

Land Use Change Issues and Opportunities for Aberdeenshire

January 2015



1.0 Aim and scope of the report

- 1.1 This report explores land use change issues and opportunities in Aberdeenshire. It highlights some of the most significant factors that are likely to influence land use change in the future and assesses how the region could respond to them. By summarising these issues, **it aims to present a broad overview which stimulates wider stakeholder involvement and further debate on future land use change in the region.** It is also hoped that the overview it provides will **aid strategic rural land use planning decisions.** The report ends by suggesting a series of actions and an invitation for stakeholders to get involved.
- 1.2 The report focusses on land use change. It is difficult to define 'change', as there are graduations from specific land management activities to abrupt change. In the main the focus is on change of use – from woodland to renewable energy or from agriculture to woodland for example. Throughout the report the term 'rural land use planning' is used. This is not seen as any one, specific process but a broad term for activities, particularly at a more strategic level, which aim to plan or explore future changes in rural land use.
- 1.3 The report draws on the work of the Aberdeenshire Land Use Strategy Pilot (the Pilot). This report is one part of a programme of work that was taken forward for the Pilot. Further information on the Pilot can be found in Section 3.0. Taking account of significant trends, the report will explore how changes in rural land use planning might best deliver for society, the environment and the economy. It will highlight future challenges, identifying opportunities, barriers and trade-offs, and areas where multiple benefits ('win-wins') might be achieved. Land use and land use change are complex subjects; the report aims to be relatively brief and cannot cover every aspect of relevance.
- 1.4 In November 2014 this report was sent, in draft, for comment to a range of stakeholders that had been involved in the Pilot. Where possible their comments and suggested changes have been included in this final version. Those who responded are thanked for their input to the report and to the Pilot process overall.

2.0 Report structure

- 2.1 Following this section, this report is split into 3 parts.

Part 1 briefly introduces the Pilot (section 3.0), presents an overview of the key drivers of land use change in the region (section 4.0) and describes the methods used, and consultations carried out by the Pilot (section 5.0).

Part 2 contains five policy themed sections (6.0 to 10.0). Within each policy theme, a series of land use change issues and opportunities are explored. The work of the Pilot under these themes is briefly summarised (a fuller description of the work is available in other reports on the [Pilot's website](#)). The sections also introduce a number of key issues that the Pilot was not able to explore fully but are known to be significant.

Part 3 sets out a list of suggested actions for Aberdeenshire (section 11.0) and describes future steps and suggests how this work could be continued (section 12).

PART 1 – Introduction and drivers of change

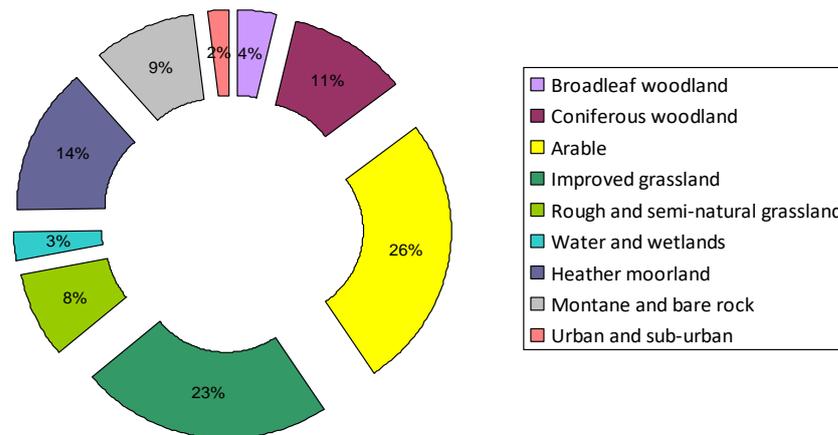
3.0 The Aberdeenshire Land Use Strategy Pilot

- 3.1 Between March 2013 and March 2015, Aberdeenshire Council and Scottish Borders Council delivered two regional Land Use Strategy Pilots. These are part of a package of work supporting and embedding the [Land Use Strategy \(LUS\)](#). The Pilots were directly funded by Scottish Government and timed so as to inform the 2016 revision of the Strategy. Despite the overarching land use focus of the LUS, the Pilots were asked to specifically **focus on rural land use**.
- 3.2 The Aberdeenshire Land Use Strategy Pilot was delivered in partnership between Aberdeenshire Council and the James Hutton Institute. It covers the Aberdeenshire local authority area and focuses on issues related to land use change. In summary, the aims of the Pilot are to:
- encourage an approach to decision making which takes account of the goods and services that the natural environment delivers to society, and
 - promote a more integrated, long term approach to decision making which is informed by local need and opportunity as well as regional, national and international targets.
- 3.3 The Pilot was been created in the recognition that there are clear challenges and opportunities related to rural land use planning. Notably a need to further integrate different land use types to achieve multiple economic, social and environmental benefits, a need to consider and plan better for climate change, a desire to involve people and communities more fully in rural land use planning and the need to address significant environmental challenges such as halting biodiversity loss.
- 3.4 The Pilot operated at two geographic scales - at the regional scale, and also in two local focus areas: in the upper Dee and around Huntly. In the local focus areas, the views and opinions of the local community were sought as a means of exploring what might be ‘missed’ at the regional scale, as well as how local people can engage with debates on land use.
- 3.5 The Pilot aimed to cover all of the major land use change issues for the region. Time and resources available to the project meant that it could not be a full exploration of every issue in every part of the region. This report is one of the outputs from the Pilot; **it draws on the work of the project itself, as well as a broad overview of land use change issues gained during the process.**

4.0 Land use and drivers of change in Aberdeenshire

- 4.1 The most up-to-date comprehensive data for land use across the whole Aberdeenshire region comes from the Countryside Survey’s Land Cover Map 2007 (LCM2007). Figure 1 presents a summary of LCM2007 data for Aberdeenshire with land cover figures as a percentage of the total area of the region.

Figure 1: Aberdeenshire % Land Coverage (LCM2007)



4.2 Although the LCM2007 presents a snapshot in time that could now be considered out of date, the relative proportions of land cover in Aberdeenshire are interesting to note. Approximately 50% of the land cover comprises improved grassland and arable land. Enclosed farmland is the dominant land use in the eastern half of the region. Heather moorland and montane/bare rock cover almost a quarter of the area, predominately in the west, and highlight the diversity of land cover types, elevation and topography.

4.3 Clearly climate, soils and topography have a significant influence on the mix of land cover types in Aberdeenshire and will continue to do so into the future. However, a range of political, social and economic factors also have influence. The interaction between these ‘human’ and environmental factors creates the land use mix. These interactions are not constant: different elements are more significant in different parts of the region and for different people. The relationships also change over time as the nature of the factors change.

4.4 As described, the Pilot focussed on issues in relation to land use change. The work of the Pilot and the input of stakeholders has identified some of the key drivers of land use change; summaries of each of these are presented in the following sections.

Agricultural policy

4.5 Agriculture is a highly significant land use for the culture, environment and economy of Aberdeenshire. With approximately 50% of the region composed of arable and improved grassland and a further percentage (for which complete figures are not available) used for extensive grazing, the reasons for agriculture’s significance are clear. As in much of the rest of Great Britain, 20th century agricultural policy, in tandem with increased mechanisation, had a significant bearing on farm practices and the landscape of Aberdeenshire. This was primarily through increased intensification, increased farm specialisation, the amalgamation of small farms into larger units and a reduction in the workforce involved in agriculture. However, there is a long history of agricultural improvement in the region going back many centuries and the biggest land use changes in the region (e.g. clearing of woodland, the draining of land) occurred well before the 20th century.

