RURAL ECONOMY AND CONNECTIVITY COMMITTEE

SUBMISSION FROM SCOTTISH WILDLIFE TRUST

THE DRAFT CLIMATE CHANGE PLAN (RPP3)

1. The Scottish Wildlife Trust welcomes the opportunity to submit evidence to the Environment, Climate Change and Land Reform Committee regarding the Scottish Government's draft Climate Change Plan (Third Report on Proposals and Policies – RPP3).

Background

2. The Trust believes that actions to tackle climate change and efforts to prevent biodiversity loss are two sides of the same coin. And, maintaining and restoring ecosystem health is a prerequisite to mitigating the impacts of, and adapting to, climate change. Furthermore, the creation of carbon sequestering landscapes and 'climate change ready' cityscapes offers new opportunities to re-balance the carbon budget whilst creating environments that provide for the needs of both the human population and for biodiversity. [1]

3. In the Trust's evidence[2] to ECCLR on the draft Budget 2017-2018 we wanted to see more ambitious actions and policies (matched with resources) to mitigate the effects of climate change. Pertinent to our evidence on RPP3 we wanted policies in place to *inter alia*:

    - Achieve a minimum of 21,000 ha of peatland restoration per year
    - Increase the area of native woodland
    - Protect soil biodiversity and improve carbon sequestering capacity of agricultural soils
    - Realise the potential of Scotland's blue carbon stocks

4. The Trust's RPP3 evidence is centred on the natural environment and land use and the progress Scotland is making, and will make by 2032, towards creating carbon sequestering landscapes that deliver wider benefits including enhancing ecosystem health and biodiversity. Our evidence has also been guided by the fifth report published by the UK Climate Change Committee[3] (CCC) which highlights, *inter alia*, "the little progress [that has been made] in reducing emissions from agriculture and land use and the need for stronger polices in RPP3" and the UK CCC report on climate change adaptation[4] which states, *inter alia*, that: "productive soils are being lost" and that "Further action on the ground is needed, including: the wider restoration of peatlands and native woodlands." And the need for "more extensive protection of agricultural soils; and the introduction of further measures to help safeguard forests from pests and pathogens."

5. We have also included a section on the marine sector and the opportunities surrounding blue carbon sequestration; a policy or proposal on blue carbon appears to have been completely omitted from RPP3.

Key points

6. The Trust welcomes the ambitious proposals in RPP3 for reducing Scotland's carbon emissions which represents a 66% reduction below 1990 levels by 2032. Whilst we are pleased the Scottish Government is committed to restoring 20,000 ha of peatland per year up to 2032 (which addresses the concerns of the UK CCC and the Trust's ask), we are disappointed that the targets for greenhouse gas emission (GHG) reduction set for the agricultural sector appears to have ignored the recommendations in the UK CCC report and are the lowest reduction goals set for any of the sectors in RPP3. We also seek clarity regarding the target for the expansion of Scotland's forests and woodlands; we are unclear if RPP3 has addressed the concerns of UK CCC (adaptation) report regarding Scottish

Government's lack of progress in native woodland restoration. The Scottish Biodiversity Strategies' (SBS) Route Map has actions aimed at restoring approximately 10,000 ha of native woodland into "satisfactory" condition by 2020, and a target to create 3,000 to 5,000 ha of new native woodland per year, but it is unclear from the Forestry section in RPP3 what proportion of the woodland creation target up to 2032 will be native woodland as opposed to non- native conifer.

7. We also note there is no reference to 'blue carbon' and the Land Use Strategy is only mentioned once, which combined appears to be a retrograde step from RPP2.

LAND USE

Forestry

8. Scotland remains unusual among European countries in the low proportion of its land area (4%) that is native woodland. Native woodland accounts for less than one quarter of Scotland's woodland area. Coniferous woodland makes up nearly three quarters, and > 80% of this is planted with non-native species.[5]

9. Increasing Scotland's woodland cover is welcomed by the Trust. However, the woodland creation targets set in RPP3 should align with the targets to create new native woodland in the Scottish Biodiversity Strategy, which contribute to meeting Scotland's international commitments. This should be clarified in RPP3.

