

Forest Ecosystem Services: Deep Dive on Recreation and Tourism

Oliver Mann
Natural Capital Accounts Team
Environmental Economy Division

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Agenda

- SEEA Guidance
- Introduction to the UK estimates of Recreation and Tourism
- UK Methodology and Limitations
- UK Data Sources and Limitations
- The UK experience of developing Recreation and Tourism estimates; advice and considerations for setting up your own versions
- Discussion

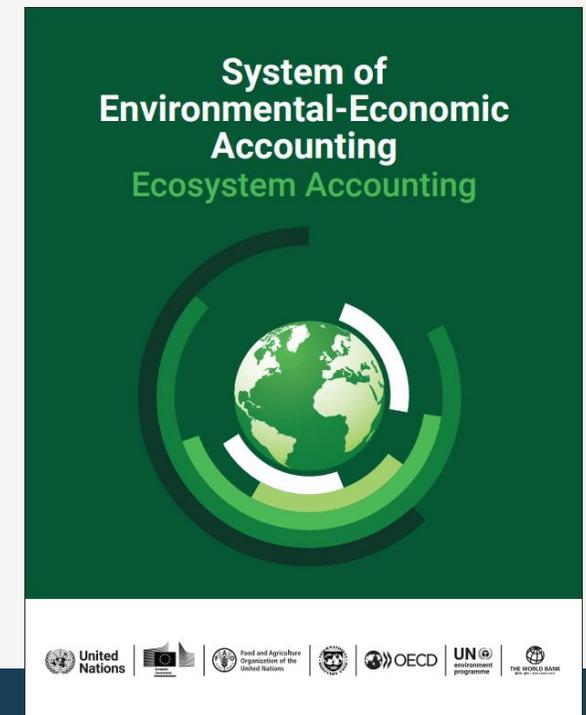
SEEA Guidance



System of Environmental Economic Accounting

- Integrated spatial statistical framework for organising biophysical information about ecosystems
- Developed to make the contributions of nature to the economy and people more visible
- SEEA guidance suggests three main types of ecosystem services (section 6.51 in SEEA-EA):

- *Provisioning services are those ecosystem services representing the contributions to benefits that are extracted or harvested from ecosystems.*
- *Regulating and maintenance services are those ecosystem services resulting from the ability of ecosystems to regulate biological processes and to influence climate, hydrological and biochemical cycles and thereby maintain environmental conditions beneficial to individuals and society.*
- *Cultural services⁷² are the experiential and intangible services related to the perceived or actual qualities of ecosystems whose existence and functioning contribute to a range of cultural benefits.*



SEEA Guidance

System of Environmental Economic Accounting



Cultural services	
Recreation-related services	Recreation-related services are contributions of ecosystems, in particular through their biophysical characteristics and qualities, that enable people to use and enjoy the environment through direct, in situ, physical and experiential interactions with the environment. These include services both to locals and to non-locals (i.e. visitors, including tourists). Recreation-related services may also be supplied to those engaging in recreational fishing or hunting. These are final ecosystem services.
Visual amenity services*	Visual amenity services are ecosystem contributions to local living conditions, in particular through the biophysical characteristics and qualities of ecosystems, that provide sensory benefits, especially visual. These services combine with other ecosystem services, including recreation-related services and noise attenuation services, to underpin amenity values. These are final ecosystem services.
Education, scientific and research services	Education, scientific and research services are ecosystem contributions, in particular through their biophysical characteristics and qualities, that enable people to use the environment through intellectual interactions with it. These are final ecosystem services.
Spiritual, artistic and symbolic services	Spiritual, artistic and symbolic services are contributions of ecosystem, in particular through their biophysical characteristics and qualities, that are recognized by people for their cultural, historical, aesthetic, sacred or religious significance. These services may underpin people's cultural identity and may inspire them to express themselves through various artistic media. These are final ecosystem services.
Other cultural services	

Table 6.3

Reference list of selected ecosystem services

SEEA Guidance



System of Environmental Economic Accounting

- Recreation-related services
- *"7.49 Recreation-related services are commonly quantified using the number of visits to a specific natural location. While these measures are not a direct quantification of the ecosystem contribution, they are considered a suitable proxy that can be improved by taking into consideration, as far as possible, the number and length of time of interactions with specific features and characteristics of the ecosystems concerned."*

Ecosystem service	Common ecosystem types	Factors determining supply		Factors determining use	Potential physical metrics for the ecosystem services	Benefits	Main users and beneficiaries
		Ecological	Societal				
Recreation-related services	Many ecosystem types	Extent and condition; presence of iconic landmarks or species; structural state and landscape/seascape characteristics (e.g. percentage of urban green space, distance to open green space)	Ecosystem management including facilities to support access	Accessibility of recreation sites; location of users; demand for outdoor recreation	Number and length (hours) of visits	Physical and mental health; enjoyment (non-SNA benefit)	Households; tourism and outdoor leisure service sectors

Appendix A6.1 Initial logic chains for selected ecosystem services

Accounting for ecosystems services....

