



# Transitioning to a circular economy to restore nature

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This briefing is on behalf of nature and animal welfare coalition Wildlife and Countryside Link ([Link](#)) and explores how transitioning to a circular economy can protect and restore nature.

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## Why does the circular economy matter for nature?

When exploring the benefits of the circular economy, the focus has been on reducing the 55% of greenhouse gas emissions that come from extraction and processing of resources.<sup>1</sup> This is crucial for nature as climate change is one of the biggest threats to wildlife. However, the fact that resource extraction and processing is also directly responsible for 90% of land-based biodiversity loss and water stress, and damages marine ecosystems, is often overlooked.<sup>2</sup> This is adding to our nature crisis: since 1970, species abundance in the UK has declined over 30%,<sup>3</sup> and the size of wildlife populations has shrunk by 73% globally.<sup>4</sup>

We need to shift to a circular economy to achieve our Environment Act targets and the commitments in the Environmental Improvement Plan. The target to halve residual waste per person by 2042, and the goal of eliminating avoidable waste are clear drivers of the transition to a circular economy. However, we must go beyond a focus on waste and reduce resource consumption to address the triple planetary crisis of biodiversity loss, climate change and pollution together. This is necessary to achieve the Environmental Improvement Plan apex goal of reversing the decline in English biodiversity, and to limit the UK's impact on global biodiversity to help meet the Kunming-Montreal Global Biodiversity Framework targets.

## Reducing the impact of resource extraction on nature

Resource extraction and processing to make products for UK consumption is fuelled by extraction from ecosystems at home and abroad. Transitioning to a circular economy reduces the need to extract virgin raw materials, reducing the amount of land used for production and the resulting damage to ecosystems, allowing nature to recover. For example:

- In our largely linear economy, producing new products normally uses virgin raw materials. Construction, for example, accounts for 50% of global resource extraction,<sup>5</sup> and extraction of raw materials for construction usually involves damaging or destroying ecosystems through logging and mining, or planting of monocultures for timber. UK oil and gas extraction, which is used for plastic production as well as for energy, also causes significant habitat loss, disturbance to marine wildlife through

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<sup>1</sup> [UNEP: Global Resources Outlook](#)

<sup>2</sup> [UNEP: Global Resources Outlook](#)

<sup>3</sup> [Defra: Status of all-species: relative abundance](#)

<sup>4</sup> [WWF: Living Planet Report 2024](#)

<sup>5</sup> [SEI: Towards a sustainable global construction and buildings value chain](#)



noise pollution and other impacts on marine nature.<sup>6</sup> Transitioning to a circular economy reduces demand for virgin raw materials and so reduces land used for resource extraction and associated biodiversity impacts. It does so by maximising the lifetime of existing products through repair and reuse, and recycling materials into new products. Growing these practices requires [financial incentives](#), especially expansion of effective EPR schemes to resource and waste intensive sectors.

- Farming at home and abroad can damage nature through pollution, as explored in the next section, but also leads to the direct destruction of nature when farmland is expanded. This especially applies to imported foods which involves high levels of deforestation: UK consumption led to 35,578 hectares of deforestation worldwide in 2022.<sup>7</sup> Measures to reduce food waste reduce this damage by reducing the amount of land needed to produce food and the amount of polluting inputs needed. Currently, the UK wastes about a quarter of all food purchased, and about 70% of this waste is edible.<sup>8</sup> Transitioning to a circular economy, such as by shifting subsidies in favour of redistribution of food instead of energy recovery, can reduce food waste [on farms](#) and in households and businesses. Mandatory reporting of food waste by farms and businesses, and expansion of the EIP food waste target to cover these sectors would be a first step in understanding the problem and creating an incentive for change.
- Current farming systems also require high levels of inputs, which reduce space for nature and pollute the environment. For example, over 50% of the UK's arable production land is used to grow feed for animals; land which could be used to feed people or restore nature.<sup>9</sup> The UK also imports large amounts of soya, at least 75% of which is used for animal feed or in animal products, with production of this soya strongly linked to deforestation.<sup>10</sup> In addition, 97% of UK agricultural land relies on the use of artificial fertilisers.<sup>11</sup> Transitioning to a circular economy must focus on reducing the need for inputs into agriculture through increased efficiency and nutrient recovery. For example, by feeding animals crop residues and food waste, and grazing animals in low densities on species-rich grassland, the amount of land needed to grow animal feed could be reduced. Food waste and other biodegradable wastes can also be processed into fertiliser to replace artificial fertilisers. For instance, through systematic changes to the way grassland vegetation is managed, grass cuttings can be transformed into a valuable resource capable of generating heat, power, and fertiliser while reducing the cost of green space management.<sup>12</sup> Moving to nature-friendly farming practices that boost soil fertility, such as reduced tilling, crop rotation, and agroforestry is also essential to reduce the need for external inputs and associated resource extraction. These practices deliver co-benefits for nature, such as increased

