

6. Land Use

This is an extract from
Dorset 2030
Living in a zero-carbon county

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Defining a Vision for 2030

From a climate perspective, land use accounts for around a quarter of all GHG emissions globally, predominantly through industrial-scale agriculture (particularly meat and dairy) and deforestation (often to clear space for cattle or cash crops)¹. In terms of wider environmental breakdown, the way we are using our land is at the core of the problem. Through increasing encroachment of human activity on natural environments, the disruption of natural cycles (carbon, nitrogen, water and others) and the loss of biodiversity we are rapidly approaching the limits of what our planet can sustain². The UK is not immune to this³.

While there is a growing recognition of several high-profile issues (single-use plastic, building on flood plains, destruction of the Amazon), the way 'business-as-usual' is devastating our planet remains largely unseen. We remain disconnected from both nature and our food systems. As nature-based solutions will need to sequester carbon at a rate greater than we produce it (for at least the next 100 years), and as we need to feed 7 billion plus people, reconnecting and truly understanding the value of our land and sea, are central to our very survival. The role of the sea is also included in this chapter as the health of our oceans is critical to both addressing climate change and sustaining life in general.

In 2030...

Across Dorset the value of our land and sea is understood and recognised by all, including how it plays an important part in the physical and mental health benefits of residents and visitors. Through programmes of regeneration, reforestation, rewilding and reconnecting, everyone can witness how nature is recovering, biodiversity increasing and food systems improving. The way we use our land is consistent with the model set out in the Zero Carbon Britain reports. All Dorset rivers are in a good ecological condition.

Through awareness raising and education there is no longer a disconnect between town and country; our food chains are transparent, and much more of our food is produced locally. Within urban areas, common land is extensively used for community gardens, carbon management or biodiversity improvement. Market gardens are flourishing. Abandoned land has been brought into one or more of the above programmes. The farming community has been supported to make the necessary changes to practices and land use. The decline in species has been halted.

Areas of the county have been identified and used for rewilding. Nature-based solutions are widely employed. Regeneration extends beyond the coastline, with marine protection zones and extensive seagrass restoration off the Purbeck and West Dorset coasts.

¹ <https://www.ipcc.ch/srccl/chapter/summary-for-policymakers/> (Figure SPM.1)

² <https://stockholmresilience.org/research/planetary-boundaries/the-nine-planetary-boundaries.html>

³ <https://www.edie.net/news/11/IPPR--UK--acutely-vulnerable--to-environmental-breakdown/>

Assessment Framework

How are we performing currently?

The framework below sets out the criteria against which the current status can be assessed. Aspirational objectives are then set to encourage progress towards the vision. Land use is a much more complex area than, say, renewable energy provision (which can be measured as a specific percentage of requirements). For this initial assessment we have taken the Zero Carbon Britain model (explained further below) and set out a rough set of steps towards achieving this. For this measure, a critical first step will be to define what the future land use vision should be along with further work to set out clearer goals and expectations.

Category	Assessment Criteria
1	Little evidence of any attempts to improve land use across the county
2	Localised initiatives being undertaken but little evidence of any coordinated action across the county.
3	Detailed plans of what land use could look like (broadly aligned with the ZCB vision) have been created at Council or other stakeholder level. Specific initiatives in support of this are in design, development and implementation.
4	Progress towards the county plan / ZCB vision is clear with notable changes in the % make up of land use. Plans are being designed and implemented to complete the shift.
5	Land use across the county aligns with at least 90% of the ZCB vision (or an enhanced version developed with local input). Plans are in place to close the remaining gaps.

2021 Assessment

Where are we now and what else do we need to know?

Despite living in a county blessed with some of the most beautiful countryside and landscapes the country has to offer, the **Valuing Nature Research Project (VNRP) Report**⁴ (*Trends in Natural Capital, Ecosystem Services and Economic Development in Dorset*), led by a team at Bournemouth University concluded that “Dorset’s environment has been seriously degraded over the past 80 years. Measures of biodiversity value have undergone a substantial decline in this period, (with a) 97% loss of neutral grassland and 70% loss of calcareous grassland. The condition of remaining semi-natural habitats has been reduced by nitrogen deposition and habitat fragmentation; (...) the mean area of heathland patches has declined by 29% since 1978. These trends are primarily attributable to agricultural intensification and changing farming practices.”

This extensive report has been the core input to this chapter as it provides a comprehensive analysis of most of the aspects we need to consider. While Dorset Council (DC)⁵ original CEE plan suggested emissions from land use may only form 2% of the area’s total, the VNRP report suggests this may be understated and certainly does not reflect the poor health of our natural environment. In 2019, Defra data suggests there may be a net sequestration of carbon of 145 ktCO₂e.

As can be seen, land use is a complex area, however because Dorset’s farmed areas represents 75% of our land, which is broadly in line with the UK average of 70%⁶, we have adopted the ZCB model as a starting point to aim for, pending the development of a more localised version. This mix has been calculated to provide appropriate levels of carbon capture, a dramatic increase in the amount of food we produce for ourselves, some production

of energy crops, and growing hemp for buildings and infrastructure. As noted in the *Power Down* chapter, there are multiple benefits of using natural products in the building process, including straw and wood. This land use scenario is primarily achieved through reducing the area of grassland used for livestock (the implications of this are covered in the *Eat Well* chapter). These changes are illustrated below.

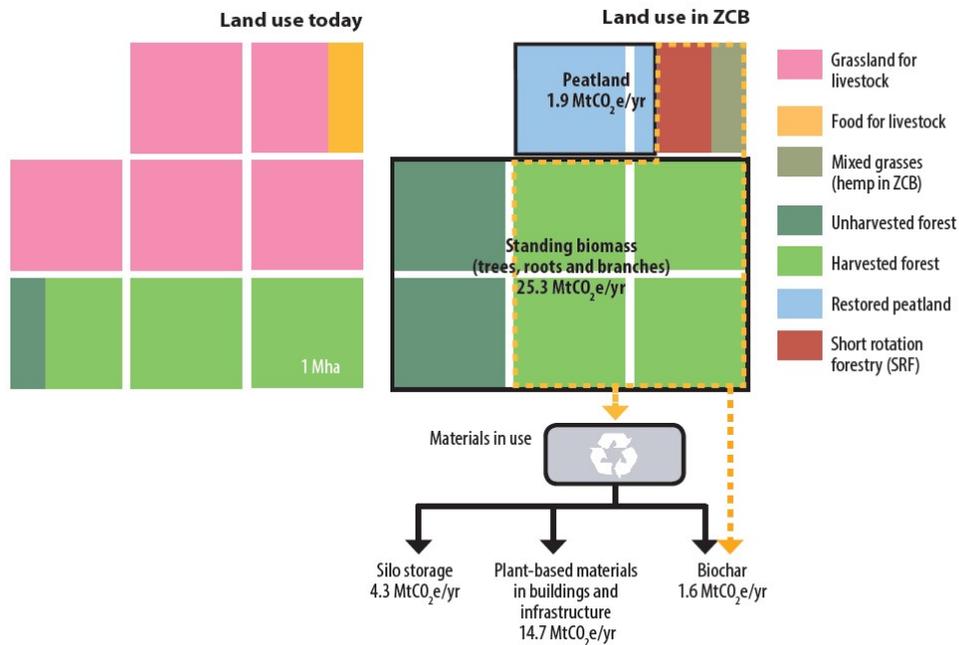


Figure 1. Area of land used for capturing carbon in the ZCD scenario.