- 4.6 At the close of the 20th century, there was a general shift in agricultural policies, away from mechanisms which prioritised production, to mechanisms which also supported rural communities and environmental goals. Direct funding mechanisms such as the Common Agricultural Policy (CAP) and the Scottish Rural Development Programme (SRDP) are drivers of land use change – the particular make-up of the rules and incentives resulting in shifts from arable to grassland (or vice versa), or farmland to woodland for example. As this report was written, the latest CAP and SRDP arrangements were being finalised. They will have a significant bearing on land use in Aberdeenshire. Some key issues for the region are the move to an area-based payment system, ongoing direct support to beef production and the rules on minimum activity (a measure to target ‘slipper farmers’). The extent to which the new Ecological Focus Areas will have an influence is currently unclear, although the proposed requirements suggest they will not be strong drivers of land use change.
- 4.7 The agricultural industry has strong concerns over urban development and woodland expansion. They see these as a threat to agricultural land and particularly ‘good quality’ agricultural land. A greater consideration of the value of agricultural land in decision making has been called for by stakeholders of the Pilot. A changing climate is also seen as an issue, particularly in relation to increased rain in autumn and winter, increasing flooding, affecting crops and reducing machinery access to land.
- 4.8 The report [Agriculture in Aberdeenshire](#) produced for the North East Scotland Agricultural Advisory Group (NESAAG) presents a comprehensive summary of this land use and industry in the region. Although the report covers the period 2003 to 2007, the strengths, weaknesses, threats and opportunities it identifies are, in the main, still relevant today. What the NESAAG report does highlight is that agriculture in Aberdeenshire is a vibrant and diverse industry. Despite the 20th century changes, there are still many family owned, mixed farms. Practices like winter stubbles are still common and, other than for the dairy sector which continued to decline, the early years of the 21st century were a period of stability. NESAAG are currently in discussions on the production of an updated version of this report.
- 4.9 The various factors discussed in the sections below will all have an influence, to a greater or lesser extent, on agriculture in the future. It seems highly likely that **climate change** will have a strong influence in the region, an issue explored further in this report. The continuing **subsidy mix** will also exert an influence. Farmers and some sections of Scottish Government often highlight **food security** as a major issue for the future. Given the global nature of the agricultural business today, international issues are as likely to have as significant an influence as domestic ones. A notable issues raised by local stakeholders was that of **peak oil** and the way that dwindling hydrocarbon resources may effect agricultural practice and consumer demand.

Forestry Policy

- 4.10 Stakeholder input to the Pilot has emphasised the importance of woodlands to the Aberdeenshire landscape. Commercial forestry is also an important economic asset for the region. In common with agriculture, forestry policy in the 20th century was a driver of land use change. Prior to the First World War, large plantings of commercial, often non-native, conifer species were becoming increasingly common. However, the establishment of the Forestry Commission in the 1920’s greatly

accelerated this trend. Before this period, it is likely that woodland cover in the region would have been relatively low, following centuries of clearance.

- 4.11 As Figure 1 shows, the LCM2007 indicates 15% woodland coverage for Aberdeenshire. However, more up-to-date and precise data for woodlands is available in the National Forest Inventory 2012 dataset, which suggests coverage to be 17.1% in 2012. As these surveys use different methodologies, this does not indicate a 2.1% cover increase from 2007 to 2012. However, woodland cover is expanding, mainly as a result of targeted incentives for landowners to plant native woodland; further expansion is a policy of Scottish Government. In Aberdeenshire, this expansion is likely to continue to be driven mainly by plantings on private land. However, Forestry Commission Scotland land ownership is also changing, through both acquisitions and sales, and this is also likely to drive change. Many in the forestry industry highlight the need for greater planting of commercial woodlands to secure the industry's future.
- 4.12 Forestry and woodland have the potential to deliver a wide range of public benefits. Forestry Commission Scotland's three-way focus on timber production, public recreation and environmental benefits is an exemplar of multifunctional land use for the region. Woodlands are diverse in type and use, and their nature and utilisation is likely to continue to change in the face of future economic, social and environmental pressures. A clear need, given the potential benefits, is that forestry and woodlands are better integrated into other land uses - notably agriculture, field sports and urban areas.

Natural environment and biodiversity policy

- 4.13 Land use undoubtedly effects the quality of Aberdeenshire's environment, both positively and negatively. Increasingly we are becoming aware of the nature and scale of the effects, as well as the importance of our environment. It is difficult to briefly sum up the range of effects and the knock-on consequences. A clear message from the Pilot's work is that the natural assets of Aberdeenshire are intertwined with its economy and society – indeed, we are completely dependent upon them.
- 4.14 Aberdeenshire's environment is highly diverse, ranging from mountains to the sea, with a wide variety of habitats in between. Trends established nationally for a steady loss of habitats and species through the 20th century are also true for Aberdeenshire as a range of regional measures indicate. In assessing current trends and conditions, national [environmental](#)¹ and [biodiversity](#)² statistics present a mixed picture of continued impact, recovery, societal change and challenging problems.
- 4.15 In recognition of the challenge - the need to promote sustainable development but also to protect the overall quality of the natural environment - a range of environmental policies exist and have a bearing on land use. Many of these identify specific sites, or types of areas that need to be taken account of in land use change decision making, be they sites protected for natural conservation, carbon rich soils, ancient woodland, the presence of invasive non-native species or national park designations, for example. (In the case of Aberdeenshire, the Cairngorms National Park.) Taking account of these factors and balancing them with other priorities and needs has been a focus of the Pilot.

¹ Environmental statistics collated by Scottish Government

² Biodiversity statistics collated by Scottish Natural Heritage

Water policy

- 4.16 In addition to the agricultural, forestry and climate policies identified elsewhere in this section, recent changes in water policy are drivers of land use change. The holistic, target based approach of the [Water Framework Directive 2000](#) is a driver of change and environmental improvement. The move to a sustainable flood management approach required by the [Flood Risk Management Act 2009](#) may, in time, also exert a strong influence on land use. This requires natural measures which have the potential to reduce flood risk (such as woodland planting, wetlands, changes in land drainage) to be considered alongside the more traditional engineered solutions.

Climate change and associated policy

- 4.17 Statistics show that the climate of Aberdeenshire is changing. Changes in rainfall patterns, reductions in snowfall and frosts and an increase in 'extreme' weather events are those that are most obvious to land managers. The Intergovernmental Panel for Climate Change's projections for future change vary for Aberdeenshire, depending on the extent to which global emissions of greenhouse gases are cut in coming decades. However, milder, wetter winters followed by warmer, drier summers seem to be most likely. These changes could have far reaching consequences for land use in the region, affecting vegetation cover, crops, pests and diseases, water quality and quantity and soils, for example.
- 4.18 The political and societal responses to climate change have already had significant impacts on land use in the region. Over the last decade, there has been a marked increase in the number of wind turbines – supported by government incentives. Increases in tree cover are also partly driven by the need to store atmospheric carbon dioxide. And there are a range of subtler effects resulting from increasing fuel taxation and rules on greenhouse gas emissions: energy and fuel may become more expensive, machinery and practices may have to change, the nature of government grants changes etc. An increase in the awareness of the value of peatlands and increasing measures to restore them, such as through the [Peatland Action Programme](#), are exerting an increasing influence.
- 4.19 Change, driven by society and politics, but also as the effects of the changing climate become more pronounced, will continue and most likely increase. In the short term, mitigation and adaptation measures such as further renewable development, energy crops and flood prevention measures are likely to drive change. In the longer term the full effects of climate change will be felt by land managers and owners. The way we prepare for this will determine the nature and extent of these effects.

Population, society and culture

- 4.20 A number of the drivers of change identified above are in their nature top down – many are policies of government or global issues. However, by no means all land use change will be driven in this way, as society and culture have a significant bearing.
- 4.21 Approximately a quarter of a million people live in Aberdeenshire. Rather than a single large town for the region, there are a number of larger towns spread throughout; Banff, Peterhead and Fraserburgh in the north, Ellon and Inverurie and in the centre, Banchory and Stonehaven in the south. There is a diverse rural population with many dependent on land based business or tourism, but an

increasing number working in the region's urban centres, in Aberdeen or in the off-shore oil industry. The proximity of Aberdeen has a range of effects - providing work, providing a large market for goods and services and increasing demands for recreation for example. In comparison with the rest of Scotland, Aberdeenshire is relatively wealthy, poverty and deprivation levels are low. In common with the rest of Scotland, the population is 'ageing' as life expectancy increases and birth rate falls.