10. The Scottish Biodiversity Strategy Route Map sets a targets of between 3,000 to 5,000 ha of new native woodland creation per year (up to 2020), which is based on 10,000 ha of woodland planting per year; so if planting is to increase to 15,000 ha by 2024/25, increasing this pro-rata would see 5,000 to 7,000ha of native woodland created per year. To be clear and taking the targets identified in paragraph 13.3.7, the Trust would like to see the woodland creation target and appropriate incentives under forest planting schemes for native woodland per year increased to at least:

    - 6,000 ha from 2020/2021
    - 7,000 ha from 2022/2023
    - 7,500 ha from 2024/2025

11. Regarding carbon sinks, the fact that native woodland is slower growing is an advantage for carbon sequestration, because the carbon is locked up in trees for longer. Although fast growing commercial conifers can sequester carbon at a faster rate when they are grown in short rotation, some of the carbon taken up by the trees is returned to the atmosphere when wood is used for short life-cycle products like paper and cardboard. In addition, hard woods (i.e. broadleaves) have a greater wood density than soft woods (i.e. conifers) – making the carbon content per unit volume higher e.g. hardwood species such as oak have a timber C content of 0.30 tC m^{-3}, while for softwood species such as Sitka spruce it is 0.17 tC m^{-3}.[6]

12. In terms of co-benefits which are reported in RPP3, there is a substantial difference in terms of biodiversity gained by investing in native woodlands (composed mainly of broadleaved species and/or native conifers such as Scots pine and juniper) compared to non-native conifer forests; the Native Woodlands Survey of Scotland[7] states: "Native woodlands are particularly important for biodiversity and host a high proportion of our rare and threatened species, perhaps more than any other habitat type of comparable area." Coupled with this, the Climate Change Committee's (CCC) report states that the resilience of Scotland's natural environment to pests and diseases could be enhanced by further effort to restore native woodlands[8]

13. Native woodlands can also be created by natural regeneration, provided there is a viable seed stock (and/or local seed rain source), if grazing pressure is reduced (see for example reforestation in SW Norway[9]); this may be a cheaper option than native woodland planting or conifer planting *per se* under the Forest Grant Scheme. This option was available for woodland creation from 2007-13 and should be reinstated. Natural regeneration has the advantage of ensuring the most vigorous specimens grow because they have already self-selected for the particular site conditions. The Trust believes there should be a policy option in Table 13-1 to allow for this regeneration option.

14. One of the conclusions of the Native Woodland Survey of Scotland[10] was that "the most widespread single factor inhibiting native woodland recovery is high levels of browsing and grazing impacts which inhibit woodland regeneration." Therefore to encourage regeneration and expansion in existing native woodland, deer numbers will need to be reduced in some areas (as well as sheep and other herbivores if present). This would improve the condition of existing native woodland, and thus its carbon sequestration potential e.g. regeneration within the woodland would increase the number of trees per unit area.

15. Reduced grazing pressure would also improve timber quality and production from commercial forests e.g. in 2015 Forest Enterprise Scotland recorded nearly 20% of the leading shoots of one year old restocked trees had been eaten by deer, and more than 60% of restocked plantations had more than 10% of trees browsed by deer.[11]

16. The Trust believes there should be a policy option in Table 13-1 to encourage native woodland regeneration and reduce grazing pressure where needed.

17. Lastly, continuing to rely primarily on Sitka spruce for commercial timber production (nearly 60% of Scotland's coniferous woodland is Sitka spruce[12]) exposes Scottish forestry to pest and disease risk. The CCC report[13] suggests that "Forestry Commission Scotland should consider by the end of 2017 whether additional action is needed to reduce the spread of pests and pathogens, particularly where they threaten native Caledonian pinewoods, and whether further action to increase species diversity in the Public Forest Estate would be beneficial in order to build resilience to climate change."

Peat

18. The Trust supports the new annual peatland restoration targets of 20,000 ha through to 2032. We also welcome the 2017 budget announcement of £8 million funding to help deliver the 10,000 ha restoration target set for 2017. Going forward, we believe there must be continuity of funding support for the duration of this aspect of the climate change plan to ensure the ambitions for peatland restoration are realised. To see this secured, we would like to see a separate line in the budget statement which clarifies how financial commitment to peatland restoration is to be carried through in subsequent budgets. This would avoid boom-bust cycles of funding which can undo the local economic benefits arising from peatland restoration including losing skilled contractors (some having made substantial investments in new equipment). Short-term funding also makes it difficult to pay for monitoring (e.g. quantifying the benefits for carbon, water and biodiversity) or to pay for sustainable long term management of restored peatlands (e.g. reduced or complete removal of grazing pressure including through fencing and removal of conifer regeneration).

19. The Peatland Action[14] model has been effective for ensuring the right restoration in the right place. The Trust supports a return of Peatland Action (as opposed to delivery through an SRDP type process) as this is the most effective and flexible vehicle to engage land owners and fund restoration; to be effective we believe it should include funding regional peatland advisors.

