extend north west from Stronelaig Lodge, north to Beinn Bhuraich, and north east to Carn Glac an Eich b. The area should join with Area 14 over Loch Lagan 	<ul style="list-style-type: none"> c. Large areas around Aberchalder Forest should not be included d. The Corrieyairaick Pass should be excluded due to the number of associated manmade artefacts e. Commercial afforestation at Glen Roy should be excluded. 	<ul style="list-style-type: none"> a. The area to the north west of Stronelaig Lodge has not been included, although it currently displays strong wild land characteristics, due to the consented Dumnglass wind farm being located in this area. b. The main A86 separates this wild land area from area 14. c. The areas around Aberchalder Forest display strong wild land characteristics and remain included. d. As a consequence of the consenting of Stronelaig wind farm, the central part of the CAWL has been removed to leave two discrete smaller areas of wild land. The Corrieyairaick Pass has also been excluded. e. The road and large blocks of plantation forestry within Glen Roy have been excluded due to more certainty about the nature of the woodland as identified within the NWSS.
<p>21. South Uist Hills (CAWL area 43)</p>			<ul style="list-style-type: none"> a. Inclusion of off shore islands of Stulaigh due to their high wild land characteristics and contribution to the larger area of wild land.
<p>22. Duirinish (CAWL area 23)</p>	<ul style="list-style-type: none"> a. Inclusion of Trotternish 	<ul style="list-style-type: none"> b. The water treatment works and access track in Fasach 	<ul style="list-style-type: none"> a. Trotternish has not been identified as an area of wild land due to it not containing a large enough extent of the highest wildness scores (negligible cells of class 8 and a disparate

	peninsula.	should be checked.	scattering of class 7) in accordance with our phase 2 analysis. b. The water treatment works and its access track were excluded from the 2013 CAWL map.
23. Cuillin (CAWL area 22)			Inclusion of the Blabheinn massif in Strathhaird due to its contribution to the red Cuillin range – comparable to the lower slopes surrounding Loch Ainort.
24. Central Highlands (CAWL area 24)	a. Extended to the east to include the upper Orrin valley, Gleann Goibhre, Erchless Forest and upper Breackachy Burn.	b. Confirm the rationale for the inclusion of classes 5 & 4 in north east, whilst excluding classes 6 & 5 in the south. c. Exclusion of part of Glenstrathfarrar that contains pylon line, road, hydro, and Monan and Beannachran dams.	a. Extension justified to the east to include Erchless Forest as this area displays Jenks classes 6 & 7, but stopping short of the constructed track along Glen Goibhre. b. The Jenks analysis informs the identification of the boundary rather than determines it. There has been a negligible amount of class 4 included within the north of this area of wild land (where the Fairburn wind farm is located). The exclusion of an area of 6 & 5 in the south is to allow for a rational boundary following a readily distinguishable ridgeline. c. Excluded the Loch Monar dams and other dams along Glen Strathfarra, power station, lodge, access track and overhead powerline. d. Inclusion of additional native woodland within Glen Affric as confirmed by NWSS. e. Extension of area to include eastern shore of Loch Dughail and its associated native woodland.
25. Applecross (CAWL area 25)	a. Increase area to include the other half of the Applecross peninsula.	b. Applecross peninsular does not warrant inclusion as wild land area due to the opportunities for re-population around the coast.	a. The southern half of the peninsula does not contain an area of highest wildness of sufficient size, and is separated from the wild land area by a public road. b. The coastal edge is not included.
26. Coulin and Ledgowan Forest (CAWL area 26)			a. Inclusion of woodland within the western edge of this area of wild land which is now confirmed to be predominantly semi-natural.

<p>27. Flowerdale - Shieldaig Torridon (CAWL area 27)</p>			<p>a. Minor alteration to confirm exclusion of Loch Bad an Sgalaig dam. Although parts of the loch demonstrate a degree of visible draw down, other parts appear 'natural' in their upper reaches thus the loch in its entirety does not warrant exclusion from the area.</p> <p>b. Inclusion of woodland within the Beinn Eighe NNR at the eastern edge of this area of wild land which is now confirmed to be predominantly semi-natural as identified within the NWSS.</p> <p>c. Minor alteration to include small area of woodland outside Lower Diabaig confirmed to be predominantly semi-natural as identified within the NWSS.</p>
<p>28. Fisherfield - Letterewe - Fannichs (CAWL area 28)</p>		<p>a. Lochluichart and its extension are located within this wild land area.</p>	<p>a. The Lochluichart wind farm has been excluded from this area of wild land.</p>
<p>29. Rhiddoroch – Beinn Dearg - Ben Wyvis (CAWL area 29)</p>		<p>a. Exclusion of Morefield Quarry</p> <p>b. Exclusion of the upper north and east facing slopes of Carn Chuinneag, and Glencalvie and Alladale Lodges.</p>	<p>a. Morefield quarry near Ullapool should be excluded due the nature of the development and it being close to the edge of this area of wild land.</p> <p>b. Exclusion of Glencalvie, Alladale and Corriemulzie lodges which lie at the edges of this area of wild land are justified.</p>
<p>30. Harris - Uig Hills (CAWL area 41)</p>		<p>a. There are a number of buildings that are occasionally or seasonally occupied within the wild land areas.</p>	<p>a. Isolated buildings that lie within areas displaying high wild land characteristics may not warrant exclusion if their effect on wild land character is localised.</p>
<p>31. Eisgein (CAWL area 42)</p>		<p>a. The consented Muaitheabhal wind farm at has not been</p>	<p>a. The consented Muaitheabhal wind farm has now been excluded from this area of wild land.</p>