- 4.22 Although difficult to measure and demonstrate, there does appear to be an increasing environmental consciousness in Aberdeenshire's population overall. Increased demands for greenspace, recreation and locally produced food are noted. There is also increased awareness of the effects of flooding, increases in woodland coverage (or individual woodland losses), built development, and biodiversity loss. However, different issues are clearly more important to different people, and certain sections of society are more engaged in these issues than others. There are clear dangers in generalising. Notwithstanding, the land use issues that society are strongly engaged with are influenced by that engagement, be it directly or by the policies created as a result. Increased access provision, a strong focus on flooding, the process of planning for built development and a likely slowing in the pace of onshore wind turbine development in Aberdeenshire are examples of local policies that respond to societal opinion and need.
- 4.23 Of note from the Local Focus Area process was the perception that urban populations have a strong influence on rural policy formation. There were also suggestions that a disconnection with the land and a general lack of understanding has implications for what the public demand and consume in relation to land based business; and that this in turn, results in a lesser rural focus in the targeting of public resources. The Pilot has explored means of getting communities further engaged in land use issues in the hope that they can have a greater influence. The concerns expressed about current understanding, or lack of it, must be borne in mind, however such an approach is a core element of recent [Community Empowerment Bill 2014](#).
- 4.24 Strong cultural traditions have a significant influence on land use. Across much of Aberdeenshire, agriculture has been dominant for many centuries. Producing food, improving the land for the next generation and supporting rural communities are deeply embedded cultural threads. In western parts of Aberdeenshire, a more recent, but still strong tradition of sporting estates exists, with the provision of game or sport-fish being paramount. Land use change must be seen within the context of these cultural traditions.
- 4.25 The current debate on land ownership and land reform has the potential to be a driver of land use change in the future. The Pilot did not focus on this issue in its work. However, it is clear that stakeholders across the region have a broad spectrum of views on the need for change and the potential consequences of it. Some have commented that current uncertainties and the potential for change could begin to influence agricultural tenancies in the region as well as long term land use change decisions such as forestry. The Land Reform Review Group (LRRG) suggests change that goes well beyond these issues; in their view, public benefit should be a significant factor in the mechanisms which govern and influence land ownership.

Following publication of the [final report](#) of the LRRG, a consultation on the future direction of Land Reform in Scotland is underway as this report is being finalised.

- 4.26 Increasingly, a range of human factors are being taken account of in land use planning. Tourism has long been a consideration; however ‘placemaking’ and wellbeing have moved up the agenda. On the whole, such factors may be more commonly recognised in development planning; nonetheless, processes such as strategic forest planning, river basin planning and strategic planning in the Cairngorms National Park increasingly encompass these types of concepts. At their core is a consideration of the ‘non-direct’ uses of the environment that people derive – for example, the desire to visit natural spaces, the impact of landscape and greenspace on health and well-being or their spiritual/cultural significance. These are often termed the ‘cultural services’ (see 4.29). They tend to be difficult to map and fully describe. The Pilot has struggled to adequately reflect them in its work and acknowledges this weakness.

Financial economy

- 4.27 The influence of money and markets on land use change is difficult to briefly sum up. Clearly the influence is strong. Land owners and managers need to make living and there is little point in considering land use change without exploring its financial effects. Land managers in Aberdeenshire are, in the main, producing goods for large markets. Be it food or timber, or a day’s shooting, these markets are influenced by a huge range of factors, many of which are global, and as a result, variable. Indeed engagement in the Pilot’s Local Focus Areas has suggested that input prices have a greater influence of land manager decisions than incentives and regulation. For some land managers, direct subsidies can, to an extent, reduce the effects of market variability; however the effect still remains. Subsidy regimes also change over time. Land managers must balance these financial factors along with other political, regulatory, environmental and social factors described above to make decisions. How these factors interrelate and the synergies and trade-offs between them has been a focus of the Pilot.
- 4.28 Engagement in the Local Focus Areas has shown that there are a wide range of financial and related human factors that influence land managers’ decision making. Some of those strongly highlighted include access to finance, particularly for agricultural tenants and new entrants, access to labour and the development of new technologies. It was also stressed that consumer attitudes and demands remain a fundamental influence.
- 4.29 Another focus of the Pilot has been the market and non-market goods and services that the environment provides and that land management influences. The term for these is ‘ecosystem services’, a new area of thinking and policy that will be explored further in this report and others produced by the Pilot. The concept suggests that the value of land use change needs to be considered in terms of the full range of resulting benefits and costs, rather than just the financial value of what have traditionally considered to be its products. The extent to which this will drive land use change is currently unclear; however, the potential exists for such an approach to influence strategic planning and subsidy, for example. It could also open up new markets, often termed ‘payments for ecosystem services’, for carbon storage, water quality improvements or flood mitigation in the future.

Urban development and infrastructure

4.30 Supported by the region's strong economy, built development continues at pace in Aberdeenshire, although the recent recession has slowed this a little. The [Aberdeen City and Shire Strategic Development Plan \(2014\)](#) (SDP) provides the overall strategic plan for development, defining development priorities, identifying strategic growth areas and making links with national policy for both Aberdeen City and Aberdeenshire. The [Aberdeenshire Local Development Plan \(2012\)](#) (LDP) takes the broad view of the SDP, and other policy elements, and localises them to specific development management policies and land allocations. Both the SDP and the LDP make the case for further development and broadly identify where and when it should take place. Their goal is to take a long term view and to deliver multiple benefits from development, across society. The Pilot is engaging with both the SDP and LDP processes and in time it is hoped that the Pilot's work can be used to inform the statutory planning process.

4.31 The development of housing and infrastructure is a strong driver of land use change in the region, both directly and indirectly. Directly, built development on previously undeveloped land involves a change in land use, with building on good quality agricultural land being seen as one of the most controversial issues. Indirectly, the expansion of urban areas and changes in transport infrastructure influences where people live and how quickly they can move around. As can be seen in many of Aberdeenshire's towns and surrounding rural areas, this changes communities, increases house prices, promotes conversion from agricultural to domestic buildings, and increases recreational access. These changes can have knock-on consequences for surrounding land use. Further developments, such as the Aberdeen Western Peripheral Route or proposed dualling of the A96, are likely to add to these.

In Summary

4.32 Although the various drivers of change are presented separately in the sections above, they are all interrelated. The work of the Pilot and the input of stakeholders has reinforced this point. Indeed, many of the issues and potential changes highlighted result in trade-offs with other land uses or with other beneficiaries. One of the central messages of the Land Use Strategy is that we need to deal with these challenges and opportunities in a holistic, integrated and inclusive way that targets the optimal delivery of public benefit.

4.33 The point has been raised by stakeholders that there is a fundamental problem in considering an integrated approach to land use based on current practice and indeed with the Pilot process as whole. That is, that resource use in Aberdeenshire, in common with the rest of the UK, is fundamentally unsustainable and there is too great a focus on tinkering with the status quo. Our global footprint, if scaled up, would use the resources of [three earths](#)³. Some have urged a more radical approach (e.g. voluntary economic regression and the complete de-intensification of agriculture) in order to attempt to tackle this issue. The overall issue is recognised; however the Pilot felt that it should start with existing structures and mechanisms, and to try to foster a more integrated, sustainable approach by encouraging them to evolve.

³ North East Scotland Global Footprint report

5.0 Aberdeenshire Land Use Strategy Pilot methods and consultation

- 5.1 This report draws on the work of the Aberdeenshire Land Use Strategy Pilot. In this section, the methods and consultation processes followed by the Pilot are outlined, so as to give context to the five themed sections which follow. These themed sections summarise the Pilot's work and explore some of the wider issues encountered and raised.
- 5.2 The Pilot takes an [ecosystems approach](#) to its work, and a key goal is the greater integration of this approach into land use change decision making. The Scottish Government have identified three key steps in taking an [ecosystem approach](#):
1. Consider natural systems
 2. Take account of the services that ecosystems provide
 3. Involve people
- 5.3 The Pilot attempted to be inclusive and engaged stakeholders at two scales. At the regional level the Pilot's Project Board included representatives of Scottish Government, relevant government agencies, wildlife charities and land management representative bodies. The Pilot also worked within two local focus areas. Workshops at the regional and local level were held at strategic points throughout the Pilot to allow stakeholders to input to the process: evaluating progress, providing comment and viewpoints, exploring options and advising on next steps.
- 5.4 The Pilot took a strongly spatial approach in exploring land use change issues and opportunities. Mapped data was collected for use in GIS based analysis processes. While this approach had advantages for a project which was working at a large geographic scale with multiple sources of information, there were also key challenges in relation to data availability and access. The multiple scales and the variety of timeframes data is collected at, added to the complexity.
- 5.5 Scottish Government asked the Pilot to take account of all relevant policies and targets, both regional and national. There were a wide range of policies of relevance and certainly some, though not completely contradictory, are non-complementary. Part of the job of the Pilot however, was to navigate through this policy landscape and find workable options which best meet policy and stakeholder ambitions.
- 5.6 The state of our knowledge of the natural environment, the goods and services it provides (notably a lack of information on the 'regulating' and 'cultural' services) and the ways in which our actions influence provision was also a challenge. From the very start however, the Pilot felt that this wasn't a reason for inaction: there was certainly enough knowledge and information available to indicate that environmental problems related to land use abound, and that alternative approaches may have merit. In all of the issues the Pilot tackled, it explored and presented only a partial picture of all that is relevant. Conclusions drawn are based on a growing but currently imperfect knowledge base.
- 5.7 The Pilot chose to focus its work on five key land use and environment related policy themes. The James Hutton Institute produced these themes as a summary of the major elements of the Land Use Strategy. The Pilot chose them as a helpful way of

structuring its work. However, the integrated nature of the themes was borne in mind and explored. The themes were:

1. The Low Carbon Economy
2. Sustainable Food Production
3. Sustainable Water Management
4. Halting Biodiversity Loss
5. Communities Connected to the Land

These themes are broad, and each could be achieved in a number of ways. However, due to time and resource constraints, **the Pilot was only able to explore a subset of options under each of these policy themes (goals)**. The Pilot's work took a questions based approach, asking a series of questions which were representative of some of the key land use planning issues in the region. Where other significant issues and opportunities arose, beyond the questions asked, these have been acknowledged and described below. In Part 2, some of the most significant land use change issues encountered within these five themes are described. The themes are drawn together in the final section on regional priorities, as appropriate for an integrated management approach.