Figure 2. Approximate land use in the ZCB scenario.

Using this scenario we can start to map the required outcomes of changes in land use across the county. However, changing land use, as with many other areas in this report, requires the appropriate legislative framework to encourage the correct approaches and will need to take account of the unique and beautiful landscape, where

⁴ <https://dorsetlnp.org.uk/wp-content/uploads/2019/06/TPAL-Dorset-Natural-Capital-Trends-Report-2019.pdf>

⁵ <https://www.dorsetcouncil.gov.uk/emergencies-severe-weather/climate-and-ecological-emergency>

⁶ <https://dorsetlnp.org.uk/wp-content/uploads/2019/06/TPAL-Dorset-Natural-Capital-Trends-Report-2019.pdf> p9

over half of the county is designated as Areas of Outstanding Natural Beauty (AONB). Dorset AONB is home to well over 80% of the UK's bird, butterfly and mammal species as well as all 6 of the native British reptile species⁷. It also requires landowners, particularly the ten who own one sixth of Dorset, to adopt such practices⁸. The **National Farmers Union's** (NFU) commitment to Net Zero⁹ is welcome both in recognising the problem and the role farming has to play in the solution. The farming community will need to be both continually engaged and compensated appropriately, nevertheless issues of land ownership may also need to be addressed (something we consider in the *Justice* chapter). Where possible the wider adoption of regenerative farming practices will be needed. This will include making changes to Dorset Council's own county farm estate¹⁰, which comprises 46 farms spread over 2,600 hectares. Yet, despite these factors we can make significant changes and, in many places, already have. With land owned by local authorities, supportive organisations (e.g. the National Trust) and by forward thinking individuals (see *Case Studies*) we can take significant steps in the right direction.

One exciting local step forward was the creation of a 'super' National Nature Reserve in the Purbecks¹¹, bringing together seven landowners and covering 3,331 hectares (8,231 acres). The **Purbeck Heaths National Nature Reserve** (NNR) is the largest area of lowland heath managed as a single nature reserve in England and is "*a product of collaboration and determination to make a real difference to nature recovery*". With the Amphibian and Reptile Conservation Trust, Dorset Wildlife Trust, Forestry England, National Trust, Natural England, Rempstone Estate and the RSPB working together they "*aim to restore natural processes across the whole NNR, making it more resilient to climate change and other pressures (while creating) a better experience for people enjoying the heathland, whilst protecting sensitive areas*".

As well as restoring natural processes, there is a growing call for the issues of climate change and environmental breakdown to be addressed using **nature-based solutions**¹². The **International Union for Conservation of Nature** describe these as the "*actions to protect, sustainably manage, and restore natural and modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits*", suggesting that 37% of all the actions required to achieve the Paris Climate Agreement could be achieved by implementing nature-based solutions. In 2021, led by Prof. Rick Stafford of Bournemouth University, the **British Ecological Society** published Nature-based solutions a landmark report¹³ on nature-based solutions for climate change in the UK.

Closely linked to this is the issue of **soil health**. The UN¹⁴ notes that "*although soils are essential for human well-being and the sustainability of life on the planet, they are threatened on all continents by natural erosion*". The way we farm and manage our land is key to addressing this.

⁷ <https://www.visit-dorset.com/explore/areas-of-outstanding-natural-beauty-aonb>

⁸ <https://whoownsengland.org/2020/01/04/the-ten-landowners-who-own-one-sixth-of-dorset/>.

⁹ <https://www.nfuonline.com/archive?treeid=137544>

¹⁰ <https://www.dorsetcouncil.gov.uk/emergencies-severe-weather/climate-emergency/climate-ecological-emergency-strategy/climate-ecological-emergency-strategy-food-and-drink>

¹¹ <https://www.dorsetaonb.org.uk/purbeck-heaths-national-nature-reserve/>

¹² <https://www.iucn.org/theme/nature-based-solutions>

¹³ <https://www.britishecologicalsociety.org/policy/nature-based-solutions>

¹⁴ <https://news.un.org/en/story/2019/12/1052831>

Across Dorset we will need to dramatically **increase tree cover** as part of national¹⁵ and global¹⁶ actions on reforestation. As at March 2021, just 12% of Dorset, and 13% of the UK overall, is woodland¹⁷. This needs to be part of the wider plan for land, with the type and siting of any trees planted carefully considered, as too limited a range can present other environmental issues. Nevertheless, the planting of trees and expansion of woodland at pace and scale is one of the key ways to help reduce the level of carbon in the atmosphere and properly selected and planted, especially in urban areas, they can add to the visual attractiveness of an area, provide natural cooling, offer protection against flooding¹⁸ and improve wellbeing.

Urgent action is needed to improve the quality of Dorset's rivers which are in a really parlous state, with very few achieving "good" ecological status¹⁹. The main problems are run-off of agricultural pollution, especially fertilisers, and the release of untreated sewage²⁰.

The **Environment Bill**²¹ (Environment Act 2021) which gained Royal Assent as this chapter was being finalised contains some encouraging elements that may assist some of the ideas raised here. Media coverage of the limitations of other aspects (in particular the discharge of sewage into rivers) also demonstrates that there are areas of weakness. We will more closely examine the full implications in future reports.

As noted in the introduction, the role of the sea is included in this chapter because the health of our oceans is critical to both addressing climate change and sustaining life in general. Our coastal areas need to be restored and protected and can provide both carbon sequestration and agricultural services. In fact seagrass absorbs and stores carbon 35 times more effectively than rain forests²². Opportunities are already being explored to develop areas of seagrass meadow in Dorset, the wider benefits of which are set out within the Further Information section. Alongside this the extension of protected marine zones is a crucial element in protecting our coastal habitats.

As an example, although just 4sq km in area, the Poole Rocks Marine Conservation Zone (MCZ)²³ provides an indication of just how rich and diverse our coastal areas could be if more were provided with MCZ status. Poole Harbour suffers from several environmental challenges, particularly nitrogen run-off. The reduction in beef and dairy farming, as well as changes to the way we grow crops, and the adoption of organic and regenerative farming



¹⁵ <https://www.reforestation.org.uk/>

¹⁶ <https://www.un.org/en/development/desa/news/forest/reforestation-the-easiest.html>

¹⁷

<https://www.ons.gov.uk/economy/environmentalaccounts/articles/carbon dioxide emissions and woodland coverage where you live/2021-10-21>

¹⁸ <https://www.reforestation.org.uk/>

¹⁹ <https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3030>

²⁰ <https://www.theriverstrust.org/key-issues/sewage-in-rivers>).

²¹ <https://bills.parliament.uk/bills/2593>

²² Project Seagrass <https://www.projectseagrass.org/why-seagrass/climate-dev/>

²³ <http://poolerocksmcz.uk/>

practices will contribute significantly to addressing this (as will continued investment by Wessex Water in the sewerage infrastructure).

Current assessment

Having considered the current assessment documented above the report contributors have assessed the county's current category as:

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It is encouraging that, with respect to land use, more initiatives have been discovered and more potential case studies identified than in any of the previous chapters. Work being undertaken by the National Trust, those responsible for specific areas of heaths and forests, Dorset Wildlife Trust, the RSPB and many community initiatives paints a positive picture of what can be achieved. However, a comprehensive vision matching the scale of changes required, backed by specific plans to achieve this, remains lacking.

