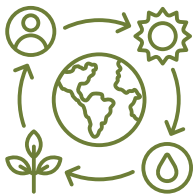


Climate and biodiversity



Climate change and biodiversity loss threaten natural ecosystems. Adaptation and mitigation are important for the economy as well the overall resilience of communities. **Natural capital and ecosystem services are increasingly viewed in terms of their economic value as they support many livelihoods including agriculture, forestry and fisheries, tourism activities and renewable energy.** They also provide health and wellbeing benefits through access to nature.

Natural capital refers to the planet's stock of natural resources, like land, water, air, and all living plants. It is the foundation upon which ecosystem services are built, which is all the benefits humans derive from these natural resources.



Humans have a clear interest in understanding and managing ecosystems as it is vital for human development and plays a key role in underpinning the economy.

It is estimated that at least **14.4% of Scotland's total economic output is reliant on natural capital**: supporting £40.1 billion of Scotland's total economic output, with around 261,600 jobs estimated to be supported by natural capital.

Climate change threatens natural capital by degrading ecosystems, reducing biodiversity and weakening the ability of the natural environment to provide the resources needed to underpin economic activity. A changing climate therefore alters, directly or indirectly, ecosystem characteristics and the sustainability of life-support services.



Biodiversity loss causes ecosystems to fail, economies to suffer and climate change to worsen. There are important feedback loops between climate change and nature loss, prompting policy makers to refer to "twin crises." Both result from human activities and both exacerbate the effects of the other.

Whilst much of the Hutton's research is focused on maintaining natural capital, an important component of its economic impact are the effects it has on **helping to mitigate the costs associated with biodiversity loss and climate change.**

The Scottish Government's Climate Change Committee estimates that impacts of climate change already cost the Scottish economy billions of pounds per year. Estimates for the economic costs of climate change projected to 2050, range from 1.2% to 1.6% of GDP per year²⁴ to 3.3% under current policies²⁵.

Another study estimates damage to the natural environment could lead to a 12% reduction to GDP in the years ahead – larger than the hit to GDP from Covid-19²⁶.



The Hutton's intersection of scientific expertise is shaping resilient agricultural practices, preserving biodiversity, protecting and restoring natural habitats and enabling societies to thrive in the face of a changing climate. **It is actively contributing to the Scottish Government's sustainability, environment, biodiversity, climate change and net-zero agendas.**