

Enhancing access to the NEVO Tool - Natural Environment Valuation Online

The [NEVO Tool](https://www.leep.exeter.ac.uk/nevo/) (<https://www.leep.exeter.ac.uk/nevo/>) is a powerful, open-access, web application designed for regional spatial planning. It can be used to explore the integrated relationships between climate change, land-use change, ecosystem service flows and economic values. SWEEP is helping to improve its accessibility and function. Click here for a short [Demo Video](#).



Who are NEVO users?

Land-owners and managers	Councils, Local Authorities	Government organisations	National Parks, AONBs	Charities, Trusts	Private sector organisations	Academic, students
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How does it work?

NEVO allows users to explore, quantify and make predictions about the environmental costs and benefits arising from changes in land-use across England and Wales.

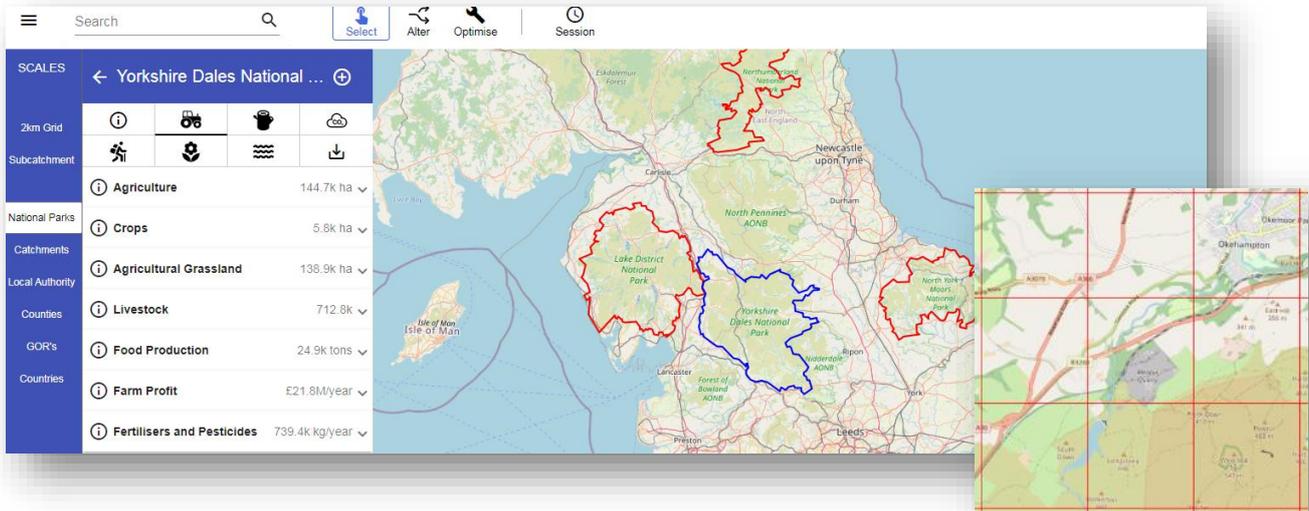
It brings together spatially explicit data, natural science and economic models and allows users to view baseline and predicted information at different spatial scales for a **range of ecosystem services** including:

-  Agricultural production
-  Woodlands and timber production
-  Greenhouse gas emissions
-  Recreation
-  Biodiversity
-  Water quantity and quality.

What can it do?

NEVO can be used to explore the current situation and then move beyond this, to consider ‘alternative’ and ‘optimal’ scenarios based on a range of criteria.

- ❖ **Establishing baseline information**
Mapping and data downloads can be exported to support regional spatial planning and ecosystem analysis projects.
- ❖ **Exploring alternative land use scenarios**
Ask *what if?* questions to explore how changes in land-use and pricing could affect landscapes and practice.
- ❖ **Optimising land-use to support policy development**
Ask *what’s best?* questions to optimise landscapes for examining and evaluating regional land use policy development.



Scale and functionality

The NEVO Tool can explore land use at various scales, including **administrative scales**, e.g. local authorities and government office regions (GORs), **terrain-based scales**, such as **river network sub-basins** and up to country scale (England and Wales). NEVO is designed with analytical units based on a 2 km grid covering the entirety of England and Wales. It is not intended to support decision-making at an individual farm or 2 km plot scale. Its strength lies in allowing users to compare land use change at a broader scale.

The tool contains three types of functionality: Explore, Alter and Optimise.



Explore ecosystem services derived from land use in selected areas

The 'Select' panel contains summary information about land use in the defined area for the decade 2020-2030. A scroll bar allows users to move through time to see how land use and ecosystem services are predicted to change through time, taking into account climate change (using mid-range projections from UKCP09). Outputs can be downloaded as CSV files or maps.



Alter landscape characteristics

The 'Alter' mode allows users to consider 'what if?' questions. Once users have selected an area (by clicking on it in the map), they are able to consider how the flow of ecosystem services would change over time if they were to alter the land use or agricultural prices in the area.



Optimise land use

The 'Optimise' mode in NEVO allows users to consider 'what's best?' questions relating to finding the best locations to change land use in order to achieve a particular objective. Users can specify the type of land use change (from what, to what), the total amount of hectares to be changed, and the overall objective, which can be to maximise particular quantity outputs (e.g. biodiversity richness) or value outputs (e.g. timber and agricultural profits).

NEVO's development

NEVO was launched in 2019 and developed by the Land, Environment, Economics and Policy Institute ([LEEP](#), University of Exeter), with support from DEFRA and NERC.

Its **accessibility and scope** are being extended through the NERC-funded South West Partnership for Environment & Economic Prosperity ([SWEEP](#)) with new features including:

- Welcome Tour Interactive walk through
- Video Tutorials Video demonstration of how to use the tool
- Case Studies and Technical Documentation More information about the NEVO models
- CSV Variables Names Downloads an Excel Spreadsheet with variable descriptions

If you have ideas for further improving NEVO's functionality and user experience, please [contact us](#)

The NEV models

The NEVO Tool is an online version of the **Natural Environment Valuation (NEV) suite of models** - a ground-breaking spatially-explicit, integrated modelling platform which quantify and values the cascading effects of land use change through ecological and economic systems.

NEV links drivers of change including policy, market forces and the environment to impacts on food production, carbon sequestration, water quality, flood mitigation, biodiversity and numerous other ecosystem services.

For details of the NEV modelling suite, please see:

[Day D, Owen N, Binner A, et al \(2020\). The Natural Environmental Valuation \(NEV\) Modelling Suite: A Summary Technical Report. LEEP Working Paper.](#)

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Underpinning NERC science

The NEVO team, led by Dr. Amy Binner and Prof. Brett Day have worked on numerous NERC funded projects including the Valuing Nature Network, assessing ecosystem services of energy provision, payments for ecosystem services, Addressing Valuation of Energy and Nature Together (ADVENT) and the Valuing Nature Tipping Points project.

About SWEEP

The South West Partnership for Environment & Economic Prosperity (SWEEP) is a partnership between the University of Exeter, the University of Plymouth and Plymouth Marine Laboratory. Funded by the Natural Environment Research Council, SWEEP brings experts and stakeholders together to solve key challenges faced by those working with our natural resources.