2022 Objectives

Where indicated, these repeat objectives already set out in the Valuing Nature Research Project (VNRP).

1. Develop a detailed 2030 Vision map of where land could be used to replicate the ZCB model across the county, including large-scale habitat creation and restoration, as recommended in the VNRP report. This needs to involve all key stakeholders and could be led by the Local Nature Partnership, the University or a voluntary body such as Dorset CAN.
2. Implement land use approaches that improve the conditions and extent of semi-natural habitats to strengthen the provision of ecosystem services, including wildlife friendly farming approaches, organic and regenerative approaches to pest control and soil improvement, ecological restoration, habitat enhancement schemes and maintenance of habitat diversity (VNRP).
3. Lobby for adequate funding to support policies that provide incentives for farmers to produce environmental goods and services (VNRP). Dorset Council to implement progressive and innovative land use management at their farms to act as beacons for change.
4. Align farming practices with the Code of Good Agricultural Practice for Reducing Ammonia Emissions to reduce nitrogen deposition (VNRP).
5. Both councils should facilitate, with landowners and local community involvement, the identification of land areas (particularly in urban locations) that could be repurposed as nature-positive spaces, for example, natural wild spaces, nature corridors, hedgerows, community and market gardens.
6. Councils, landowners, community groups and conservation bodies should continue work together to protect and enhance habitats across the county, including coordinating and securing support to double tree cover across the county.
7. Implement nature-based solutions across the county to enhance biodiversity, sequester carbon, reduce flood risk, improve water quality, help adapt to climate change, and provide physical and mental wellbeing services.

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8. Promote the opportunities for people to engage with their environment to help with their physical and mental wellbeing and develop a greater understanding of where their food comes from.
 9. Lobby for funding to support the extension of Marine Conservation Zones and plant sea grass meadows to enhance biodiversity and reduce coastal erosion and flood risk.
 10. The Environment Agency must continue to work in partnership with water companies and landowners to dramatically reduce pollution of Dorset rivers.

Case Studies

Across the county individuals and organisations are already taking the action that will propel us towards the vision outlined above. By sharing some of these here the aim is to encourage their sustainability, replication, and escalation.

Purbeck Heaths

As noted in the Current Assessment above Purbeck Heaths National Nature Reserve (NNR) is the largest area of lowland heath managed as a single nature reserve in England. In addition to the details covered above, the AONB's website²⁴ explains how the *“project will create a “mini New Forest” in the area between Stoborough, Corfe Castle and Arne near Wareham, with cattle, ponies and pigs roaming across an area of 1370 ha at the heart of the reserve. Wilder grazing by free ranging cattle, ponies and pigs will more naturalistically drive dynamic changes to the heathland/woodland environment, enhancing the micro-habitats within this habitat mosaic, on which many rare and threatened species depend. These include species such as Purbeck Mason Wasp, Heath Bee-fly and Woodlark.*

By March 2022 the new grazing system will be created by the removal of existing internal fences, the installation of an external fence-line, several new cattle grids and improved roadside parking.”

Dorset Climate Action Network Land Use Team

Dorset CAN have established a Land Use team that meets regularly to identify opportunities, share ideas, and develop specific action plans to address the issues discussed in this chapter. Through their early work they have identified a map of related areas to be focused on over the coming months (Figure 3).

²⁴ <https://www.dorsetaonb.org.uk/project/purbeck-heaths-grazing-unit/>

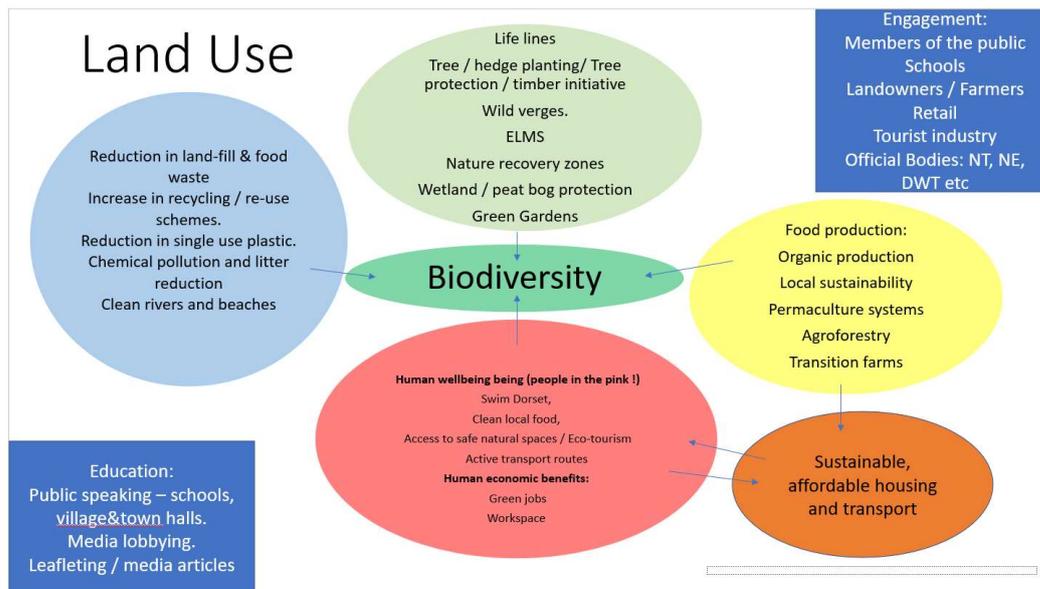


Figure 3. Dorset CAN Land Use team action areas

The group is currently focused on:

- Tree and hedgerow planting projects - grants to apply for and how to set up tree / hedgerow projects.
- Tree protection - understanding the regulations and how to defend our trees
- Life lines projects- encouraging community interaction, investigating the use of herbicides / pesticides and alternative practices
- Wildlife restoration networks / corridors
- Food production - sustainable local production methods.

A key project is the **Girt Big Darzet Hedge Campaign** to plant, extend and join up hedgerows across Dorset to create a regenerative wildlife corridor for the many species. The Dorset CAN Land Use team can be contacted via their webpage²⁵.

Rewilding

Following a major fundraising appeal for England's first large-scale community rewilding project **Dorset Wildlife Trust** have purchased 170 hectares of land near Bere Regis through the **Wilder Dorset**²⁶ initiative. The exciting vision for the project (called **Wild Woodbury**) includes the creation of 11 hectares of new community woodland and 30 hectares of new wetland, alongside a new community orchard, space to grow food sustainably, plus room for visitors and locals to explore the wild and forge a deep connection with nature.

The acquisition was made possible with help from **We have the POWER** founder Julia Davies, who led on the purchase giving Dorset Wildlife Trust time to secure funds from several legacies left by dedicated Dorset Wildlife Trust members and supporters, as well as significant investments from **BCP Council** and **Dorset Council**. The councils' contributions came from the Community Infrastructure Levy, to mitigate the effect of additional nitrates entering Poole Harbour as a result of new housing and tourism developments.