PART 2 – Policy themes

6.0 The Low Carbon Economy

Key messages:

- Land based businesses in Aberdeenshire should plan more fully for climate change, considering options for both mitigation and adaptation
- The restoration of lowland raised bogs in Aberdeenshire requires greater attention.
- Further opportunities for larger scale onshore wind energy developments in Aberdeenshire may be limited; a greater diversity of generation is required.
- A strategic approach to woodland planting, taking greater account of constraints and opportunities, is likely to support further expansion and deliver multiple benefits.

Background

- 6.1 The sustainable growth of a low carbon economy in Scotland is a key piece of Government policy. Although principally set out in the [Climate Change Act \(2009\)](#) and the [Low Carbon Economic Strategy \(2010\)](#), it is a thread running through a range of policy and guidance. The Government sees strong economic prospects for Scotland in furthering this aim, with a key underpinning element being abundant natural resources.

Aberdeenshire Context

- 6.2 The Department for Energy and Climate Change (DECC) calculates [yearly carbon dioxide emission estimates for all local authorities in the UK](#). Statistics are currently available for the period 2005 to 2012. As with the rest of the UK, electricity, heating and transport are major sources of carbon dioxide emissions in Aberdeenshire. Total emissions for Aberdeenshire have fallen in the measured period with year on year reductions from 2005 to 2011. However, 2012 saw the first rise since the figures have been available. The rise appears to be due to greater electricity and gas use – possibly due to relatively low winter temperatures. Emissions per person in Aberdeenshire are average in comparison with the rest of Scotland.
- 6.3 As part of the DECC calculations, the net carbon dioxide emissions from Land Use and Land Use Change activities (LULUC) are calculated. Although the Pilot found it difficult to unpick this figure, it was aware that agricultural activity, forestry and peatlands are elements in the classification. Aberdeenshire LULUC activities are calculated to be net sinks of carbon dioxide. i.e. overall, they soak up more CO₂ than they release. The picture across Scotland varies – regions with extensive commercial forest cover and/or peatland habitats being net LULUC sinks, regions without being net emitters from LULUC. This suggests that agricultural practice in the more intensively farmed areas is a net emitter of carbon dioxide.
- 6.4 The clear goal from Scottish Government and from regional strategies is to reduce carbon dioxide emissions. There are many ways to achieve this, in particular decarbonising transport, reducing domestic and industrial heating and energy use and decarbonising electricity generation. There is also role for land use to play as the Land Use Strategy identifies. The Pilot suggests there are four key land use and land use change issues in relation to net carbon dioxide emissions:

1. Emissions from intensive agriculture
2. Peatland restoration
3. Renewable energy generation
4. Forest cover

The first two issues are covered briefly below (in paras. 6.5 and 6.6) as they were not a focus of the Pilot's work. The third and fourth issues are covered in greater depth as the Pilot focused on them. They are covered from section 6.7 onwards.

Issues encountered during the Pilot

6.5 Particular issues in relation to emissions from intensive agriculture are covered in Section 7, Sustainable Food Production. However, the Pilot did not consider all that is relevant in relation to this topic. Reducing emissions from food production calls for a focus on key aspects, e.g. soil cultivation and fertilizer use, but also energy usage, animal husbandry, diet, waste reduction and the potential for renewable energy. While the Pilot was aware of particular moves to consider some of these issues within the Common Agricultural Policy (CAP) and the Scottish Rural Development Programme (SRDP), a coherent strategy to reduce emissions from within the food sector appears to be lacking. Notwithstanding, initiatives such as [Farming for a Better Climate](#) point the way to reducing emissions while also improving farm businesses.

6.6 The value of restoring damaged peatland habitats is now well recognised. One of the catalysts for this was the [IUCN Peatlands Commission](#) which clearly laid out the multiple benefits that the restoration and better management of peatland habitats would have, including in reducing net carbon dioxide emissions. Peatland management and restoration now has a national strategy and [significant public funds allocated to it](#). Although the Pilot did not consider peatlands in its work, it was aware of a strong interest from some in Aberdeenshire in the restoration of the extensive lowland raised bog resource that exists in the region. A coherent strategy and dedicated resource for this would be likely to deliver carbon, biodiversity and water management benefits. Lowland bog restoration certainly merits further discussion with relevant stakeholders. The key issue appears to be the adequately compensating landowners for restoration activities.

Issues focussed on by the Pilot

6.7 *Increasing the production of energy from renewable sources – the potential for wind turbines.*

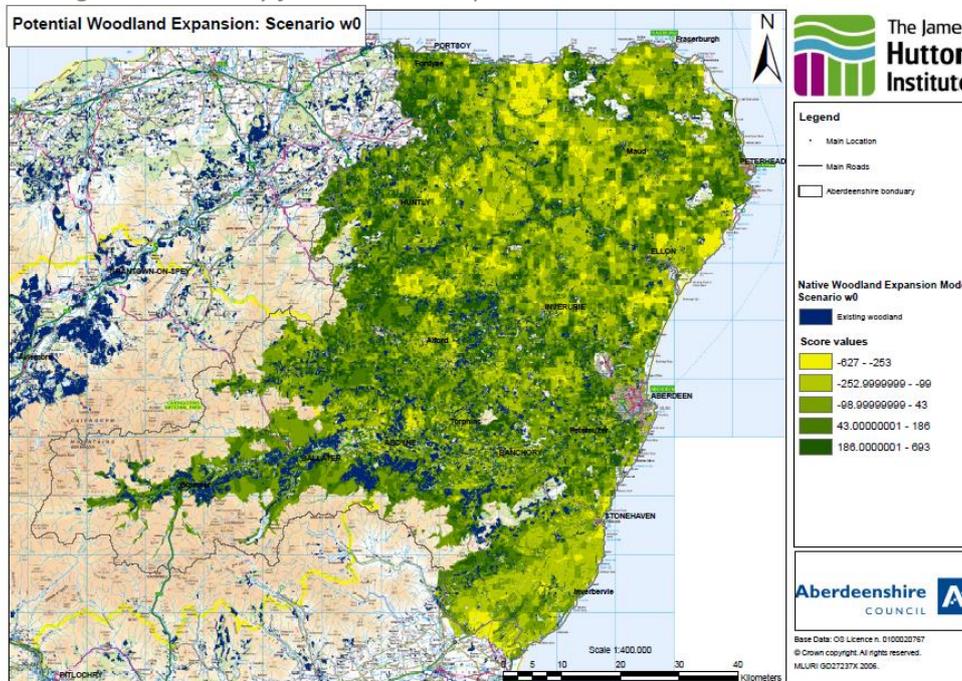
Extensive development of onshore wind turbines has taken place in Aberdeenshire over the last decade, and a number of 'wind farms' are in operation. There has also been a high uptake of smaller scale developments by individual landowners relative to the rest of Scotland. Available Government subsidy has been a strong driver of this. The pace of development and the highly visible nature of wind turbines is an issue the public and the press are strongly engaged with. The Pilot felt considerable merit lay in exploring the existing wind resource, and potential for further onshore turbine development at the regional level.

