

## **Wildfowl and Wetlands Trust – Written evidence (NSD0041)**

1. The Wildfowl & Wetlands Trust (WWT) is a leading wetland conservation charity which works to create a world where healthy wetlands thrive and enrich lives. WWT's Blue Recovery proposals embrace the use of wetlands as 'nature-based solutions'. This is an approach that sits at the heart of UK Government's Chair of COP26 and the UK's 25 Year Environment Plan. WWT responding to this inquiry because we are experts in the creation of salt marsh and have monitored carbon sequestration at our salt marsh reserve since 2014. We fundamentally believe there is significant potential and benefits to creating salt marsh for carbon storage.

### **1. What is the potential scale of the contribution that nature-based solutions can make to decarbonisation in the UK?**

- **Which ecosystems are most relevant to the UK for nature-based solutions, and which have the largest potential to sequester carbon or reduce emissions?**

2. The carbon sequestered in vegetated coastal ecosystems, specifically mangrove forests, seagrass beds, and salt marshes has a global area one to two orders of magnitude smaller than that of terrestrial forests. However, the contribution of vegetated coastal habitats per unit area to long-term carbon sequestration is much greater. This is in part because of their efficiency in trapping suspended matter and associated organic carbon during tidal inundation. (McLeod, E. *et al.* (2011) [A blue print for blue carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO<sub>2</sub>](#), Front Ecol Environ)
3. Salt marsh creation plays an important role in sequestering carbon. The Natural Capital Committee identified a strong case for restoring 22,000 hectares of salt marsh in England (EFTEC (2015) [The Economic Case for Investment in Natural Capital in England](#)). This would have a benefit cost ratio of between 2 and 3:1 ([The State of Natural Capital, Protecting and Improving Natural Capital for Prosperity and Wellbeing, Third Report to the Economic Affairs Committee, Natural Capital Committee, 2015](#)).
4. Wetland creation of this type provides benefits beyond carbon storage. Co-benefits include coastal defence, fisheries production, recreational opportunities and supporting biodiversity. It should also be noted that the land on which coastal habitat is created is increasingly becoming more vulnerable to sea level rise, often becoming uneconomic to protect.
5. Additional carbon storage in salt marsh will vary across the UK depending on a range of physical and biological factors. We therefore need to understand where the key sites are for habitat creation that have the highest long-term carbon storage potential. This is currently unknown. However, we know from the evidence that is emerging from a long term collaboration between WWT and Manchester Metropolitan University at Steart Marshes in Bridgwater Bay that the Severn Estuary has a vast potential for salt marsh creation with a significantly high carbon content. Equally, compared to previous agricultural land use, figures show that newly laid down sediment contains 4.5% organic carbon, twice as

much as that accumulated by past agricultural land management. Steart Marshes is currently storing carbon at a minimum rate of 92 tonnes CO<sub>2</sub>(e) per hectare per year. That means that between 2014 and 2018 the 260 hectares of salt marsh stored an approximate minimum of 120,000 tonnes of CO<sub>2</sub>(e). This is equivalent to growing around 2 million trees for 10 years (Mossman, H. *et al.* in press).

#### **4. Who are the key stakeholders for the implementation of nature-based solutions in the UK? How can stakeholders' expertise and concerns inform the incentives and requirements for implementing nature-based solutions?**

- **Are there examples of projects which have engaged with stakeholders and local communities to implement nature-based solutions successfully, and what can we learn from them?**