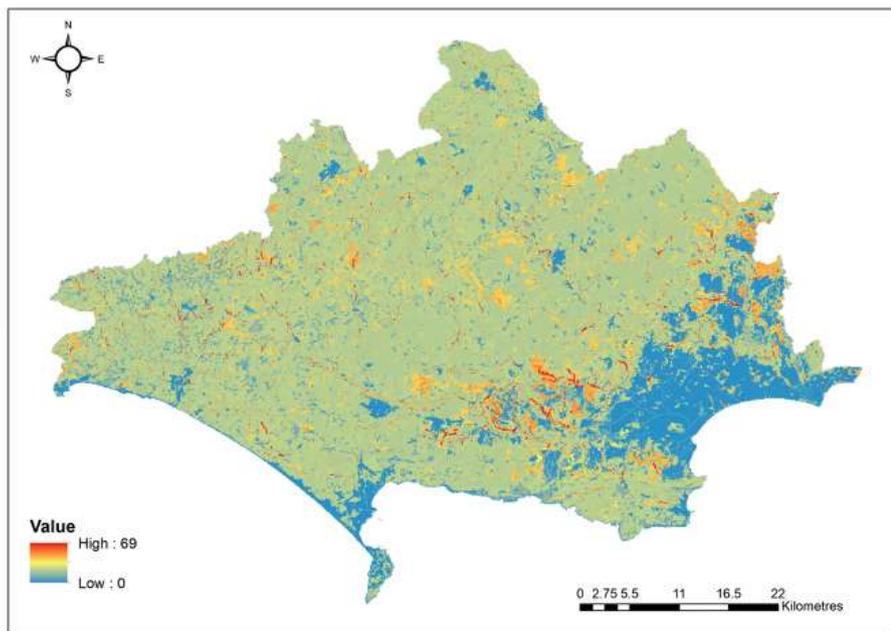
²⁵ <https://www.dorsetcan.org/contact.html>

²⁶ <https://www.dorsetwildlifetrust.org.uk/wilder-dorset>

Further plans for transforming the landscape from being intensively managed to letting nature take the lead will be developed in conjunction with the surrounding community, giving local people more opportunities to connect with nature while also benefitting local wildlife. This will include meeting directly with the community in Bere Regis, connecting with existing local groups and creating new local volunteer groups. This flagship project aims to provide inspiration and guidance for further rewilding projects around the country, so data gathered in these early stages is crucial to inform and support similar projects, opening up new space for wildlife throughout Britain and beyond.

Julia Davies from **We Have the POWER** (Protect Our World, Educate, Restore)²⁷, who are also supporting a range of other nature-based solutions across the country²⁸, stresses that *“Whilst restoring nature is a key aim we are equally focused on working out how to produce food locally in a manner consistent with the Climate and Ecological Emergency and support farmers to find new business models that work in the context of changing subsidies and the challenges posed by new trade deals. Our plans for the Bere Regis site will include food production and seek to provide employment and job opportunities for the local community.”*

The **VNRP** report has also identified numerous locations across the county that are suitable for rewilding. This is shown below.



Loth, A.F. and Newton, A.C. (2018) Rewilding as a restoration strategy for lowland agricultural landscapes: stakeholder-assisted multi-criteria analysis in Dorset, UK. *Journal for Nature Conservation* 46, 110-120.

Figure 4. Dorset areas suitable for rewilding

²⁷ <https://wehavethepower.org/rewilding-and-restoring-dorset-nature/>

²⁸ <https://wehavethepower.org/nature-based-solutions-in-dorset/>

Community Farms

Situated on the edge of Poundbury, Dorchester, the **Community Farm** was the first project set up by **Transition Town Dorchester**²⁹. With support from the Duchy of Cornwall and lots of hard work from their members the farm now has an *“enormous polytunnel and outside raised beds, a few fruit trees and a pond, an orchard with apple and pear trees, several colonies of bees, a wildlife pond and some geese and hens, and a forest garden.”* The Community Farm is open to anyone who is interested and has the aim of getting people together to *“explore ways of living more sustainably and building a community, through sharing growing space, tools, knowledge, ideas and work, and harvesting produce together.”*

Transition Dorchester also created the **Railway Community Orchard** on what was an area of overgrown land which was cleared of brambles and sycamores, and then planted with apple trees and fruit bushes. A small pond was dug and a place for picnics created next to it. The team have held apple days with apple juice produced on site for people to share. Railway Orchard is open to anyone and further details can be found on the Transition Town Dorchester website.

Hilfield Friary

Hilfield Friary³⁰ is an intentional community of brothers of the First Order of the Society of St Francis together with men and women and two children, who are committing themselves to share in the Franciscan life and work of the Friary. Set on the edge of the Dorset Downs with views across the Blackmore Vale, there have been Franciscan brothers living here in a collection of what were once farm buildings since 1921, providing refuge for the homeless, the experience of community, and a place for prayer, reflection and renewal. Today at Hilfield there is a particular emphasis on living and promoting the Franciscan values of care for creation, working for peace and justice, and seeking respectful dialogue with people of other faiths. As part of this they are actively addressing the issues of climate change both through participation in events such as the COP26³¹ conference in Glasgow and a focus on conservation and sustainability at their site.

The Friary was the first community in the UK to be given an Eco Church Gold Award in recognition of the integrated ecology they are seeking to put into practice at Hilfield, where they occupy 50 acres of Dorset countryside and where a *“variety of underlying geology gives rise to range of precious habitats providing home for a wide diversity of species (which is) actively managed to be as welcoming to all these brothers and sisters as possible, with the main focus on conservation and biodiversity.”*

Permaculture Sites

Ourganics Evolving Systems³² constitutes five acres of water meadow close to the coast in rural West Dorset. It is working permaculture project set up by Pat Bowcock in 1999 with its own detailed design that course participants have the opportunity to interact with. The venue has already been used for apprentice design work and Pat also regularly hosts tours by local schools and groups.

Pat started Ourganics because she wanted to run a business that was sustainable and debt-free. She wanted to show that permaculture principles could go hand in hand with being Soil Association-registered, to create a land-based, self-financing and viable business which would provide affordable organic vegetables, herbs, salads, fruit and flowers for the local community. The produce goes out direct from the field as well as via farmers' markets, box schemes, farm shops etc.

Ourganics has the extra label "evolving systems" because like anything organic, the project is continually evolving, responding and changing.

Oak Tree Farm³³ is a permaculture small holding of 15 acres at Highwood East Stoke near Wareham. It is a livestock system based around chickens and goats. The aim is to provide year-round food for the family with a sustainable future. The farm has its own spring-fed water supply, compost toilet, polytunnel, raised bed veg garden, forest garden and agroforestry area.

Organic and regenerative farming

Regenerative farming combines **permaculture**³⁴, **agroecology**³⁵, **agroforestry**³⁶, **restoration ecology**³⁷ and **holistic management**³⁸ to support a wide variety of natural flowers and fauna as part of a natural ecology. Large farms often use no till or reduced till practices.

Andrew and Sara Cross have managed the **Gold Hill Organic Farm**³⁹, both sales and growing, since 1987. They have been organic from the start and Gold Hill was one of the first farms in the south west to gain organic status from the Soil Association. The vegetable growing area covers about eight acres, made up of an acre of 'minimum tillage' raised beds for early and late season crops; eight polytunnels for sun-loving plants and winter salads; and six acres of 'field scale' vegetables where they grow crops like sweetcorn, summer lettuces and leeks. Over 80 different varieties of vegetables and fruit are grown at Gold Hill Organic Farm, in fields, raised beds, and polytunnels.