- 6.8 Scottish Government energy generation targets require 100% of domestic electricity consumption to be delivered by renewable energy by 2020. The Pilot was aware that, in Aberdeenshire, the majority of renewable energy is currently delivered by onshore wind turbines. It found that approximately 90% of Aberdeenshire electricity consumption could be delivered by installed and approved wind energy developments (this includes one large offshore development). Although the contribution of other renewable energy sources is small, this suggests that Aberdeenshire is well on the way to meeting national targets. However, Aberdeenshire is coupled with Aberdeen City within the Strategic Development Planning Process, which includes consideration of energy usage and generation. Given Aberdeen City's low generation, this halves Aberdeenshire's renewables contribution to 45%. So the Pilot chose to ask where there was more capacity for onshore wind. As a general point, this provides a good example of the inter-relationship between areas in providing goods and services and why any single area cannot be considered in isolation.
- 6.9 In exploring further capacity for onshore wind energy in the region, the Pilot reflected work that had been carried out in preparation for the 2016 to 2021 Aberdeenshire Local Development Plan (LDP). For this, a spatial framework has been produced which shows areas of opportunity and constraint for further onshore wind energy development. The constraint layers in the framework are sites designated for nature conservation and a 2km buffer around settlements. The draft framework was consulted upon in 2014 and the final position of Aberdeenshire Council on this matter will be set in January 2015 as part of the overall proposed LDP.
- 6.10 Clearly wind energy is a singular focus within a broader issue, but onshore wind is the current most significant renewable energy planning issue, with further developments proposed. Other renewable energy options in Aberdeenshire lag behind onshore wind. Hydro-power is likely to remain small scale; biomass may be limited by supply of raw materials; there are a few solar developments currently but interest is on the rise. The extent to which offshore wind might develop remains unclear. It may be that many of the key developments of the future are smaller scale and local, encompassing not only energy but heat. Greater encouragement and support towards this is would be likely to gain significant public support as well as yield a range of benefits – European models for this are available. Feedback from our Local Focus Areas indicated that there are concerns over the contradiction of peat soils protection and the siting of many windfarms and that, fewer, larger, more efficient turbines were supported over smaller, more numerous options. The input of Pilot stakeholders and work done in preparation for the LDP suggests that space for additional large onshore wind energy is limited and that a greater mix of renewable energy generation sources is required. It is considered that a more strategic spatial planning approach to renewable energy could benefit significantly from a national consideration of constraints and opportunities across Scotland.
- 6.11 *Woodland expansion to increase carbon sequestration.*
The expansion of woodland coverage in Scotland is an important land use change issue aimed at reducing overall carbon dioxide emissions, as well as delivering a range of other benefits. Scottish Government has aspirations to increase woodland coverage and many see benefits in so doing. The Forestry Commission's [Woodland Carbon Code](#) provides a standardised means of assessing and communicating the carbon benefits of new woodland planting. However, there are potential tensions

with other land uses, notably agriculture and sporting interests. Woodland planting can also conflict with nature conservation interests and key habitats, such as peatland and open ground habitats. With the potential opportunities but also conflicts, the targeting of woodland to deliver multiple benefits and minimise conflict is desirable. The Pilot chose to explore this.

- 6.12 In approaching this question, the Pilot created a GIS-based opportunity and constraints mapping process. A baseline of current land use was constructed, and then overlaid with a series of relevant layers of information. The layers were identified as hard constraints (no-go for woodland), soft constraints (score negatively for woodland) or opportunities (score positively for woodland) depending on what they described. The model then scores areas based on their suitability for woodland planting. Figure 2 shows an output from the GIS model - a regional map of woodland suitability. Darker green areas are the most suitable transitioning to bright yellow as the least suitable areas.

Figure 2: Regional suitability for woodland expansion



- 6.13 One of the benefits of the GIS model is that any of the layers can be weighted up or down depending on the question the user is asking or the policy goal in mind. So, if the goal is to protect prime agricultural land, this layer can be given greater weight. If the goal is to reduce flooding, the weight of relevant layers can be increased. The model is currently based on native broadleaf woodland creation but could be adapted for other woodland types including commercial conifer, for example.

- 6.14 The Pilot has created an interactive tool, based on the woodland model above, which gives users the opportunity to explore the weighting of different options. The tool is located at <http://rlup.hutton.ac.uk/> and we welcome feedback on it. **The tool does not give an absolute answer but is something that could, with further development, be used to aid decision making.** However, there needs to be a regional consideration of how greater woodland coverage can best be delivered. This is an issue with many aspects: financial, cultural and political – all of which are

well covered in the report of the [Woodland Expansion Advisory Group](#). The production of an updated Forest and Woodland Strategy for the region would be beneficial. In addition, there is a clear need to ‘sell’ the benefits that woodlands can bring, and to explore how some of the cultural and financial barriers which reduce woodland planting on agricultural and sporting land uses can be overcome.

- 6.15 The goal of a low carbon economy requires action on many fronts. Highlighted above are some of the key issues in relation to land use change. What is clear is that many of the aspects are strongly interlinked and that approaches must be sought which reduce emissions but also deliver multiple benefits.

7.0 Sustainable Food Production

Key messages:

- Regimes which support and subsidise agriculture should target overall public benefit and allow for regional/local targeting
- There needs to be better business planning in agriculture in Aberdeenshire for both mitigation of and adaptation to future climate change.

Background

- 7.1 The production of food is a human necessity and the modernisation and intensification of much of agriculture, particularly since the Second World War, has resulted in relatively cheap and abundant food for the UK population. In this respect modern agriculture is a success. However, we need modern agriculture to produce food, to produce a livelihood for land managers and to support the rural economy, but also to support and take account of the needs of society and the environment – it needs to be sustainable.

Aberdeenshire context

- 7.2 As discussed in section 4.5 to 4.9, in Aberdeenshire there have been social and environmental costs associated with the modernisation of agriculture: species and habitats have been lost or damaged, and the number of people working the land has greatly reduced, for example. Moves to reduce and redress the environmental costs associated with agriculture; the ‘greening’ of the subsidy system and the implementation of a host of rules and regulations have had impacts on land use in the region. A resurgence in farmers’ markets, farm shops, allotments and local food growing across Aberdeenshire reflects the desire among local communities to reconnect with the food that they consume.

Issues encountered by the Pilot

- 7.3 Despite recent changes in agriculture, subsidies and public awareness, a number of factors persist which reduce the sustainability of modern agriculture in Aberdeenshire and elsewhere. Many farms are highly reliant on external inputs – subsidy, fuel, animal feeds, fertilisers, contract labour and pesticides. Beyond the valuable food produced, farming can also ‘export’ a number of problems: pollution of land and water, emissions of carbon dioxide, loss of soil and impacts on biodiversity all of which are evident in the region. Without subsidies, many farmers’ incomes would be low or non-existent. The average age of farmers is high and the number of young and new entrants to farming is low, something particularly acute in Aberdeenshire given the availability of jobs in the oil industry. An issue of note

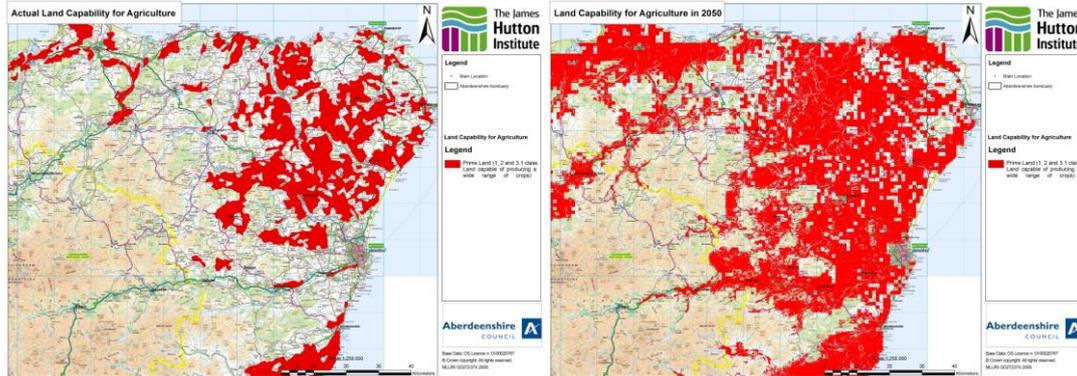
raised in the Local Focus Areas was the influence of wholesalers and supermarkets on producer incomes.