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<sup>6</sup> [Oceana and Uplift: In Deep Water](#)

<sup>7</sup> [JNCC: Global biodiversity impacts of UK economic activity / sustainable consumption](#)

<sup>8</sup> [House of Commons Library: Food Waste in the UK](#)

<sup>9</sup> [Defra: Agricultural land use in the United Kingdom](#)

<sup>10</sup> [WWF: Riskier Business: The UK's Overseas Land Footprint](#)

<sup>11</sup> [UK Parliament POST: The future of fertiliser use](#)

<sup>12</sup> [West Sussex County Council: Greenprint](#)



biodiversity, and cleaner air and water. Increasing the proportion of our food sourced from nature-friendly farming globally will require reduced intensity and fewer inputs, meaning reduced livestock numbers, and so reduced meat consumption.<sup>13</sup>

### Eliminating pollution and reducing waste

There has been a particular focus on incentivising end-of-life solutions in recent government policies, yet a circular economy approach tackling every step of the supply chain is required to prevent pollution from entering the natural environment. For example:

- Resource extraction and processing adds to pollution problems before products even become waste. For example, mining byproducts are often poorly managed, causing toxic heavy metals to leak into natural environments. This is especially damaging to river systems: previous and current metal mines affect 479,200 km of river channels and 164,000 km<sup>2</sup> of floodplains globally.<sup>14</sup> Processing of resources also adds to pollution. For instance, dyeing and finishing of textiles uses many chemicals which are toxic to aquatic life.<sup>15</sup> Meanwhile, UK oil and gas extraction leads to chronic pollution through minor oil spills and release of toxic chemicals.<sup>16</sup> As set out above, transitioning to a circular economy reduces the extraction of raw materials and manufacture of new products decreasing impacts on nature.
- Plastic pollution is pervasive and harmful. Marine plastic pollution is growing, with the amount of plastic found on beaches increasing by 10% between 2023 and 2024.<sup>17</sup> This litter kills marine wildlife through ingestion, entanglement and build-up of toxic chemicals in animals. On land, plastic is trapping animals, killing them: Trash Free Trails found dead animals in litter on 8% of all surveys of nature trails.<sup>18</sup> Plastic also breaks down into microplastics and causes degradation in soil quality, death of freshwater wildlife, and decreased photosynthesis.<sup>19,20</sup> Transitioning to a circular economy, can contribute to reducing virgin plastic production, including through elimination of non-essential single-use packaging and reuse/refill systems. Recycling plays a role in the circular economy for plastic. However, the best performing countries achieve only a 60% recycling rate,<sup>21</sup> and only 9% of all plastics ever produced have been recycled.<sup>22</sup> Production reduction must be the priority. Policies such as [packaging extended producer responsibility](#) and the [deposit return scheme](#) should be implemented to existing timelines. New measures are needed on a sector-by-sector basis, including for [fishing gear](#): fishing related litter on beaches was up 33% in 2024 over 2023.<sup>23</sup>

<sup>13</sup> [Wageningen University: Circularity in agricultural production](#)

<sup>14</sup> [Science: Impacts of Metal Mining on River Systems: A Global Assessment](#)

<sup>15</sup> [Engineering and Applied Science Letters: Effects of Textile Dyeing Effluent on The Environment and its Treatment: a Review](#)

<sup>16</sup> [Oceana and Uplift: In Deep Water](#)

<sup>17</sup> [Marine Conservation Society: Beachwatch 2024](#)