- In physical terms:
 - The flows of the ecosystem service in a measurement unit that is appropriate for that ecosystem service.
 - In the UK, we call this physical flows.
- In monetary terms:
 - Choosing an appropriate valuation concept for the ecosystem service.
 - In the UK, we have Annual value and Asset value

Recreation and Tourism in the UK

Recreation and Tourism Overview

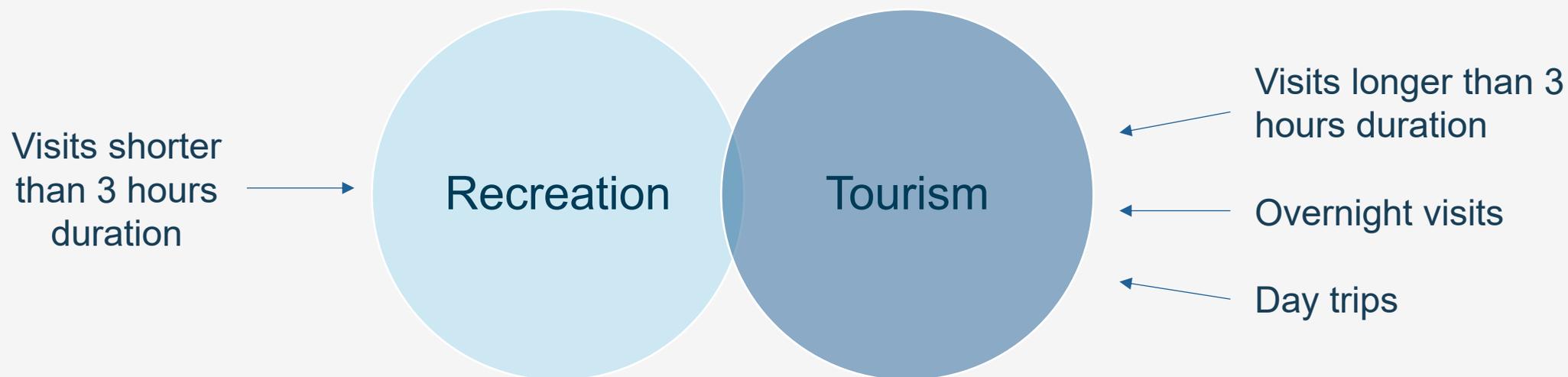
- Estimating the amount spent to enable people's visits to the natural environment
- This includes spending on transport, car parking and admission costs, but not other associated costs, for instance, buying a coffee in a visitor centre
- In the absence of a cost to access nature, buying a bus ticket represents the cost of the trip, so this is taken as a proxy for the value of accessing the site
- Many outdoor recreation visits have no expenditure e.g. walking to a local park - therefore we acknowledge that the expenditure-based methods provide an underestimation of the value provided by visits to the natural environment. Other services, **Recreation (house prices)** and **Recreation (health benefits)**, aim to capture some of this additional value
- We look at recreation and tourism overall, and then break it down by habitat, rather than focussing on a habitat at an individual level



Recreation and Tourism Overview

Due to differing survey structures, the total estimates combine separate figures for nature-based tourism and outdoor recreation. To avoid double-counting these are defined as follows:

- *Tourism: day visits longer than 3 hours in duration, overnight trips and visits from international travellers*
- *Recreation: day visits which are 3 hours or shorter in duration*



Recreation and Tourism in the UK

- Physical Flow – 5.1 billion outdoor recreation and tourism visits
- Annual Value of £10 billion – the largest ecosystem service in the UK Natural Capital Accounts
- Asset Value of £347 billion

Methodology

SEEA Travel Cost Method

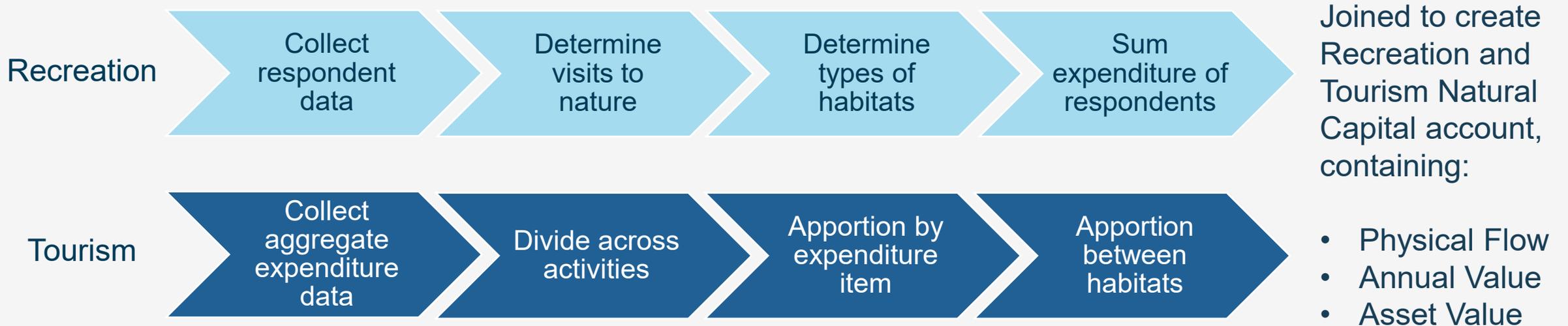
Our Recreation methodology is underpinned by the SEEA Travel Cost Method, as outlined below:

"9.47 The travel cost method is commonly used in economics to estimate the value of recreational areas based on the revealed preferences of visitors to a site. A demand function for recreation is estimated by **observing the actual number of trips** that take place at different costs of travelling to a recreational or cultural site and assuming that people hold similar preferences with respect to visiting the site. Data on **costs of travelling** include the **expenditures incurred by households or individuals to reach a recreational site and entrance fees and may also include the opportunity cost of time spent travelling to and visiting the site.** Travel cost data are ideally captured at a detailed level that considers the different features of the sites being visited and enjoyed. The area under the demand function provides a **measure of the welfare value** of the site, that is, including the consumer surplus."



Methodology Overview

Due to differing survey structures (respondent level for recreation; aggregate level for tourism) we initially handle recreation and tourism data separately, before combining into a single script.



Physical Flow

- To estimate an ecosystem service, we calculate annual service flows using a physical measure of its output, in units appropriate to the good or service, and then apply a valuation.
- In line with SEEA guidance, we measure the number of visits made to the natural environment

Annual Value

- Measure expenditure to access nature, in each year, as a proxy for the value of nature itself
- Attributed to:
 - admission fees
 - car parking
 - equipment hire
 - maps, guidebooks and leaflets
 - transport fares
 - vehicle running costs

Asset Value

- Natural capital asset values measure the stock, or the stream of services of that natural resource in terms of future expected supply and use, over a reasonably predictable time-period.
- The net present value (NPV) approach is recommended by the System of Environmental Economic Accounting (SEEA).
- The NPV approach estimates the stream of services that are expected to be generated over the life of the asset. These values are then discounted back to the present accounting period.

- There are three main aspects of the NPV method:
 - *pattern of expected future flows of services*
 - *asset life – the period over which the flows of values are expected to be generated*
 - *choice of discount rate*

For recreation and tourism, we apply projected population growth to a 5-year rolling average of the annual value; as the population grows, more people will access nature. The asset life is given as 100 years. In line with HM Treasury's Green Book, our estimates assume a 3.5% discount rate for flows projected out to 30 years, then declining to 3.0%, then further to 2.5% after 75 years

Assigning Habitats

- Assign estimates equally to habitats based on the type of natural places visited by respondents within their survey responses
- Use dictionaries within the code to map the natural places given in the surveys to our eight broad habitats
- Habitat disaggregated estimates may not sum to overall totals because habitat-visited questions may be less frequently asked than other questions, resulting in smaller sample sizes



Woodland



Coastal and Marine



Enclosed Farmland



Freshwater, Wetlands
and Floodplains



Mountains,
Moorland and Heath



Urban

NB. For Recreation and Tourism we combine 'Coastal' and 'Marine' due to difficulty in identifying individually. There is also an 'Other' classification.

Limitations

- A key challenge we have faced is the disparate nature of the surveys for the four nations and changes to the data over time.
- Our current estimates do not capture extent or condition of the natural resources providing the ecosystem services – this is due to the use of the Travel Cost Method.

Data Sources

Recreation and Tourism Data Sources



We use a combination of surveys for England:

- People and Nature Survey from Natural England, which gather evidence and trend data about people's access, understanding and enjoyment of nature, and how it contributes to wellbeing.
- Great British Tourism & Day Visits Surveys from Visit Britain – which measures the volume and value of domestic visits by British residents
- International Passenger Survey – visits by non-British residents to the UK

Advice and Considerations

Survey Design

Variables to Consider

- Where possible, design surveys uniformly across regions, respondent categories (e.g. domestic and international), activity types and time.
- Working with respondent-level data (a bottom-up approach) is more beneficial than trying to apportion aggregated data

- Region
- Age
- Visit No.
- Habitat
- Distance
- Time (all)
- Time (nature visit)
- Time (activity)
- Transport type
- Food & drink
- Fuel
- Car parking
- Transport fares
- Equipment hire
- Equipment purchase
- Gifts
- Maps
- Admission
- Other
- No. adults
- No. children



Further Considerations...

- Which visitors would you like to capture? Households? International Tourists? How would be best to capture these?
- Where would the payment to access nature-based recreation be captured?

Any Questions?



Natural.Capital.Team@ons.gov.uk

Discussion:

- Has anyone had any experience in developing recreation visits to nature estimates? How did it go?
- Are there any unique aspects to the nature-based recreation visits in your country?

Future Workshops

Thursday 29th January 2026:

- *Deep dive into provisioning services*

Thursday 5th February 2026:

- *Deep dive into greenhouse gas regulating services*

Thursday 12th February 2026:

- *Valuation of ecosystem services*