20. Given that the Peatland Action model (in which regional peatland advisors were an integral part of the process) for grant funding peatland restoration has already been established and tested, we question the validity of the level of application failure (and the basis for the presumption) given in Table 6.1 (page 33) for each year. With proper support and guidance, we believe there should be few failed applications which at present have discouraged landowners from engaging further with the process of restoring peatlands.

21. Post restoration policy is needed to make sure there is commitment from current or future landowners so that restored peatland continues to be sustainably managed and is protected from future pressures (e.g. development or inappropriate stocking levels). The Trust believes ongoing payment for continued stewardship of restored peatland (e.g. payment for ecosystem services which is briefly referred to in agriculture section) will be needed to deliver maximum benefits from capital investment in peatland restoration. An agri-environment climate type scheme would be one route, but the system itself will need to change as it would currently struggle to pay where the result is land without livestock or low livestock numbers. Likewise perverse incentives in agricultural support payments which encourage inappropriate stocking densities on peatlands must be removed.

22. Private investment in peatland restoration, such as through the Peatland Code[15], should be encouraged as this can contribute to delivering existing targets and increase the total level of funding for peatland restoration and monitoring. This could in part be achieved by providing business incentives for peatland investment e.g. Scottish Government encouraging reporting by businesses of carbon emission reductions through investments in peatland restoration.

23. Lastly, the Trust is concerned that there is no specific reference to the phasing out of peat use in horticulture.

24. In RPP2 (p219) it was stated that Scottish Government have committed to "reduce and eventually phase out the use of peat in horticulture" whilst acknowledging the sourcing of peat from other countries. It stated "real improvement requires the marketing and distribution of alternatives to peat in horticulture".

25. Whilst we acknowledge that peat extraction in Scotland does not make a large contribution to carbon dioxide emissions, it is included in mandatory accounting. The continuation of peat extraction in Scotland through recently granted planning permissions by local authorities and ongoing applications is at odds with the Scottish Government's policy commitment to restore and conserve peatlands and the duty on public bodies relating to climate change[16].

Agriculture

26. The agricultural sector was the third largest source of GHG emissions in Scotland for 2014 (10.7 $MtCO_2e$) and as a percentage share by sector emitted 22% of Scotland's GHGs.[17]

27. Given that agriculture occupies a large part of Scotland's land (i.e. *c*. 5.7 million ha; 73 % of total land area[18]), and given the importance of ruminant livestock in Scottish farming, and resultant methane emissions, it is to be expected that it would be a significant source of emissions. That said, the Scottish Wildlife Trust believes that by improving on farm efficiency; restoring agricultural ecosystems; fully embracing agro-ecology and agroforestry; reducing livestock emission intensities (emissions per unit of animal product);[19] returning agriculturally unproductive land to its natural state; and removing perverse incentives it is possible to substantially reduce emissions from many Scottish agricultural units and convert

some into net carbon sinks (which would align with our ambition for carbon sequestering landscapes).[20]

28. Progress to date shows that emissions from agriculture have fallen by 25% between 1990 and 2014, with the main reasons for the decline being behaviour and land use change reflecting external economic drivers: fewer cattle and sheep (because of removal of headage payments in 2005) and a reduction in nitrogen fertilizer application (reflecting the increase in energy input expenditure compared to outputs, and regulation in Nitrate Vulnerable Zones).[21]

29. Policies to further reduce GHG emissions in the agricultural sector must make better use of public subsidies to support the rural economy and sustainable food production whilst at the same time reducing emissions by *inter alia* creating carbon sequestering landscapes. An example would be a greening payment that leads to reduced stocking (in the uplands), but the farm is still viable because reduced income from commodity production is compensated by public money for the ecosystem services provided by the changed landscape (e.g. carbon storage, flood prevention, biodiversity, increased water quality).

30. In RPP3, the Scottish Government has an ambition for "Scotland to be among the lowest carbon and most efficient food producers in the world". However, the Trust believes the targets in RPP3 do not go far enough and the proposed course of action will not match the Scottish Government's ambitions. A twelve percent reduction by the agricultural sector over c. 15 years (Table 2.1 page 10) is a light burden compared to expected reductions from other sectors e.g. Industry - 14 %; Waste - 70 %; Residential - 76%; and Transport - 31%.

31. Regarding soil testing, the Cabinet Secretary for Environment Climate Change and Land Reform stated on 25 October 2016 "Obviously, compulsory soil testing is going to be part of the climate change plan" however the RPP3 presently does not reflect this policy intention and the Trust welcomes and supports the Committees' letter to the Cabinet Secretary for Rural Economy and Connectivity seeking clarity on the issue.[22]

32. Whilst fully supporting compulsory soil testing, the Trust would like to know how this information will be used to help farmers become more efficient and reduce emissions and what actions will be required of the farmer depending on soil testing results. We also note that the test is for pH, phosphate and potassium, it is unclear to us why soil organic matter is not part of the test – we wonder if this would be useful to map the carbon storage in improved agricultural landscapes as well as helping farmers to manage soil health and biota effectively.