- 7.4 The issues and problems outlined above are generalisations, and many examples of good practice exist. As described, at a certain level modern agriculture ‘works’ and it may be that an evolution rather than a revolution in practice is required; others suggest more radical solutions are called for. Most stakeholders of the Pilot acknowledge that change is needed. Key messages fed back to the Pilot are that farmers need to be able to make a living from the food they produce; there needs to be greater account taken of all the benefits and impacts of modern agriculture and there needs to be more integrated planning for the future. Some stakeholders have raised alternatives to standard agricultural practice, such as permaculture and forest gardens.
- 7.5 One of the ways change can be delivered is through public money given to the industry. Subsidies have a significant influence. Land managers often highlighted the unintended environmental consequences subsidies can have, and the fact that their short term nature made certain, potentially environmentally valuable, measures less attractive. The Pilot coincided with discussions on CAP reform and a new SRDP. Such discussions are complex, with multiple interests represented in the debate. Based on the Pilot’s work to date and the input of stakeholders, it is suggested that the key factor in these debates should be how the public interest is best served. It is also suggested that there should be further exploration of regional or local targeting of public funds to land managers and that decisions on targeting should be made by representatives of the region. This theme of a local forum for decision making is further explored in the sections which follow.

Issues focussed on by the Pilot

- 7.6 In setting up the Pilots, Scottish Government asked that potential to influence local SRDP be explored. This was challenging given the uncertainties around SRPD during the Pilot. Furthermore, because many of the ‘environmental’ measures the Pilot might influence would require specific site-based targeting, so as to have a greater chance of delivering the potential benefits – a level of detail the Pilot felt unable to deliver given its regional focus. However, the aim is to develop work carried out during the Pilot on woodland targeting, for use in informing decision making over SRDP payments, resources permitting. Also, as described below, the Pilot carried out some further work on potential consequences from climate change for the region’s agriculture, something that it felt was lacking in future planning by the industry.
- 7.7 In 2008, the then Macaulay Institute carried out an exercise in updating the [Macaulay Land Capability for Agriculture](#) (LCA) classification based on a median climate change prediction for 2050. The LCA is a widely used system for the classification of agricultural land and reflects the flexibility of land for agricultural use based on physical and climatic constraints. The most ‘flexible’ land has fewest constraints and can be used to grow the widest range of crops – this is often termed ‘prime agricultural land’. The majority of farmed prime land in Scotland is used to grow arable crops each year or as part of a rotation. The James Hutton Institute Land Capability for Agriculture 2050 projection (LCA50) indicated that the area of prime land in Aberdeenshire could significantly increase as Figure 3 shows.

Figure 3: Current extent of 'prime' agricultural land (left) and extent projected in 2050 (right)



7.8 The Pilot chose to explore some of the consequences of an increase in prime land in Aberdeenshire. Solely for the purposes of the analysis, it was assumed that all new prime land would be arable farmed. It was also assumed that tree cover would increase in the region as per national targets. Working within the Pilot's Huntly Local Focus Area, increases in soil and nutrient run-off and greenhouse gas emissions were shown as a result of increased cropping. This highlights that, should new prime land be set aside for arable cropping, we need a strategy which minimises harmful consequences for the natural assets of Aberdeenshire. How can we maximise the benefits of this type of change and align it with the other key policy goals for the region?

7.9 The LCA50 work focussed on a sub-set of the issues and did not take account of changes in practice etc. **Findings should be viewed as illustrative rather than a definitive description of the future.** This prediction of future conditions was often challenged by Pilot stakeholders who saw it as unlikely to come to pass – increased rain and other physical factors making it unlikely. However, it does highlight some potential future changes, and, more importantly demonstrate the fact that change will occur, and that it needs to be given due consideration. Sustainable agriculture is about securing long term, resilient businesses as well as reducing impacts and increasing benefits.

8.0 Sustainable Water Management

Key messages:

- An integrated catchment management approach could provide the framework from which to build a more integrated approach to land and water use.

Background

8.1 The sustainable management of water is an issue which cuts across land use types, industries, localities and regions. Water is a highly significant resource provided by the environment and its protection and wise use is key to a sustainable future. A significantly increased emphasis on the protection and enhancement of the water environment has resulted from the implementation of the Water Framework Directive 2000 (WFD). WFD targets for improvements are a catalyst for land management, and to a lesser extent, land use change in the region. A move to a more sustainable approach to flood risk management is likely to have an increasing influence in the coming years.

Aberdeenshire Context

- 8.2 Like much of Scotland, Aberdeenshire has abundant water resources currently. A number of major rivers drain from the Grampian Mountains, and their foothills, to the sea. Smaller coastal streams and groundwater are also abundant. Lochs are less numerous, although those that are present are highly valued for nature and recreation. Although not a focus of the Pilot, and an omission that stakeholders have often raised as significant, the sea and extensive coastline is also an important resource for the region. Activities iconic to the region, for example recreational fishing and whisky production, are entirely dependent on clean and abundant water. However, the entire population's lives are interlinked with the region's water, for drinking, waste disposal, recreation and through the effects of flooding.
- 8.3 The trend for water quality and the habitats associated with water in Aberdeenshire is one of improvement. Pollution from industry and sewage disposal is now greatly reduced. Pollution from more diffuse sources, both rural and urban is reducing but is proving harder to eradicate. A historic legacy of the manipulation and engineering of the water environment continues to cause problems. Flooding is an issue for the region and it is suggested that its impact may increase with climate change.

Issues encountered during the Pilot

- 8.4 Rural land use can have significant impacts on the water environment, both positive and negative. As such, there are problems that need to be tackled, but also a host of opportunities. Some of the most difficult and important problems for the water environment in Aberdeenshire are influenced by land management activity - diffuse pollution, the straightening and embankment of rivers and burns and flooding, for example. However, the targeted use of woodland, buffer strips, fencing, reductions in nutrient and pesticide use, careful stading water management, reductions in upland burning and the creation of ponds and wetlands are just some examples of the measures that could benefit both the water environment and rural businesses. Engagement in the local focus areas has shown that land managers have concerns over other rural pollution sources, notably septic tanks and roads, and feel these should be taken account of more.
- 8.5 In order to address the persistent problems and to realise potential benefits, it is recommended that further development of the [integrated approach to the management of river catchments](#) be explored in Aberdeenshire. There have already been moves in this direction through the Area Advisory Group (AAG) process which informs the Water Framework Directive, and through the creation of regional flood risk management plans. These existing initiatives offer a strong framework from which to build a more integrated approach to land and water use. Owing to time and resource constraints but also complexity, the Pilot did not aim to create this type of overarching framework. However, the process followed throughout the project, together with the input of stakeholders, indicates that an integrated catchment management approach offers significant potential to deliver the aims of Land Use Strategy. Such an approach would most likely require evolution of the AAG process, with a broadening of scope and a more local focus. Resources and complexity would present challenges, as they are bound to for any such process. And extending the scope of the process beyond the water environment to include a wider set of public goals would not be without its difficulties. There could well be

challenges to the legitimacy of the process from those it might impact, such as land managers. This option would require further discussion with all stakeholders.

Integrated catchment management:

- *considers land and water management together rather than separately*
- *takes account of the goods and services the environment provides to society*
- *takes a local, participatory approach to planning*

Issues focussed on by the Pilot

8.6 There were a range of water environmental based issues that the Pilot would have liked to have focussed on. Diffuse pollution from rural land use and a move to a more sustainable flood risk management approach were two particular issues which stood out as significant in Aberdeenshire. However, in considering the time and resource available to the Pilot, it felt it could add little to ongoing work in the Scottish Environment Protection Agency (SEPA) on targeting of measures and activity in relation to these topics. However, the Pilot feels it does have information and knowledge to add to this process in SEPA and will be seeking further engagement on them.

8.7 As a step towards a more integrated approach, the Pilot chose to explore the issue of future drinking water provision in Aberdeenshire, taking account of future demand, potential land use change and climate change. The work drew on risk assessments by Scottish Water and associated work by the James Hutton Institute on impacts of potential land use and climate change. It suggested that risks to future supply, and any associated risk to environmental and ecological quality across the region were low, but highlighted uncertainties and the fact that further work was needed to build a fuller understanding of the risks. Greater inter-connectedness in the region and the transfer of water between catchment areas has been suggested as one resilience solution, although stakeholders in the Local Focus Areas did question the carbon efficiency of this measure. A team within the James Hutton Institute continues the work and is in contact with Scottish Water.

9.0 Halting Biodiversity Loss

Key messages:

- The value of biodiversity should be accounted for in decision making
- Land managers need advice and support on biodiversity issues
- Habitat connectivity maps are one potential tool to aid strategic planning

Background

9.1 Halting biodiversity loss is a public goal, as set out in international and national policies including the [2020 Challenge for Scotland's Biodiversity](#). The goal has been set in recognition that biodiversity has strong cultural and social values, but also because it underpins all the goods and services that the environment delivers for people. Some of the most visible of these include the nature-based tourism and sporting pursuits which underpin many rural economies. However, biodiversity is part of the overall 'ecosystem' which produces the air we breathe, the soil we grow

crops in, the water we drink and a host of other benefits that support human life and the economy. Without it we cannot exist.

