

Natural Capital 101

Key Terms

Natural Capital:

Natural capital refers to **stocks** of natural “assets,” such as water, forests, wetlands, air, or soil. Just like other forms of capital, these stocks produce a flow of goods and services over time. Understanding the value of these natural assets is critical to making public policy and planning for use of our land base.

Ecosystem Services:

The **flow** of “services”, typically defined as the benefits people obtain from nature. For instance, a wetland purifies water, providing a flow of clean water to people downstream. A benefit is the actual improvement in human wellbeing provided by the flow of ecosystem services (e.g. cleaner drinking water).

Beneficiaries:

The people who benefit from the flow of ecosystem services (e.g. people who live downstream of the wetland and drink the cleaner water).

How We Measure and Value Natural Capital

Understanding and assessing the value of natural capital has made significant advances in recent years. Different methodologies have strengths and weaknesses, and the science is changing in this evolving field. The newest approaches to natural capital valuation use the concept of final ecosystem services (as opposed to intermediate ecosystem services) as the basis for valuation. While intermediary services are not specifically quantified using this approach, they are still fundamental to the overall systems value.

FINAL ECOSYSTEM SERVICES VS INTERMEDIATE ECOSYSTEM SERVICES

Final ecosystem services are the components of nature, directly enjoyed, consumed, or used to yield human well-being.¹

E.g. Clean air to breathe

Intermediate ecosystem services are the necessary supporting conditions, processes and functions that create final ecosystem services.

E.g. Air filtration by forests and wetlands.

¹ Boyd, J., & Banzhaf, S. (2007). What are ecosystem services? The need for standardized environmental accounting units. *Ecological Economics*, 63(2), 616-626.

From Assessment to Valuation: A Four Step Process

Step 1: Establish a System of Final Ecosystem Services Accounts

Like a shop owner keeping records of all the products for sale in their store, a system of accounts is a list of all the final ecosystem services to be assessed. Examples might include recreational angling opportunities, flood protection or water used for crop irrigation.

Step 2: Identify the Beneficiaries

Determine who is enjoying the benefits – how many people who live in or travel to a region and benefit from the ecosystem services listed in the accounts.

Step 3: Identify How Much the Services are Used by Beneficiaries

Determine how many days of recreation, the reduction in air pollution, or thousands of litres of water are being enjoyed by the beneficiaries in a given year.

Step 4: Measure the Value

Assign values to each ecosystem services account based on a practical assessment of what these services are worth in the traditional economy. E.g. How much households pay for clean drinking water each year.

What is the point?

Understanding the value of ecosystem services is critically important for a number of reasons:

- ✓ Identifying the **economic** benefits of protecting and enhancing natural capital and green infrastructure.
- ✓ Informing **policy decisions** related to resource developments (such as quarrying and urban boundary expansion) and conservation.
- ✓ Identifying and prioritizing **investments** in the protection, conservation, restoration or enhancement of natural capital.
- ✓ Integrating the **value** of natural capital into traditional financial accounting frameworks, so that natural features are on a level playing ground with market-based goods and services.
- ✓ Evaluating the success of conservation, preservation, protection or restoration initiatives on the value derived from natural capital.