		excluded from this wild land area.	
32. Inverpolly - Glencanisp (CAWL area 30)	<ul style="list-style-type: none"> a. Inclusion of Cul Beg and Cul Mor b. Inclusion of Ben More Coigach, the forested area on Beinn an Eughan and the land running down to the shore 		<ul style="list-style-type: none"> a. Cul Beg and Cul More are included in this area of wild land. b. The Ben More Coigach area has strong wild land characteristics but not of sufficient extent to merit identification.
33. Quinag (CAWL area 31)		<ul style="list-style-type: none"> a. The road should be excluded on the western boundary. 	<ul style="list-style-type: none"> a. The road is excluded – this may only be apparent when areas are viewed against a 1:50,000 OS backdrop.
34. Reay - Cassley (CAWL area 32)		<ul style="list-style-type: none"> a. Loch Shin is an area used for generation hydro-power. b. The area contains considerable commercial afforestation at Loch Shin. 	<ul style="list-style-type: none"> a. Exclusion of Glen Cassley as far as the hydro works as this area contains hydro structures, tracks, Duchally Lodge and coniferous woodland blocks. b. The boundary has excluded larger blocks of plantation forestry as confirmed by the NWSS. c. Small exclusion at Duartmore Bridge at the edge of this area of wild land to exclude the on-shore aquaculture works and its access track. d. A number of small alterations around this area of wild land to allow the boundary to follow more readily identifiable landscape features.
35. Ben Klibreck - Armine Forest (CAWL area 36)	<ul style="list-style-type: none"> a. Inclusion of a small area around the Plantlife reserve in the vicinity of Munsary. 	<ul style="list-style-type: none"> b. The eastern boundary runs very close to the Gordonbush wind farm. c. Parts of Vagastie Glen have been 	<ul style="list-style-type: none"> a. This lies in an area separated from the wild land area by a public road and can not be included. b. Due to the lack of significant landforms or other natural features, the boundary has been defined in the south east by following the overhead transmission line until it reaches a water course. c. Wildness can be experienced to a high degree within Strath

		subject to human activity for many generations.	Vagastie as demonstrated by the high scores either side of the road. d. Exclusion of buildings, access track and plantation forestry blocks around Borrobol to the east.
36. Causeymire - Knockfin Flows (CAWL area 37)	a. Inclusion of a small area around the Plantlife reserve in the vicinity of Munsary.	b. Exclusion of the railway line.	a. This lies in an area separated from the wild land area by a public road and can not be included. b. The railway has been used to define the northern extent of this area due to high wildness being evident up until this feature in the landscape. c. Exclusion of a small area in the north to exclude Dalnawillan Lodge and tracks due to it being located close to the edge of the area of wild land. The Glutt has not been excluded as its effects are localised, it lies further within the area of wild land. d. Exclusion of a small area of plantation forestry immediately around Braemore Lodge. e. Exclusion of very small area to exclude the prominent track and forestry block at Ousdale. f. Inclusion of small area to the north to encompass native woodland along Loch Naver.
37. Foinaven - Ben Hee (CAWL area 33)		a. Fish farms and hydro schemes have been ignored. b. Commercial forestry plantations have been included inconsistently. c. A military exercise area with MOD targets is included.	a. There may be evidence of aquaculture development in the waters that lie adjacent areas wild land. We have considered hydro schemes that include impounded waters as mapped by SEPA. b. Small exclusion to exclude the Gober Lodge buildings, its access track and large block of coniferous plantation due to it being located at the edge of the area of wild land. c. Evidence of MOD activity is not considered to merit excluding this area. d. Small extension to capture the far south west to better reflect readily identifiable landscape features. e. Exclusion of area in the far north to exclude dam at Loch Meadaidh and associated access track from the north.

<p>38. Ben Hope - Ben Loyal (CAWL area 35)</p>			<ul style="list-style-type: none"> a. Small exclusion of coniferous plantation blocks and prominent access track associated with Kinloch Lodge. b. Small extension to capture the far south west corner along Strath More which contributes to the adjacent Foinaven- Ben Hee area separated only by the single track road. c. Small exclusion in the south east to reflect a more readily identifiable boundary on the ground.
<p>39. East Halladale Flows (CAWL area 38)</p>		<ul style="list-style-type: none"> a. Exclusion of the railway. 	<ul style="list-style-type: none"> a. The railway has been used to define the southern extent of this area.
<p>40. Cape Wrath (CAWL area 34)</p>		<ul style="list-style-type: none"> a. Exclusion of the main bombing and troop exercise area. 	<ul style="list-style-type: none"> a. The north coast of Cape Wrath merits inclusion despite the access road as vehicular access is not openly available to the public. Evidence of MOD activity is not considered to merit excluding this area.
<p>41. Hoy (CAWL area 39)</p>		<ul style="list-style-type: none"> a. Exclusion of public water treatment works at Heldale water and its associated access track. 	<ul style="list-style-type: none"> a. Due to Heldale water being identified as a heavily modified waterbody and it being located at the edge of the area of wild land it has been excluded.
<p>42. Ronas Hill and North Roe (CAWL area 40)</p>			<ul style="list-style-type: none"> a. Exclusion of area in the far north as far as Whitley Hill due to farm buildings and very prominent network of access tracks evident at the edge of the area of wild land.