While we recognise many environmental campaigners advocate a fully plant-based diet and many question the ethics of eating animals, we acknowledge that meat production will continue for some time. As such it is encouraging to note organisations such as **Dorset Meat Company**⁴⁰, who work with 20 small, family-run farms in Dorset and Wiltshire that all produce ethically reared meat, in a natural growing environment, in harmony with nature. Animals that have been allowed to grow at a natural pace and have not been rushed.

This is undertaken using regenerative farming, not industrialised meat production. Regenerative farming rejects pesticides and chemical fertilizers, instead strengthening the health and vitality of farm soil, increasing biodiversity, improving the water cycle, and increasing resilience to climate change. Dorset Meat Company know their farmers well and share their ethics and their values: respect for their livestock and for nature, and a total commitment to the highest standards of animal welfare. They believe passionately that small-scale, sustainable farming is better for the animal, the local ecology, the farmer and for consumers, by producing local ethically reared meat.

²⁹ <http://transitiontowndorchester.org/>

³⁰ <https://www.hilfieldfriary.org.uk/conservatio-n/>

³¹ <https://www.hilfieldfriary.org.uk/newsandevents/>

³² <http://www.learnpermaculture.com/ourganics-evolving-systems>

³³ <https://www.permaculture.org.uk/people-projects-places/project/oak-tree-farm>

³⁴ <https://www.permaculture.org.uk/knowledge-base/basics>

³⁵ <https://www.agroecologyfund.org/what-is-agroecology>

³⁶ <https://www.agroforestry.co.uk/about-agroforestry/>

³⁷ <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/ecological-restoration>

³⁸ <https://savory.global/holistic-management/>

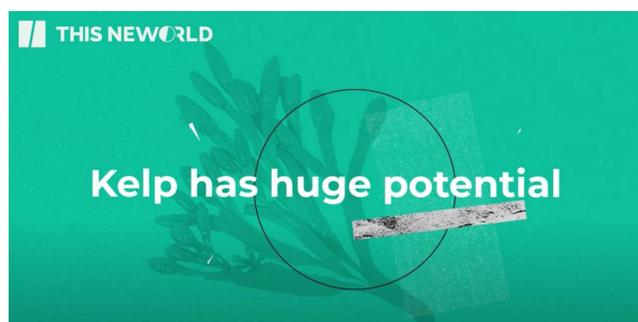
³⁹ <https://www.goldhillorganicfarm.com/>

⁴⁰ <https://www.thedorsetmeatcompany.co.uk/about/our-local-farms>

Philip Colfox, owner of **Symondsburry Estate** in West Dorset, one of the locations featured in **This Good Earth** (see *Further Information*), believes we need to manage nature in the fields where our food is grown “*very intelligently and sympathetically*”. Unconvinced that purely manual low-impact farming methods are feasible, he sets out what he sees as managing land using more intelligent mechanization. One example is to use “*intelligent and lightweight machines instead of very heavy and damaging tractors*”. These machines can spot and 'zap' weeds and diseases in growing plants over a large area and will “*reduce the chemical load from sprays and fertilisers down to almost zero and reduce the damage to soil done ... by an order of magnitude and perhaps to almost zero*”. Alongside this Philip believes interaction by visitors with nature will increase massively and it will be possible to manage crops intelligently in a way that “*natural flowers, insects and habitats are maximised at the same time as the crop yield*”. This could provide a source of income for farmers where visitors, using on-site features such as tea shops etc., could potentially provide more revenue than that achieved through farming alone.

Portland Seaweed Farm

Plans have been submitted by Green Ocean Farming⁴¹ to develop a kelp seaweed farm just off one of the harbour walls at Portland⁴². The Devon-based company has a vision to help establish seaweed farms throughout the UK and internationally, and is enthusiastic about the role kelp can play, not just in carbon sequestration, but also in providing a nutritious food source that can be grown in a much more environmentally friendly manner than many land crops. Further information can be found on their site or via the YouTube video⁴³.



The company says that Natural England have viewed the proposals and given their recommendations for the Portland project and, if the remaining permissions are granted, work could start by the end of 2021. The report notes that “*It will not involve any permanent structures with the farm limited to weights, ropes, and buoys*” and “*the farm aligns with the Dorset Marine Aquaculture Strategy, the South Marine Policy Statement, the national Marine Policy Plan, and the*

United Nations Sustainable Development Goals. It says seaweed production is the fastest growing form of food production in the world with uses in biofuel, cosmetics, pharmaceuticals, agriculture, and for human consumption.”

Although limited to specific sea bed requirements, the Dorset coast offers several options of where other farms could be considered.

⁴¹ <https://www.greenoceanfarming.co.uk/>

⁴² <https://www.dorsetecho.co.uk/news/19083947.portland-seaweed-farm-proposed/>

⁴³ <https://www.youtube.com/watch?v=F5KL4TdMcFk&t=23s>

Grounded Community

One example of how community action can really make the most of available land and provide an inspiring example to others is **Grounded Community**⁴⁴ in Boscombe, Bournemouth. The land was unused and unwanted so a local community group decided to rework the land and “*make it open and clear once more. A Secret Garden was planted. People were inspired to see how much could grow in such a small space. A vision of health and vibrancy for the community was born.*” This **Secret Garden** is now used as an educational and demonstration area, used as a space for school lessons, after-school gardening club and weekend workshops.

This vision has subsequently expanded to include **Grounded Growers**⁴⁵, a network of people growing in “gardens, on their balconies, in allotments, on window sills” and even in care homes and hotel gardens and a pilot space on a disused car park roof. This approach aligns well with ideas



explored in many sustainable city models and ensures that we are making the most of every opportunity to green our neighbourhoods and help people eat well. For Grounded Community these are exemplified through their **Grounded Bee’z, Grounded Gatherers, Community Composite** and **Feed Our Community**. Find out how you can get involved with this local charitable organisation at <https://groundedcommunity.co.uk/get-involved/>.

Lush Cosmetics

Regenerative agriculture

Lush have recognised that one of the biggest contributions they can make in their supply chain is to ensure that more and more land is managed regeneratively. Not only can this support the restoration of degraded land by improving soil health and biodiversity. It can also strengthen the many benefits that these ecosystems provide, including land productivity, carbon sequestration and water security. These benefits help to mitigate the worst impacts of climate change, allowing those who are the most vulnerable to adapt and become more resilient to those impacts long term.

This adaptation has compounding impacts by reducing their financial risk. By improving the health of the ecosystems and communities they interact with across our whole value chain and also improve the health of the business.

This year Lush started purchasing organic and Fairtrade ethanol from a new source in Brazil. The ethanol is produced from sugar cane, grown with strict stewardship of the soil. Biodiversity islands are incorporated on the site, which has increased the water flow of the surrounding streams and rivers and provided valuable habitat and food for over 300 species. Residues from the production process are also used to produce energy for over 500,000 people, lowering the carbon footprint of the ethanol by 44% compared to their previous source.

Forestry Protection

⁴⁴ <https://groundedcommunity.co.uk/>

⁴⁵ <https://groundedcommunity.co.uk/groundedgrowers/>

Since 2006, Lush has constantly worked to remove palm oil and palm kernel oil from their supply chain in order to reduce the risk of deforestation. They've made steady progress towards this goal and now source vegetable oil derived ingredients from a much larger diversity of feedstocks. Their palm free soap base has also enabled them to avoid the use of over 3,000 tonnes of palm oil to date, by replacing the palm ingredients with a mixture of rapeseed and coconut oil.