6. WWT Steart Marshes was created to offset for habitat losses from climate change. From the beginning WWT's work on site included significant stakeholder and local community engagement. There were monthly public meetings, community workshops and events, which resulted in community buy in to the managed realignment. Continued engagement includes a range of volunteer opportunities, onsite and offsite events and learning opportunities.
7. Steart Marshes remains an exemplar of landscape-scale habitat design and creation and alongside its programme of continued community engagement is held in high acclaim as a blueprint in working with local people to achieve rapid landscape change. However, such an achievement not only requires time and resources but to involve the right people with the right skills to develop lasting, trusted relationships. Being available to listen to local people reinforced that feeling of worth and value.
8. Lessons learnt include:
  - 8.1. Do not underestimate the time required to invest in communication.
  - 8.2. Early contractor and site manager involvement significantly helps efficiencies in the final design of the scheme, especially with knowledge of civil engineering, biodiversity management and people engagement techniques.
  - 8.3. Listen to and act on the concerns of the local community and understand the multiple values they place on their local landscape. Local residents at Steart were deeply concerned that Steart Marshes would be developed to attract significant numbers of non-local visitors. Therefore, at an extremely early stage, WWT made it clear that this was not its business objective, and gave reassurances that through appropriate design and messaging, the visitor numbers would be controlled.
  - 8.4. A friendly and approachable project team germinated a culture of openness. It was important to be neither overly technical nor too casual, and neither confrontational nor condescending. Face-to-face dialogue was used as a rule to resolve issues positively and amicably. Following through with discussions and reporting back, whether positive or negative was also found to be important.

- 8.5. A meeting area within the site office enables local residents to visit and talk in private about concerns they had. This space was also large enough for external events and housed presentation equipment enabling the project plans to be easily visualised.
- 8.6. Find long lasting ways of getting the community involved in the decision-making process: hold workshops on public paths and viewing points; suggest the local community offer possible names for the site; and allow them to make suggestions on landscape planning and follow through on delivering enhancements etc.
- 8.7. Identify ways (with the future site manager) to involve and engage with the existing skills, knowledge and interests of the local community.
- 8.8. Partnerships bring in external funding from grant givers who may otherwise be unavailable to give to a single organisation.
- 8.9. Invest time and financial resource in providing a community engagement officer who is trusted and respected by the local community. Bring alongside them a representative of the future site management body at a very early stage to ensure continuation of trust once the project has been completed. (Yamashita, H (2021) Coastal Wetlands Restoration Public Perception and Community Development, Routeledge)

**5. How should implementation of nature-based solutions be integrated with other government policies for landscapes and seascapes, for example, agricultural, forestry, and land-use planning policies?**

- **How could nature-based solutions implementation contribute to the UK's goals surrounding biodiversity, the preservation of nature, and adaptation to climate change?**

9. Nature based solutions such as salt marsh habitat creation deliver a range of multiple benefits which can help deliver a range of other Government policies and objectives, including various aspects of the 25 Year Environment Plan.
10. Salt marsh habitat creation can be designed alongside rebuilding of flood embankments to protect against sea level rise and buffer storm surges. Salt marsh provides an energy-absorbing buffer that make flood defences more resilient and helps communities adapt to climate change.
11. The value of salt marsh for wildlife conservation has been recognised for many years. Creeks provide spawning sites and nursery areas for many fish species and are an exceptionally important habitat for a wide variety of birds which use it for roosting, feeding, moulting and breeding. Salt marsh are particularly important for wintering wildfowl such as brent geese and wigeon. Very large numbers graze on the salt marsh vegetation during the winter months both as winter residents and during migration. In Britain, there are around 40 species of higher plants and 148 species of invertebrate that are found exclusively in saltmarshes. (Boorman, L.A., 2003 [Saltmarsh Review. An overview of coastal saltmarshes, their dynamic and sensitivity characteristics for conservation and management](#). JNCC Report, No. 334)

12. Salt marsh also provides valuable blue space and can be designed offering access to all through multi-functional paths delivering significant health and wellbeing benefits supporting government policies in this area. Spending time in wetlands, or blue space, can be especially beneficial to our wellbeing, improving mood and reducing stress. There is growing evidence that spending time in these blue spaces can be even more beneficial than being in green space. WWT Steart Marshes has been designed to be accessible to a wide range of visitors including residents of Bridgwater and WWT have a range of blue prescription options. The reserve offers nine miles of accessible paths for walkers, runners and cyclists. It hosts regular health walks and provides volunteering opportunities for adults with learning difficulties. We are developing partnerships with the local community to help people live with mental illness as well as provide adult learning courses.