<sup>18</sup> [Trash Free Trails: State Of Our Trails Report](#)

<sup>19</sup> [EIA: Environmental and human health harm caused by agriplastics](#)

<sup>20</sup> [Scientific American: Microplastics Are Messing with Photosynthesis in Plants](#)

<sup>21</sup> [House of Commons Library: Plastic Waste](#)

<sup>22</sup> [Geyer, Jambeck and Law, 2017: Production, use, and fate of all plastics ever made](#)

<sup>23</sup> [Marine Conservation Society: Beachwatch 2024](#)



- Many products contain chemicals which are harmful to nature. For example, the PFAS group of chemicals, found in frying pans to clothing, never breaks down in the environment and has been found at high concentrations in wild animals, damaging their health.<sup>24</sup> PFAS, microplastics and other harmful chemicals are building up in our soils through application of sewage sludge,<sup>25</sup> with the UK having some of the highest rates of soil microplastic contamination in Europe.<sup>26</sup> Sites across England contaminated by chemicals are a risk to human and environmental health.<sup>27</sup> By keeping products in use for longer, transitioning to a circular economy reduces waste and thus chemical pollution. However, harmful chemicals must also be designed out to enable the transition to a circular economy. For instance, furniture such as sofas cannot currently be recycled due to the use of harmful chemicals in production. Chemicals should be restricted through UK REACH and product passports should be introduced to keep track of harmful chemicals to enable safe reuse and recycling.<sup>28</sup>
- Nitrogen pollution is a major threat to UK nature. It is causing eutrophication,<sup>29</sup> build-up of nitrogen in habitats, increased soil acidity, and contributing to climate change, reducing populations of sensitive species.<sup>30</sup> Most nitrogen pollution to sensitive habitats comes from agriculture due to application of fertilisers. Transitioning to a circular economy would significantly reduce nitrogen pollution through increased efficiency of fertiliser application, as well as the transition to nature-friendly farming practices which reduce the need for inputs as described above. For instance, habitats such as permanent species-rich grasslands support sustainable livestock management (such as rotational grazing) and do not require fertilisers or ploughing, reducing nitrogen pollution.

### We can't ignore the impact of the linear economy on nature

Transitioning to a circular economy can make a significant contribution to restoring nature, as well as reducing greenhouse gas emissions. It can prevent pollution that kills wildlife; reduce the destruction of ecosystems to extract resources; help shift us to nature-friendly models of land management; and reduce the amount of land needed for production, making space for nature. It can only do this if the focus is on reducing resource consumption through the circular economy. The material footprint in England was 17.2 tonnes per capita in 2021, a level that has remained roughly stagnant since 2009.<sup>31</sup> This must be reduced by at least 50%.<sup>32</sup> To kickstart this process the UK should create a strong legal target for UK resource consumption reduction to underpin circular economy ambitions.

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<sup>24</sup> [PFAS Free: About PFAS](#)

<sup>25</sup> [Fidra: Environmental Risks from Sewage Sludge](#) and [Fidra and EIA: The Agricultural Use of Sewage Sludge](#)

<sup>26</sup> [Lofty, et al., 2017: Estimations of contamination onto European agricultural land via sewage sludge recycling](#)

<sup>27</sup> [BBC: Thousands of high-risk toxic sites unchecked due to lack of cash](#)

<sup>28</sup> [Fidra: How Controls on Chemicals Enable a Circular Economy](#)

<sup>29</sup> The build-up of nutrients, causing growth in micro-organisms that deplete aquatic oxygen, killing wildlife.

<sup>30</sup> [WWF: Nitrogen: Finding the Balance](#)

<sup>31</sup> [Defra: England's Material Footprint](#)

<sup>32</sup> [Green Alliance: Measuring up](#)



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Wildlife and Countryside Link (Link) is the largest nature coalition in England, bringing together 86 organisations to use their joint voice for the protection of the natural world and animals.

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The following organisations support this briefing:

Chester Zoo  
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Fidra  
Friends of the Earth Scotland  
Greenpeace UK  
Keep Britain Tidy  
Marine Conservation Society  
Soil Association  
Sustainable Nitrogen Alliance  
The British Mountaineering Council (BMC)  
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