Through their purchasing of coconut oil, they have supported over 500 farmers on the island of Simeulue, Indonesia. This year a replanting project of 6,500 coconut seedlings began to secure future income as the old trees approach the end of their economic lifecycle. The project not only protects the livelihoods of the farmers, it is also part of Lush suppliers wider strategy to prevent the cultivation of palm plantations on the island.

By using a variety of wildy harvested materials, Lush are also able to provide alternative livelihoods in areas where deforestation and other forms of land degradation are a high risk. Some of these materials help to protect primary, old growth forests, including illipe from Borneo, cupuacu, murumuru and tonka from Brazil, and their Brazil nut oil from Peru.

Although Lush have made significant strides in tackling deforestation within their supply chain, they recognise there is still more they can do, leading them to conduct a full risk assessment of their supply chain. This led to an audit through their supplier engagement platform for all high-risk materials including both soy and remaining palm derivatives. Lush have committed to provide updates on the progress of this audit within their future reports⁴⁶.

Water Quality

Many of the problems we are creating with the way we use our land also creates issues for our water quality as well, in particular from pasture land and the excessive use of fertiliser. A number of catchment management programmes are in place, particularly around Poole Harbour.

Poole Harbour catchment initiative (PHCI) agricultural and land management group⁴⁷ is a farmer-led group consists of 16 local farmers and land owners, including members from the Watercress Growers Association, local agronomists and land agents. The group aims to find solutions to the many agricultural related challenges facing the catchment, in particular, working to find sustainable answers to the problems related to diffuse leaching of nutrients into streams, rivers and groundwaters.

The PHCI aims to achieve:

- sustainable farming, development, water use and sewage treatment that supports healthy rivers and groundwater in the Poole Harbour catchment
- recognition of the ecosystem services that the catchment can provide and an adequate payment to those that manage the land to provide these services
- improvement to biodiversity habitats both in the form of naturally functioning rivers, floodplains and wetlands and appropriately located woodland and low-input grassland
- national environmental standards for the benefit of wildlife, users of these waters, and Poole Harbour.

⁴⁶ <https://weare.lush.com/lush-life/our-impact-reports/carbon-impact/>

⁴⁷ <https://www.wessexwater.co.uk/environment/catchment-partnerships/poole-harbour-catchment-partnership>

Dorset Catchment Partnerships⁴⁸ brings together stakeholders with a range of views to discuss issues, share data and evidence, and collaborate to acquire funding and deliver work to make our rivers healthier, safer and more resilient. Partners include local and national environmental charities, water companies, representatives from the agriculture sector, regulators and local authorities, landowners and community groups. The aim is for Dorset's river catchments to be sustainably healthy, resilient and safe for people and wildlife.

The partnership prioritises projects across seven themes, including nutrients, habitats & biodiversity, to achieve good value for the catchment, funders and deliverers. Multiple benefit projects are key to this, as is targeting work areas; generally this means prioritising work in headwaters and the upper catchments, as this also improves water quality in lower catchment waterbodies. The partnership also prioritises projects which support and restore natural processes, as these are often more cost effective, sustainable and have more multiple benefits than hard engineered solutions.

Projects are funded through a range of sources including the EA's Water Environment Improvement Fund (WEIF) WEIF, other Defra funds or Government grants, Wessex Water in-kind contribution, charitable fundraising by our partners, the National Lottery, philanthropy and private industry funding.

Stour Valley Park

The **Stour Valley Park Partnership**⁴⁹ is represented by a range of local and national partner organisations. The partnership group first met in 2017 and have been working ever since to bring together their values and create a shared vision focused around restoring the health of the river, regenerating wildlife networks, understanding and celebrating our heritage, stimulating the local economy, creating opportunities to get out and enjoying a beautiful landscape full of great places to go and great things to do.

The Stour Valley's location, along the edge of the conurbation, means that the valley has great potential as a multifunctional landscape that can improve opportunities for recreation, health and well-being, as well as providing a multitude of benefits for wildlife and biodiversity.

The current aims of the park are to:

- Create an accessible landscape which will regenerate the river, improve water quality, and enhance biodiversity;
- Support the adoption of long-term sustainable land management;
- Open up parts of the river for public access, and in doing so improve the health and wellbeing of the locality;
- Boost the local economy through new business opportunities and jobs which will help provide the resources for ongoing management of greenspace;
- Enhance and uncover the landscape's unique heritage and history;
- Work with housing and transport departments to ensure an integrated approach to future growth.

⁴⁸ <https://www.wessexwater.co.uk/environment/catchment-partnerships>

⁴⁹ <https://www.stourvalleypark.uk/about-us>

Reintroduction of Beavers

Dorset Wildlife Trust⁵⁰ have spent years preparing for the reintroduction of Beavers to the county. Pointing out that they are often referred to as 'ecosystem engineers', making changes to their habitats, such as digging canal systems, damming water courses, and coppicing tree and shrub species, which create diverse wetlands that benefit both people and wildlife.

DWT also point out how;

- they help to reduce downstream flooding - the channels, dams and wetland habitats that beavers create hold back water and release it more slowly after heavy rain;
- they benefit other species, such as otters, water shrews, water voles, birds, invertebrates (especially dragonflies) and breeding fish;
- they increase water retention and clean water, and
- they reduce siltation, which pollutes water.

On the 8 February 2021 they released a pair into a suitable enclosed site in west Dorset in what is hoped by many to be the first of many similar projects across Dorset.

The **Purbeck Beaver Project**⁵¹ is currently working with stakeholders to draw up plans for a phased reintroduction of beavers to Purbeck.

Dorset National Park

Hopes of creating a **National Park** in Dorset were put on hold during the summer of 2021, having been left out of recent Government announcements⁵². The **Dorset National Park**⁵³ team and **Dorset CPRE** had proposed creating a National Park in the county to include as much as possible of the Dorset Council area (Figure 5), citing independent studies which suggest a National Park could provide important economic opportunities and benefits for rural Dorset.

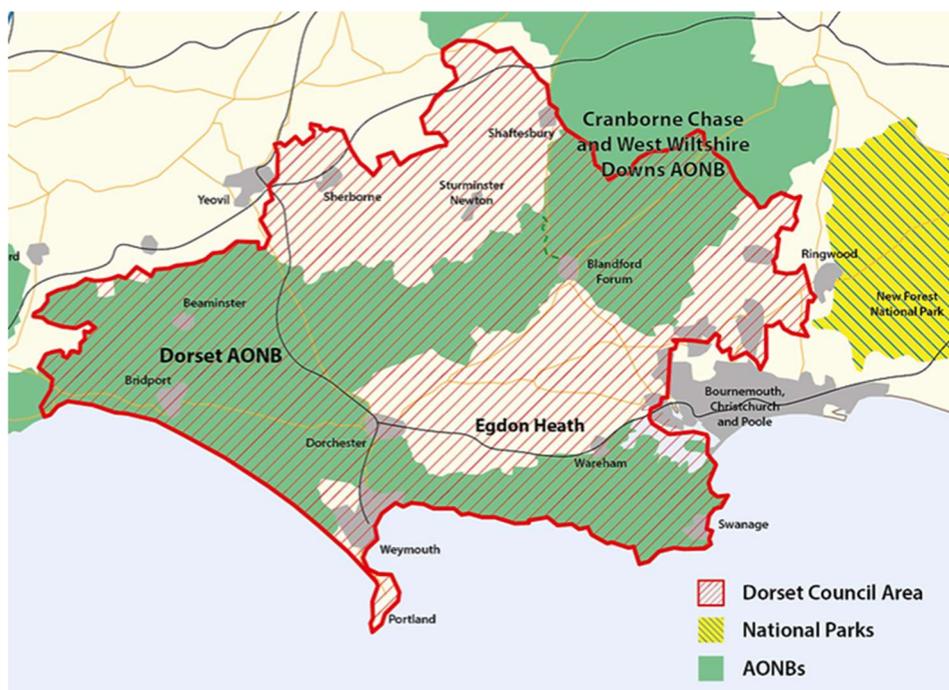


Figure 5. Potential areas for Dorset National Park

According to its supporters Dorset National Park could help Dorset:

-
- Address the challenges of climate, nature and health.
 - Deliver a successful, greener future for our communities and economy.
 - Increase local community involvement and democratic accountability.
 - Attract additional resources, investment and jobs.
 - Build the homes local communities need and can afford.
 - Support farmers to secure new farm funding and diversify their income.
 - Support the health and well-being of all who live and work in this very special part of England.

Supporters believe a National Park offers a unique opportunity to help reverse the decline in the environment, make this the home for ambitious and innovative businesses and help farmers and land managers to diversify and thrive, claiming the NP would work in partnership with other local authorities such as the Dorset Council, with the Local Enterprise Partnership (LEP), the Local Nature Partnership (LNP), the Jurassic Coast Trust and other key stakeholders to invest in natural capital, environment, heritage and communities.

Opponents were concerned about how the rules of National Parks may override those of the elected councils and may force housing development into those areas not offered National Park status. Despite the Government's decision supporters continue to pursue the idea.

Studland Bay 'eco-moorings' set up to protect seahorses

"Eco-moorings" are being installed at a Dorset beauty spot⁵⁴ to provide an alternative to anchors, which can damage seahorse habitats on the seabed. **The Seahorse Trust**⁵⁵ charity and national marina group **boatfolk** have put the 10 new moorings into Studland Bay. Neil Garrick-Maidment, from the trust, said it was "vital" the area was "effectively protected" and used "responsibly and sustainably". The site was made a Marine Conservation Zone (MCZ) in 2019. The dropping of anchors can damage the seagrass meadows, an essential breeding ground for the Spiny Seahorse. Eco-moorings instead use a helical screw anchor which is driven into the seabed and attached to the mooring buoy via an elastic band. Its flexibility means it does not scour the seagrass like an anchor does. Michael Prideaux, managing director of boatfolk, said: "*Providing an alternative option at Studland that protects this incredible marine environment is about doing the right thing for boaters and for our planet.*"

Coppiced Hedging

Ross Dickinson of Racedown Farm in Dorset, working with the Devon Hedge Group, has undertaken analysis to show that it is economically viable to move a hedge from annual flailing to a fifteen-year coppicing rotation. Ross explains that it has been shown that "*the most efficient method is complete chipping of all material and the subsequent use of this material in biomass burners, both in terms of profitability and energy output.*" Although currently there is not currently enough demand for this type of material, there are opportunities to "*achieve a complete supply and demand cycle as in certain areas of the continent (and) if this was achieved on a scale that could absorb all the material from hedges then it is likely that this process will be widely adopted*". While crop

⁵⁰ <https://www.dorsetwildlifetrust.org.uk/BeaverProject>

⁵¹ <https://www.nationaltrust.org.uk/studland-bay/features/re-introduction-of-beavers-to-purbeck>

⁵² <https://www.dorsetecho.co.uk/news/19394511.dorset-will-not-become-national-park-government-rejects-proposal/>

⁵³ <https://www.dorsetnationalpark.com>

⁵⁴ <https://www.bbc.co.uk/news/uk-england-dorset-57999730>

⁵⁵ <https://www.theseahorsetrust.org/>

burning for energy is generally discouraged (it uses land that should be used for food or carbon sequestration⁵⁶ and diverts attention from core renewable technologies), there is a requirement in the ZCD model for some biofuels to balance supply and demand. This could be a great contributor to that.

Further Information

Key Sources

Most of the technical information and data in this chapter has been taken from the **Trends in Natural Capital, Ecosystem Services and Economic Development in Dorset** report and **Zero Carbon Britain: Rising to the Climate Emergency**. Both are recommended reading for anyone who would like to understand the full background to this issue at a global, national and local scale.



Bridport-based Director, Robert Golden, released the powerful and thought-provoking documentary **This Good Earth**⁵⁷ in January 2021. The film not only lays bare many of the land use issues we have discussed above, but also examines the global consequences of our food chain.

There can be few better introductions to both this chapter (and *Eat Well*) than this film, not least as it brings to life these issues, and some of the potential solutions, right here in Dorset.

Cairngorm Crofters: Regenerative Farming

This is an inspiring example of where a new to farming couple have set up a croft in North East Scotland⁵⁸ run on regenerative principles and are already seeing the benefits, not just for nature (they have planted 17,500 native trees and set aside nine hectares for natural regeneration) but also from a lifestyle point of view. They are to be credited for their commitment to the project recognising that although *“We could opt to do more to earn more, but then you blur that line between the wealth in your bank account and the wealth in your life, and we’ve always gone for the wealth in your life. It’s not about following a capitalist model of grow, grow, grow. It’s regenerative and ‘work within your means’.”*

⁵⁶ <https://www.bbc.co.uk/news/59387191>

⁵⁷ <https://this-good-earth.com/>

⁵⁸ <https://www.theguardian.com/environment/2021/aug/12/nature-is-interconnected-and-collaborative-and-our-business-is-too?>

Project Seagrass

As indicated in the 2021 Assessment above, seagrass can absorb and store carbon 35 times more effectively than rain forests yet we have already lost more than 90% of our seagrass meadows⁵⁹. **Project Seagrass**⁶⁰ is committed to saving those that remain.

At Dale in Pembrokeshire, Sky Ocean Rescue, Pembrokeshire Coastal Forum, Pembrokeshire Marine Special Area of Conservation, WWF and Swansea

University are working to restore seagrass meadows. In 2020, Sky Ocean Rescue, WWF and Swansea University marked the major milestone in the biggest seagrass restoration project ever undertaken in the UK by planting around 1 million seagrass seeds in Dale Bay. The project⁶¹ plans to restore seagrass in a two-hectare area (approximately two rugby pitches) in collaboration with local people in Dale.



Restoring seagrass is vital for ocean health and has huge benefits. It can protect coasts, improve water filtration and plays other important roles including:

- Fisheries Support – 20% of the world’s biggest fisheries are supported by seagrass meadows as fish nurseries.
- Biodiversity Support – 50 species of fish live in or visit UK seagrass, supporting 30 times more animals than nearby habitat.
- Fighting Climate Change – Seagrasses store carbon 30 times faster than forests. Restoring them traps carbon dioxide.