Aberdeenshire Context

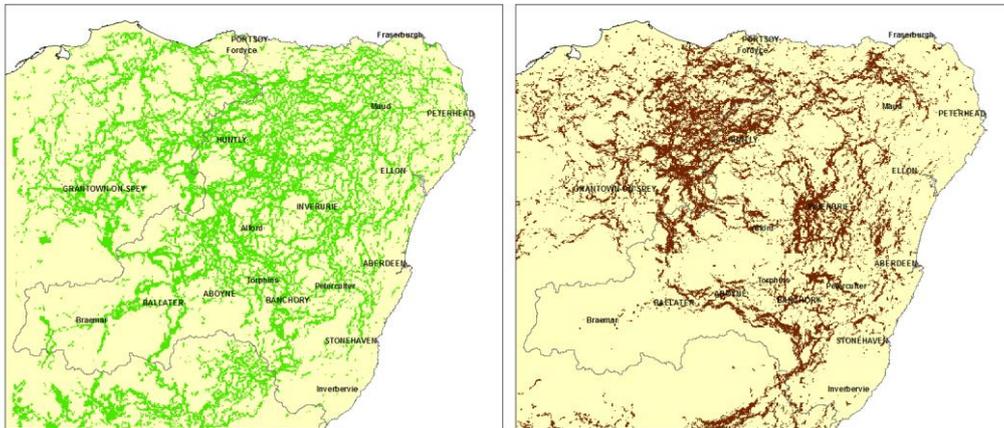
- 9.2 Over the last 200 years, and particularly in the last 60, we have seen a significant loss of biodiversity in Aberdeenshire, as in the rest of the UK. Pollution, the introduction of non-native species, over-exploitation of natural resources and increasingly, climate change, have all played a role in this loss. However, the most significant factor is the modification and loss of habitat. Land management and land use change are prominent factors here; and, where long term records are available - such as for birds – the decline is well illustrated.
- 9.3 That is not to negate those practices which may, to varying degrees, have contributed to the decline: high quality farmland, extensive commercial forests and sporting estates all produce benefits for Aberdeenshire. Within these land management practices, there are many examples of good practice including high-nature value farmland and [Wildlife Estates Scotland](#). However, as the range of policies show, biodiversity needs to be given greater protection and consideration. We need to not only protect remaining biodiversity but to secure healthy ecosystems and the benefits they deliver into the future.
- 9.4 There are a number of measures of biodiversity, at least at the national scale, which do suggest that the loss of biodiversity for some species or groups of species previously in decline has slowed or stopped. The efforts of land managers and others must be recognised in this – there are many examples of good practice and good news stories. However, there is ample evidence to suggest that the loss has not halted. The current and potential future role of the [North East Scotland Local Biodiversity Action Plan](#) in addressing the 2020 Challenge should be highlighted and further considered in Aberdeenshire. As should the role of the [North East Scotland Biological Records Centre](#) as a source of information and analysis.
- 9.5 As those who have been tackling loss of biodiversity across the region know, there are no simple solutions. Over time there has been a steady evolution of some key mechanisms to support biodiversity, and the position now is certainly better than it was 20 years ago. There are clear opportunities for multiple benefits and positive communication from the protection of biodiversity, notably pollination, soil formation and quality, and wildlife tourism. The key message that should be promoted is how essential biodiversity is to all our lives. Where there is the opportunity to take account of this value in planning land use activities, it should be afforded higher priority.
- ### ***Issues encountered during the Pilot***
- 9.6 Strategic planning mechanisms such as Local Development Planning, River Basin Planning and SRDP targeting provide opportunities to further embed such an approach (and are already moving in this direction). In order to fully realise the potential biodiversity (and wider) benefits, land managers need to have ready access to sound environmental training and advice. Funding needs to be provided for them to do so. The Pilot is aware that there are further moves in the next SRDP to boost availability and funding. It is hoped this will be advice which is available on-the-ground and locally.

- 9.7 Stakeholders in the Pilot's Local Focus Areas raised a number of concerns and issues in relation to halting biodiversity loss, highlighting that our view of biodiversity, particularly in the context of climate change, needs to be dynamic, and take account of nature's own adaptation processes. There needs to be a focus on the creation of resilient ecosystems in conjunction with the more traditional habitats and species based approach. They saw the charismatic exemplar species approach to conservation as having merit, but cautioned against ignoring or not publicising the role of less visible and organisms, notably in relation to soil formation.

Issues focussed on by the Pilot

- 9.8 In exploring options to halt biodiversity loss at the regional scale, the Pilot chose to look at the potential to create habitat networks. This focus was chosen as it fitted well with the Pilot's regional approach (specific, site based issues were difficult at this scale), as well as the GIS-based mapping process the Pilot was following. The approach taken analyses how easy it is for species to move through the landscape between patches of habitat. Greater connectivity in the overall habitat network increases species resistance to environmental change. Fragmented, isolated populations are more prone to extinction. Thus the goal is to create new habitat in areas that species can move to and that improve the overall connectivity of the network. It is an approach that has strong theoretical backing and is often mentioned in policy. However, it is acknowledged that on the ground examples of this process in action are harder to come by.
- 9.9 The Pilot chose to model habitat networks for broadleaf woodland and semi-natural grassland. Both these habitats are widely distributed across the region, are fragmented (i.e. would benefit from greater connectivity), are of high value to biodiversity and their location is well mapped. These habitats were chosen as exemplars but the method could be applied to other habitats. Figure 4 shows the habitat network analysis outputs for the region for the two habitats. In order to increase connectivity and the resilience of the network, the creation and expansion of each habitat type should take place within the corridors identified. The maps can also be used to assess where particular types of land use change might be less desirable as they could disrupt the network. This is an indicative analysis that works well at a strategic level. These connectivity maps have been used in conjunction with other information layers in the web-based interactive tool described in section 6.12 to 6.14, to suggest suitability for woodland expansion. Comments from stakeholders on the maps included the potential for networks to become pathways for invasive species and diseases as well as highlighting that increases in one type of network (e.g. woodland) could come at the expense of others (e.g. grassland).

Figure 4: Grassland (left) and woodland (right) networks for North East Scotland



10.0 Communities Connected to the Land

Key messages:

- A discussion on the potential for regional or local fora which can input to relevant land use planning activities is suggested.
- A strategic approach to the provision of recreation access is likely to have multiple benefits

Background

10.1 Few would deny that the majority of people in the UK are becoming increasingly disconnected from land and the environment. Although Aberdeenshire's population has a wide geographic spread, the urban population has grown greatly. Many of those who live in the urban and indeed rural areas have little connection with land and land use – often working within the urban centres. The numbers of people working in primary industries has greatly reduced. It is difficult to describe and measure the effects of this on our society and our environment. However, the potential health benefits (both physical and mental) of engaging with our natural surroundings, as well as the value of the environment to Scotland's economy, would indicate it as a problem which requires addressing.

Aberdeenshire Context

10.2 In recent years certain communities in Aberdeenshire have shown a reversal of this trend. Growth in rural pursuits such as walking, cycling and nature watching have been observed; there is increasing interest in growing food and buying locally; and schools have programmes which teach about, and make use of the outdoors. However, this growth has not been observed across all of society, and in the main it is a phenomenon involving the relatively wealthy. Undoubtedly any action to address this issue needs to focus on all sections of society so as to maximise benefits.

10.3 Arguably, the most important factor in increasing connection with land is to provide appropriate and accessible opportunities for people to experience, engage with, and influence land and land use. It is clear that a multitude of potential opportunities exist to promote this, some of which are underway in Aberdeenshire, others which could be worth exploring. The Pilot recognises food growing and access to local produce as a significant opportunity, although one it was unable to pursue within

the context of the Pilot. Education - of children, but also of adults - about land and the environment is critical, although equally not a priority for this project. It is also clear that a decline in employment in traditional rural industries has seen an increase in the relative economic importance of recreation and tourism in rural settlements in Aberdeenshire – something that is projected to increase further.