- **Which ongoing governmental plans, policies, and strategies are relevant to nature-based solutions, and can they be better coordinated? For example, are the Nature for Climate Fund and associated targets for peatland and forestry restoration designed so as to support nature-based solutions?**

13. **Inclusion of nature based solutions, including creation of coastal habitats, within national climate change policies and Government's routemap to Net Zero.** The carbon sequestered by newly created salt marsh should be included in Government's Greenhouse Gas Inventory and Nationally Determined Contributions to the Paris Agreement. Incorporation of coastal habitat creation including salt marsh (and ultimately other wetland habitats) into these records should incentivise habitat creation and restoration for carbon storage and also help Government to achieve its climate and Net Zero targets.

14. The [2013 Supplement to the 2006 IPCC Guideline for National Greenhouse Gas Inventories: Wetlands](#) assists countries in compiling complete national inventories of greenhouse gases to include significant land-use and management activities occurring across a range of wetland habitats. The guidance has been structured so that any country, regardless of experience or resources, should be able to produce reliable estimates of emissions and removals of these gases.

15. The UK Net Zero target will require the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels. The Climate Change Risk Assessment 3 suggests that the UK needs 8 million tonnes of negative emissions from nature based solutions in 2050. Restoring and protecting blue carbon habitats can provide a valuable proportion of this.

16. **National Infrastructure Bank mandate for natural capital.** In addition to a mandate to contribute to the delivery of net zero, the National Infrastructure Bank must be given a mandate to encourage the financing of projects that promote nature recovery. The Government notes it will review the case for broadening the mandate to include other areas such as improving the UK's natural capital, before bringing forward legislation to put the Bank on a statutory footing. This would help by potentially providing guarantees for investors or seed funding for projects to enable investment readiness. However,

the government must also review the failure of the former Green Investment Bank, when government owned, to ever lend for natural capital purposes despite that being one of its four key areas of focus.

17. **A supportive policy framework to adopt a salt marsh carbon code and voluntary carbon market.** The Natural Environment Investment Readiness Fund has awarded funding to a number of nature based solutions for climate change. WWT is a partner with one of the successful projects to develop a saltmarsh code to support habitat restoration activities. The project will involve ground truthing verification at three sites with the potential to sit under a wider umbrella Blue Carbon Code, applicable in wider marine habitats. The project seeks to develop a rigorous and scientifically based voluntary certification standard for those that want to market the climate benefits of salt marsh restoration. It will provide assurances to voluntary carbon market buyers that the climate benefits are quantifiable, additional and permanent. It is important that following the conclusion of this project the Government's policy framework recognises and adopts the carbon code and a voluntary blue carbon market. One example could be a blue carbon equivalent to Government's woodland carbon guarantee which provides an option to sell verified carbon credits (Woodland Carbon Units (WCUs)) to the government for a guaranteed price every 5 or 10 years up to 2055/56. This provides an additional long-term income (Forestry Commission (2019) [Guidance: Woodland Carbon Guarantee](#), gov.uk).

18. UK is signatory to the Ramsar convention which includes a resolution [XIII.14 Promoting conservation, restoration and sustainable management of coastal blue-carbon ecosystems](#) which calls on signatories to estimate the carbon storage and fluxes of coastal wetlands; and update national greenhouse gas inventories to better reflect data for wetlands.

- **Should incentives for nature-based solutions be included in future agri-environment schemes, and if so, how?**

19. WWT support the new agricultural system to pay farmers for delivering public goods. There is potential within the new landscape recovery and local nature recovery tiers for farmers to undertake land use change. This should include the creation of salt marsh. However, alongside income foregone, payments must also include legally standing long term management agreements and payments for capital and maintenance. There is also the need for a support mechanism around long term management payments. The framework should ensure that sites do not revert back to intensive agriculture once carbon sequestration levels off. One way to do this could be to link on-going management payments with an annual carbon value.

## **6. How should nature-based solutions be planned and monitored at the national level?**

- **What measuring, reporting, and verification requirements should be put in place to determine the degree of success of nature-based solutions? Which techniques and technologies are best suited to accomplishing robust monitoring?**

20. It is important that any voluntary carbon market has an effective reporting and verification system to support it. This will help provide certainty to investors and ensure delivery of high quality habitat. This is why the development, and Government adoptions of, a salt marsh carbon code is key as it will provide a rigorous and scientifically based voluntary certification standard for those that want to market the climate benefits of saltmarsh restoration.

*14 September 2021*