Knepp Estate - Rewilding and Regenerative Agriculture

Knepp Estate⁶², just south of Horsham, has been owned by the Burrells for over 220 years. Overlooking Knepp Lake is a castle which remains the family home. Until recently most of its 3,500 acres was devoted to traditional arable and dairy farming but in 2001 they shifted their focus entirely and embarked on a series of regeneration and restoration projects aimed at nature conservation. There is a clear focus on regenerative agriculture which they explain in detail on their website⁶³. This means they are still farming, just in a less intensive way - producing organic, pasture-fed meat from free-roaming herds of animals within the Wildland project. This is great example of what some Dorset estates could achieve.

Tree Planting

The UK needs to at least quadruple the current rate of woodland creation and increase the proportion that comprises native tree and shrub species to help minimise the pace and level of climate change, adapt to its unavoidable impacts and give nature a fighting chance of recovery. The challenge is to find the space that trees need to expand and thrive across our nation. Currently the UK has just 13% woodland cover and needs to get to 19% if the UK is to meet its net zero carbon 2050 target.

UK tree planting initiatives.

- The **National Trust** aim to plant and establishing 20 million trees by 2030⁶⁴
- The **Woodland Trust**⁶⁵ are on a mission to get 50 million native trees in the ground over the next 5 years, planting them where they’ll bring the most benefit, complementing other precious habitats, supporting

wildlife and storing carbon for centuries. They want to make sure everybody in the UK has the chance to plant a tree. So they are giving away hundreds of thousands of trees to schools and communities.

- The **Queen's Green Canopy**⁶⁶ (QGC) is a tree planting initiative created to mark Her Majesty's Platinum Jubilee in 2022. Everyone across the UK is being invited to plant trees from October 2021, when the tree planting season begins, through to the end of the Jubilee year in 2022. They aim to create a network of individual trees, avenues, copses and whole woodlands in honour of The Queen's service and the legacy she has built. This will create a green legacy of its own, with every tree planted bringing benefits for people, wildlife and climate, now and for the future.
- **Countryfile Plant Britain**⁶⁷ wants to get everyone planting in a big, ambitious two-year project where we can all do our bit in the battle against climate change and to help wildlife and our own well-being. They launched with the goal of planting 750,000 trees – one for every UK primary school starter in 2020. From inner city estates to some of Britain's most breath-taking landscapes, it doesn't matter where you live or however small a space you've got to plant, they can help. Over the next two years they'll also be looking at fruit, veg and flowers. So whatever you plant, be sure to log it on their interactive map.

Forestry England.

Forestry England look after more than 1,500 of the UK's forests including a number here in Dorset. Alongside their recognition that *"forests are a vital source of sustainable timber, to support jobs and industry, a home for wildlife to thrive and a place for people to connect with nature and enjoy themselves"*, they will clearly have a role to play in the radical increase in tree cover required across the country to address climate change. Forestry England's five-year plan sets out the priorities for sustainable, productive forests that deliver for the climate emergency, tackle the nature crisis and support people's health and wellbeing.

Forest Plans define the long-term vision for a woodland or a collection of woodlands and set out how management will move towards achieving this vision over the next ten years. Information on a recent Forestry England consultation on the East Dorset Forest Plan 2020 – 2030⁶⁸ can still be viewed although this is now closed.

Avoiding the carbon-offsetting land grab

The potential conflicts for land use are explored in the ZCB reports. There is also concern among many campaigners and groups that, without sufficient oversight and consideration, land could be 'grabbed' for apparent climate solutions which may be detrimental to the overall goal of preventing environmental breakdown or could lead to creating further social issues. This article⁶⁹, by Laurie Macfarlane, a research associate at the UCL Institute for Innovation and Public Purpose and co-author of 'Rethinking the Economics of Land and Housing',

⁵⁹ <https://www.theguardian.com/environment/2021/mar/04/catastrophic-uk-has-lost-90-of-seagrass-meadows-study-finds>

⁶⁰ <https://www.projectseagrass.org/>

⁶¹ <https://www.projectseagrass.org/seagrass-ocean-rescue/>

⁶² <https://www.kneppestate.co.uk/>

⁶³ <https://www.kneppestate.co.uk/regenerative-agriculture>

⁶⁴ <https://www.nationaltrust.org.uk/features/plant-a-tree>

⁶⁵ <https://www.woodlandtrust.org.uk/>

⁶⁶ <https://queensgreencanopy.org/>

⁶⁷ <https://www.bbc.co.uk/programmes/articles/14KG5D14vHxHGvch64YnqNc/plant-britain>

⁶⁸ <https://consult.forestryengland.uk/forest-districts/east-dorset-forest-plan-2020-2030/>

⁶⁹ <https://www.opendemocracy.net/en/oureconomy/scotland-is-on-the-global-frontlines-of-the-great-net-zero-land-grab/?s=09%3cspan%20id=%22ms-outlook-android-cursor%22%3e!~OMSelectionMarkerEnd~>

considers the risks of monetising natural assets and carbon offsets and the issues of land ownership. While it overlaps with some of the issues we discuss in the *Policies* and *Justice for All* chapters, it is important to note these risks and issues when considering how we address land use in general.

Soil Quality

The **Soil Association**⁷⁰ is a charity which *'digs deeper to transform the way we eat, farm and care for our natural world'*. Noting that, if we want to live in a world which is in balance with nature and a future with good health and a safe climate, it is their mission to *'help everyone understand and explore the vital relationship between the health of soil, plants, animals and people. Campaigning, educating and helping everyone to grow better together'*.

The charity helped to establish, and has ongoing involvement in:

1. A wholly owned subsidiary Soil Association Certification Limited, the UK's largest organic certification body.
2. Food for Life, a programme making good food the easy choice for everyone.
3. The Soil Association Land Trust, who acquire and maintain farmland sustainably and to connect the public with land stewardship.

They are also a lead partner in several programmes working directly with communities to deliver positive change in food and farming, including Innovative Farmers, Sustainable Food Places, Food For Life Get Togethers and more.

The Power of Community

As described on its official website⁷¹ this film details how when *"the Soviet Union collapsed in 1990, Cuba's economy went into a tailspin"* and how with imports of oil cut by more than half (and food by 80 percent) Cuba's people were desperate. The film tells of *"the hardships and struggles as well as the community and creativity of the Cuban people during this difficult time. Cubans share how they transitioned from a highly mechanized, industrial agricultural system to one using organic methods of farming and local, urban gardens. It is an unusual look into the Cuban culture during this economic crisis, which they call 'The Special Period'."*

While the film opens with a short history of Peak Oil, a term for the time in our history when world oil production will reach its all-time peak and begin to decline forever, what we now know is we cannot afford to burn all the oil in known reserves without causing catastrophic climate change. However, the crisis Cuba faced is an opportunity for all of us to learn there are alternatives and hope beyond oil.

X-Polli:Nation

Funded by EPSRC and National Geographic, **X-Polli:Nation**⁷² cross-pollinates ideas, methods and technologies for pollinator citizen science. The project researches how people and Artificial Intelligence can help each other in citizen science learning around pollination and pollinating insects. It also considers how outdoor learning and citizen science can be incorporated into primary and secondary schools and how approaches to citizen science transfer to different social contexts. X-Polli:Nation is an actionable citizen science project, that encourages everyone to create, maintain and monitor pollinator-friendly habitats and act as pollinator stewards in society.

⁷⁰ <https://www.soilassociation.org/>

⁷¹ <https://www.communitysolution.org/mediaandeducation/films/powerofcommunity/>

⁷² <https://xpollination.org/>