33. The Trust also notes the Scottish Governments ambition to reduce nitrogen fertiliser use by 2020 (14.2.3), however, it is not stated how the strategy will be changed if the voluntary approach is unsuccessful. The Trust agrees with the Committee on Climate Change's 2016[23] report which states that "If the [Scottish] government continues with voluntary measures it must be clear how they will be judged and if found to not be working consider other options."

34. Regarding Carbon audits, the target in table 14-4 "Policy outcome 1 over time" states that 200 farms will have free carbon audits by 2021. Given that there are, according to Scottish Government figures, 52,303 farm holdings in Scotland, the Trust questions if 200 farms is sufficiently ambitious (e.g. there are 2,515 farm holdings in the Borders alone and 13, 607 in the South West region). [24]

35. The "Farming for a Better Climate" (FFBC) scheme run by SRUC on behalf of the Scottish Government provides practical support to benefit the farms and help reduce the impacts on

the climate. The programme has showed some impressive financial and environmental results.[25] Improving efficiency, saving money at the same time as reducing emissions, will be a key driver of change in the agriculture sector, and will become particularly important going forward with uncertainty about future levels of farm support, and implications of changing trade arrangements for commodity prices.

36. Going forward, the Trust believes that a whole farm review covering both biodiversity and climate issues should be incorporated into a form of cross compliance for whatever scheme replaces the CAP.

37. The RPP3 also seems to assume that efficiency is the only way to combat high GHG emissions from agriculture (e.g. section 14.2.2). Whilst efficiency must be sought, it is also the case that restoring ecosystems to health, practicing agro-ecology and agroforestry practices can help reduce emissions, contribute to adaptation as well as helping tackle biodiversity problems. For example, Craigengillan is a 1,400 ha hill farm and estate in Ayrshire (and a FFBC case study). Between 2012 and 2015 152 ha of new native woodland were created. Sheep stocking was reduced from 890 to 550 ewes, but planting the trees on the more marginal land has improved sheep condition and resulted in better lambing percentages. The woodland will sequester an estimated 65,000 tonnes of CO_2 over its lifespan, and the farm now sequesters an additional 1,000 tonnes of CO_2 equivalent per year. As well as planting grants, the woodland is generating payments for carbon credits under the Woodland Carbon Code. [26]

Blue Carbon

38. The Trust is disappointed that there has been a complete omission of blue carbon in the draft RPP3. The potential value of blue carbon habitats was highlighted in RPP2 (pg. 224 and 225), with emphasis on the need to increase the knowledge and scientific understanding and develop policies on blue carbon in RPP3. The lack of continuity between the two plans is surprising, especially as the conservation and carbon sequestration value of blue carbon habitats to mitigate climate change is recognised worldwide.[27]

39. Since RPP2 there have been increased efforts to better understand the potential sequestration value of blue carbon habitats, most notably the SNH commissioned report No. 761[28] on carbon budgets and blue carbon stores in Scottish waters. However, despite these advances, the carbon sequestration value of Scotland's marine environment does not feature in RPP3.

40. Scotland's marine area contains a wealth of important blue carbon habitats, such as seagrass meadows, kelp forests, and cold-water coral reefs. The establishment of Scotland's MPA network, which covers 20% of Scotland's seas, has, by default, already begun the process of protecting many of these habitats, yet the carbon sequestration value of the MPA network has not been acknowledged in the RPP3. Appropriate management and continued expansion of Scotland's MPA network could return considerable potential for carbon sequestration.

41. Although the term 'blue carbon' is relatively new, the importance and value of carbon sequestration in marine habitats is already well established under different guises, e.g. natural carbon sinks, carbon capture and storage. For example, Scotland's National Marine Plan (NMP) states:

42. "Reducing human pressure and safeguarding ecosystem services such as natural coastal protection and natural carbon sinks (e.g. seagrass beds, kelp and saltmarsh) should be considered. In some cases, compensatory habitat creation or enhancement may be possible

and should be considered as a last resort if significant harm cannot be avoided. Appropriate proactive opportunities for enhancing natural carbon sinks and allowing natural coastal change where possible should also be considered."

