Enhancing access to NEVO – the Natural Environment Valuation Online Tool

sweep
Impact Summary

The Natural Environment Valuation Online (NEVO) Tool is a powerful, open-access, web application designed for regional spatial planning. NEVO's function and accessibility were enhanced under this SWEEP project. This extended the benefit delivered to its diverse range of users. NEVO's close alignment with the NetZeroPLUS project has leveraged new funding. Ultimately, NEVO continues to accelerate the mainstream adoption and application of the Natural Capital Approach.

1,464 registered NEVO users

1,900 views of training videos

£25k new funding to develop more stable platform

Why it mattered?

NEVO is a simplified (yet still highly sophisticated) online version of the **Natural Environment Valuation (NEV) suite of models** - a ground-breaking, spatially-explicit, integrated modelling platform which quantify and value the cascading effects of land use change through ecological and economic systems. The NEV models were originally developed to support land-use change analysis relating to the new post-Brexit Environmental Land Use Management Scheme (ELMS).

Defra funded NEVO's initial development NEVO Tool (2016-2019), to bring the sophistication of the NEV models to a wider range of users, including business, policy-makers and the public. NEVO was soft-launched in Nov 2018 with over 20 organisations including the Environment Agency, Defra, Department for Transport, Balfour Beatty, eftec consultancy, Forestry Commission and the Rivers Trusts, and generally released in Jan 2019.

Under SWEEP, it was planned to continue to evolve and improve NEVO to ensure it was accessible and delivered needed-functionality to all those interested in exploring regional spatial planning, and the integrated relationships between climate change, land-use change, ecosystem service flows and economic values, at a time of flux in land-use management post Brexit.

What we did

During 2019-2022, the NEVO-SWEEP team – Prof Brett Day, Prof Amy Binner, Dr Nathan Owen, Patrick Collins, Dr James Webber, Dr Sara Zonnevald, William Clibborn-Booth and Dr Diana Tingley, based at University of Exeter (UoE) – worked collaboratively to achieve the following:

Ways of Working

Innovative Knowledge Provision → Natural Capital Valuation → Capacity Building

Function

- Streamlined NEVO's 'back-end' to strengthen its function and longevity.
- £25K new funding secured from UoE Business School to transfer NEVO (and the aligned Outdoor Recreation Valuation Tool - ORVal) to a more stable platform, and provide ongoing UoE technical/IT maintenance support for 5 years (2021-2026).
- Reviewed Intellectual Property rights and licensing options.
- Google analytics and user-password system set up to monitor and support the user experience.

Accessibility

- Developed NEVO's 'front-end', following a 'cold-review' of the user experience, to include a demo video (shown at COP26) and series of User Guide videos (hosted on NEVO's YouTube Channel) and as series of in-Tool resources, including an interactive 'Welcome Tour', explanations, Help functions and CSV Variable Name download.
- NEVO Tool Information Sheet produced providing an accessible review of NEVO's capabilities and to establish a single entry-point to NEVO's resources
- Report produced - Day D, Owen N, Binner A, et al (2020). The Natural Environmental Valuation (NEV) Modelling Suite: A Summary Technical Report. LEEP Working Paper.
- In-model NEVO documentation,

including Case Study 'Reconnecting and improving the River Wey'.
- Held series of SWEEP-linked Ecosystem Knowledge Network webinars (138 participants in 2018; 104 in 2019) and presented NEVO at variety of SWEEP-linked events, including during COP26, HMT Green Book workshop, and Civil Service Live conference.

Development

- Included new coverage of beaches and coastal areas. Reviewed capacity to water and pollinator ecosystem services.
- Series of meetings with current and potential new 'organisation-level' users, including the Environment Agency, NatWest Bank, Church Commissioners, Savills and other consultants and Ministry of Defence (MoD).
- Developed new 'custom area' functionality allowing users to upload their own area shapefiles and create bespoke 'My Region' analyses within NEVO. This was beta-tested in Nov 2022 with selected users, and supported by a 'Custom Area – Shapefile Upload Function' training video.
- Boosted delivery of underpinning NEV models in NetZeroPLUS project (£5m), a UKRI-funded Greenhouse Gas removal Demonstrator Project, which is combining natural and social science to guide a massive expansion of woodland in the UK.

Impacts & benefits delivered

NEVO user review

- NEVO has 1464 registered users, with 699 being active in the last 12 months (to 1st Dec 2022). Approximately 27% were returning users, indicating that NEVO is still being discovered by new audiences. It has a core set of frequent, including consultancies Mott MacDonald, eftec, Arup and AECOM. The majority of registered users are based in the South West region of England (23%), London (17%) and South East (13%).
- The series of NEVO training videos on its YouTube Channel have been viewed over 1900 times.
- The new NEVO 'custom area' functionality was beta-tested by a select group (17 people) comprised of some of NEVO's most frequent users and potential new organisation-level users, including the Environment Agency (EA), The Rivers Trust and Ministry of Defence.

Attitudinal/Capacity
High-level endorsements
NEVO was powerfully endorsed by:
- UK government's Department for Environment and Rural Affairs (Defra), in its highly influential 2020 guidance 'Enabling a Natural Capital Approach'.
- Committee on Climate Change, an independent, statutory body advising government on building a low-carbon economy and preparing for climate change.

Boosting development and intellectual input
- NEVO's development under SWEEP has strengthened the intellectual and technical development of the NetZeroPLUS modelling work, also based on the underpinning NEV models.

Organisational Function
Informed reviews, strategy and planning – including:
- National Infrastructure Commission's natural capital analysis of 'Rail Needs Assessment'.
- EA's review of tools linked to a judicial review of Diffuse Water Pollution Plans and the 'nutrient neutrality' requirement.
- EA's Natural Capital Evidence programme of work.