Issues encountered during the Pilot

10.4 The Pilot used its two Local Focus Areas, in the upper Dee and around Huntly, to engage with communities directly on land use issues. In these areas, a programme of workshops, led by James Hutton Institute, were held with local people. These allowed an opportunity to explore views on what the local environment means and provides to them, how it might change and what it should look like in the future. The discussions and outputs from these workshops had a strong influence on the Pilot, as the observations provided were interesting and insightful. However, the workshop process has highlighted the challenge of gathering representative views from across a community. Those who attended already had some interest in the subject, so some views may have been ‘missing’ from the process. It was also clear that to gather views from across the region would be highly resource intensive.

10.5 The engagement of local communities in land and land use does require further attention. Opportunities already exist for individuals and communities to engage with strategic processes, such as local development planning and forest design plans. Often, the interests of the community may be represented by elected officials or by public bodies, in recognition of the difficulty in consulting all. This clearly has merit as a workable and proportionate system. However, there is a feeling that opportunities for individuals and communities should be greater and more innovative, enhancing opportunities for local decision making (bearing in mind concerns expressed by stakeholders described in 4.23). Few people feel empowered to engage with land use issues currently.

10.6 The Pilot would suggest that a regional (or indeed local through further development) forum should exist where communities and other stakeholders can discuss and have influence over key rural land use change decisions. The approach could be modelled (or indeed be a development of) the Area Advisory Group process that aids the delivery of River Basing Planning. Regional and local SRDP allocation, woodland planting and grants, water management, recreational access and wildlife management are all areas which stakeholders and local communities will have interest in, and which may benefit from such input. Although these process already, in the main, have associated consultation processes associated, a holistic approach to the issues and opportunities is lacking. This idea needs further refinement, however the Pilot is keen to open up a conversation about its merits and practicalities. Such an approach is strongly aligned with the goals of the [Community Empowerment Bill 2014](#).

Issues focussed on by the Pilot

10.7 As an example of a regional approach to connecting communities to the land, the Pilot chose to explore opportunities to increase recreational access. Although not an answer to all the relevant issues, access provision is seen as one method of providing engagement, while also potentially delivering health benefits. Settlements of over 2000 people were chosen as a focus for the analysis, as these provided the highest number of potential ‘users’. A version of the woodland suitability map shown and

described in Section 5 was produced, within which the creation of woodlands within 2kms of these settlements was positively weighted. As described in section 5.14, the woodland model created by the Pilot is flexible, with the option of changing the analysis based on the goal in mind. As a point for discussion, it is suggested that there should be an assumption in favour of making all new, publicly funded woodland within this zone accessible. In responding to the issue of increased access, land owners often raised the issues of the need for responsible access, without this many are less willing to get actively involved in support such measures.

PART 3 – Suggested actions and what next

11.0 Suggested actions

- 11.1 The following section highlights some key issues that have emerged from the work of the Pilot and where it is felt that further action may be required. Further consideration of these issues would help to achieve the aims and goals of the Land Use Strategy in relation to rural land use in Aberdeenshire. The list is not seen as exhaustive, as the work of the Pilot could never be exhaustive on this complex, multi-layered topic. The suggested actions highlighted identify gaps in ongoing work. They are set out below to raise awareness and to inform the debate on future work in this area. Regional Action 1 can be considered over-arching, with those below supporting its achievement. Thus, all the actions are seen as complementary.

Regional Actions

RA 1: *Explore a more integrated and inclusive approach to rural land use planning which better takes account of, and protects long term, the goods and services provided to all sectors of society by the natural environment.*

Integrated catchment management is suggested as one workable route to achieve this. Regional land use fora are also suggested as having potential to aid engagement and holistic planning, as long as their scope and role is clearly defined – stakeholders urge that we must avoid creating ‘talking shops’. Alignment of the policies and targets from the various relevant sectors would be a central goal. Any such approach should be able to draw on a national dataset which contains up-to-date key information of relevance to rural land use planning. Resources and complexity would continue to present significant challenges, but in the absence of a revised approach, the aims of the Land Use Strategy may be difficult to achieve.

RA 2: *Ensure the potential effects of climate change on rural land use are given greater attention.*

Although the Pilot could not be certain about the full effects climate change will have on land use in the region, it has highlighted that change is inevitable and is likely to have consequences. If and how land based businesses respond will be key to the nature and scale of these effects - both on the businesses themselves, and also on society, the environment and the economy. One potential change highlighted by the Pilot is an increase in prime agricultural land; this could be a resource for the region, but its use needs to be carefully considered so as to maximise benefits and minimise impacts. The Pilot would encourage land managers and the structures which support, advise and fund them to take greater account of the inevitability of change and to plan accordingly. The overall goal is to create resilient businesses and effectively deliver public benefits.

RA 3: *Explore the scope for, and implications of expanding woodland in Aberdeenshire*

The multiple benefits that woodland can deliver are clear. Integrating trees with existing land uses can be challenging, but the Pilot has shown that a GIS based approach can highlight opportunities and aid in overcoming conflicts. Cultural and financial barriers to woodland expansion should be explored, with a greater emphasis on the effective integration with rural businesses. The mix of productive versus non-productive woodlands as well as further acquisitions to the national forest estate could be explored.

RA 4: *Explore the provision of direct, local, on-the-ground advice for land managers.*

In order to meet environmental challenges and maximise the public benefits of payments made to land managers, direct advice and support should be provided. Improvements in targeted advice are being considered for the next SRDP; it is hoped that local stakeholders will be consulted on if and how such advice will be delivered. If the advisory services provided nationally fail to meet local stakeholder needs, a regional discussion should take place on the potential to create alternative sources.

RA 5: *Continue work to understand and, where appropriate, map the natural assets and benefits delivered by Aberdeenshire's environment.*

The Pilot has found that the majority of stakeholders see significant benefits in being able to understand, describe and, where appropriate, map the benefits delivered to people by the natural environment. The Pilot's work has shown how this information might be used in strategic planning processes. Full information on our natural assets is currently lacking, although work is ongoing within the region and nationally to address this⁴. This work should be encouraged and supported with the ultimate goal being its incorporation into relevant decision making processes in Aberdeenshire. Issues of data sharing and access between organisations will also need to be addressed.

- 11.2 The five actions set out above are focused on the Aberdeenshire region, although they are likely to merit consideration across Scotland. A particular focus for Aberdeenshire Council should be engagement with neighbouring local authorities and Cairngorms National Park on the Pilot's work; fora such as the North East Scotland Agricultural Advisory Group could be helpful in this respect. The work of the Pilot and feedback from stakeholders also highlighted actions that should be given greater consideration at national level:

National Actions

NA 1: *Explore a national assessment of land use opportunities and constraints*

A point made consistently by a number of the Pilot's stakeholders was that any integrated regional land use planning approach should be informed by a national consideration of constraints and opportunities. It is clear that some localities are better suited to renewables, woodland and/or intensive agriculture than others. Could this suitability be reflected nationally, so as to ensure that the delivery of targets and benefits is appropriately weighted across the country, reflecting broad regional characteristics? Although potentially politically challenging, the benefits of doing so should be explored.

NA 2: *There should be a greater focus on the reduction of total carbon dioxide emissions resulting from food production.*

Reducing carbon dioxide emissions from some of the major sources - transport, energy generation and heating - has a number of clear strategies in Scotland and considerable effort is channelled into achieving the goals. However, a clear focus and strategy seems to be lacking for food production. In the recent Scottish Government document '[Becoming A Good Food Nation](#)' it is suggested the 31% of

⁴ Through the [Scottish Governments Strategic Research Programme](#) or through initiatives such as the [Ecosystem Services Community](#) (ESCom) for example.

Scotland's yearly emissions come from food production, processing and disposal. What are the strategies for reducing these? The report ['How Low Can We Go'](#) indicates those measures which can be taken in food production to reduce emissions and highlights the urgency of doing so.

12.0 What next?

- 12.1 This core function of this document is to further debate on land use change issues in Aberdeenshire and to instigate further steps on the journey towards a more holistic management approach. It is one of the final outputs of the Aberdeenshire Land Use Strategy Pilot and it is hoped that it will be a helpful reference for those working locally and regionally.
- 12.2 The Pilot formally ended in March 2015 with its final reports being submitted to Scottish Government for consideration. The outputs of both the Aberdeenshire and Scottish Borders Pilots will inform the 2016 revision of the Land Use Strategy where the Government's position will be set out. However, the James Hutton Institute and Aberdeenshire Council are committed to facilitating that debate in Aberdeenshire in the short term. The future direction of the debate in the region is up to all those who get involved. Further comment and feedback on the actions set out above and on any other aspect of the document continue to be welcome. Expressions of interest and involvement from individuals and organisations in the ongoing debate are particularly welcomed.

Aberdeenshire Council
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