43. Also contained within the NMP are regional policies that apply to Scotland's 11 Regional Marine Plans (RMPs) and require the plans to:

    a. Identify significant natural carbon sinks and seek to avoid colocation with potentially damaging activity; then
    b. Assess the acceptability of any proposed partial loss or damage to natural carbon sinks (including any compensatory measures) through licensing or management of marine activities, balanced with priorities presented in this Plan and respective regional marine plans.

44. The inclusion of marine carbon sinks (i.e. blue carbon habitats) in the NMP, and subsequent RMPs, demonstrates the level of importance the Scottish Government has placed on blue carbon with respect to marine planning, conservation and climate change mitigation. Therefore, the lack of recognition of blue carbon in the RPP3 appears to be a major oversight.

Scottish Wildlife Trust
8 February 2017

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[1] See Scottish Wildlife Trust's Climate Connections Policy Futures 3 http://scottishwildlifetrust.org.uk/docs/027__104__publications__Climate_Connections_final___low_res__1306398243.pdf
[2] See: http://scottishwildlifetrust.org.uk/docs/002_466__scottishwildlifetrustevidencescottishbudgetoct2016final_1478526299.pdf
[3] See: https://www.theccc.org.uk/wp-content/uploads/2016/09/Reducing-emissions-in-Scotland-2016-Progress-Report-Committee-on-Climate-Change.pdf
[4] See: https://www.theccc.org.uk/publication/scottish-climate-change-adaptation-programme-an-independent-assessment-for-the-scottish-parliament/
[5] Forestry Commission. Forestry Statistics 2016: http://www.forestry.gov.uk/pdf/Ch1_Woodland_FS2016.pdf/$FILE/Ch1_Woodland_FS2016.pdf and Forestry Commission. Results of the Native Woodland Survey of Scotland. http://www.forestry.gov.uk/PDF/FCMS126.pdf/$FILE/FCMS126.pdf
[6] Forestry Commission report: Morison et al 2012. Understanding the carbon and greenhouse gas balance of forests in Britain available at http://www.forestry.gov.uk/pdf/FCRP018.pdf/$FILE/FCRP018.pdf
[7] See: http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/native-woodland-survey-of-scotland-nwss
[8] See: https://www.theccc.org.uk/publication/scottish-climate-change-adaptation-programme-an-independent-assessment-for-the-scottish-parliament/
[9] Landscape history and land use in SW Norway - Duncan Halley; presentation to the Scottish Parliament
[10] http://www.forestry.gov.uk/PDF/FCMS126.pdf/$FILE/FCMS126.pdf
[11] SNH Review of Deer Management, Chapter 5: http://www.snh.org.uk/pdfs/publications/corporate/DeerManReview2016.pdf
[12] http://www.forestry.gov.uk/pdf/Ch1_Woodland_FS2016.pdf/$FILE/Ch1_Woodland_FS2016.pdf
[13] See: https://www.theccc.org.uk/publication/scottish-climate-change-adaptation-programme-an-independent-assessment-for-the-scottish-parliament/
[14] See http://www.snh.gov.uk/climate-change/taking-action/carbon-management/peatland-action/information-for-applicants/
[15] See: http://www.iucn-uk-peatlandprogramme.org/peatland-code
[16] Climate Change (Scotland) Act 2009 Section 44
[17] See http://www.gov.scot/Resource/0050/00503570.pdf
[18] See: http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/agritopics/LandUseAll
[19] Gerber P J et al 2013. Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. Food and Agriculture Organization of the United Nations (FAO), Rome http://www.fao.org/docrep/018/i3437e/i3437e.pdf
[20] See: http://www.nature.com/nclimate/journal/v6/n5/full/nclimate2910.html
[21] Defra Agricultural statistics: https://www.gov.uk/government/statistical-data-sets/agriculture-in-the-united-kingdom
[22] See: http://www.parliament.scot/S5_Environment/Inquiries/20170127_Conv_to_Cab_Sec_REC_on_Soil_Testing.pdf
[23] See: https://www.theccc.org.uk/wp-content/uploads/2016/09/Reducing-emissions-in-Scotland-2016-Progress-Report-Committee-on-Climate-Change.pdf
[24] See: http://www.gov.scot/Publications/2016/06/5559/83

[25] See: http://www.sruc.ac.uk/info/120200/climate_change_focus_farms
[26] See http://www.sruc.ac.uk/download/downloads/id/3193/craigengillan_new_woodlands
[27] IUCN Report – Coastal blue carbon ecosystems in NDCs 2016
[28] SNH commissioned report: Assessment of carbon budgets and potential blue carbon stores in Scotland's coastal and marine environment: http://www.snh.org.uk/pdfs/publications/commissioned_reports/761.pdf