NEVO is also used by a range of local organisations, e.g., Shropshire Council, The Rivers Trust and National Parks, investigating the effect of potential land-use change on, for example, carbon sequestration, river water quality and biodiversity.

Case Study
In 2020 consultants (Wood Group UK Ltd) used NEVO extensively as part of a Defra-backed Environment Agency project which sought to review the nutrient impacts from diffuse pollution sources, in freshwater catchments draining into the Solent European Protected Sites, as well as the Itchen Special Area of Conservation.

Delivered commercial advantage
Environmental consultancies use NEVO in their commercial practices as a knowledge-gathering and high-level screening and analysis tool. For example, Mott MacDonald routinely use NEVO's accessible interface to upskill staff, introduce welfare values into environmental assessments (which would previously have been impossible), and boost their commercial capability through early-adopter advantage.

Leveraged funding opportunities
- NEVO has already provided the impetus for new funded workstreams under NetZeroPLUS.
- NEVO's status as a high-profile 'gateway tool', and the development of new 'custom area' functionality which directly meets the current demand for bespoke-area land use analyses, is anticipated to provide further leveraged funding opportunities into the future.

> " *The NEVO tool was instrumental in helping our consultants (Wood Group UK Ltd) demonstrate the costs and values of the broader benefits associated with land use change (e.g. conversion of grassland to woodland), whilst also taking forecast future trends in farming practices and yields into account, with the principle aim being to reduce excessive nutrient inputs into the water environment.*
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> *The evidence was shared with Defra and may help to influence Environment Agency policy direction. It enabled us to start looking at the benefits of "doing different things" or "doing things differently" in the agricultural landscape, to help move failing European Protected Sites back towards "favourable condition" status.*
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> *One of the key challenges we have with enabling improvements to the environment is justifying values. For decision makers, fiscal value is an essential component, both in practical and strategic terms."*

**Jonathan Garland, Senior Environmental Planner, Environment Agency**

Looking to the future

Land use change and its impacts on ecosystems services remain a critical area of concern for many organisations engaged in land management; particularly in the context of UK ambitions for net zero and biodiversity recovery.

NEVO remains the archetype of a user-focused, free-to-use tool to support complex land use planning decisions. But such decisions are complex and often specific to the context of the organisation making them.

Building on the NEVO technologies and the strength of the user group built up under SWEEP, near future plans are to develop bespoke user tools that more closely ally with the decision-support needs of particular organisations, while integrating developing state-of-the art science and economics to ensure NEVO delivers robust evidence.

For more information contact sweep@exeter.ac.uk or nevo@exeter.ac.uk
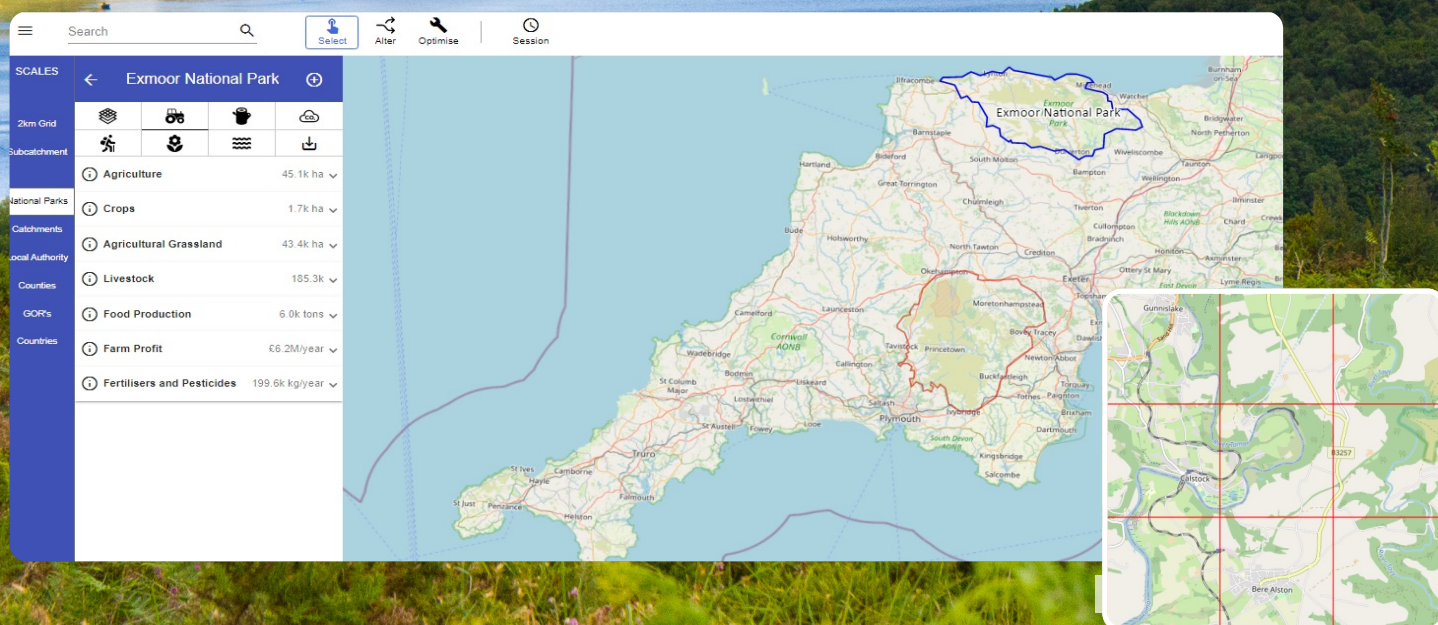
Organisations we've worked with

About SWEEP

The South West Partnership for Environmental & Economical 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 and stakeholders together to solve key challenges faced by those working with our natural resources. **www.sweep.ac.uk**