

Fact sheet 11: An economic assessment of ecosystem services provided by forests

To manage Victorian forests, we need to evaluate the benefit of the ecosystem services they provide

Key points

- Victoria's forests provide habitat for plants, insects and animals, and are a vital part of the carbon and water cycles. They have cultural significance both for the Traditional Owners of the country, and for people of non-indigenous heritage.
- Economists use the word 'value' to describe how a good or service contributes to the wellbeing of a person or society. Ecologists, on the other hand, assess value according to how ecological processes and functions contribute to the resilience of the ecosystem to disturbance.
- Our forests are finite, and we need to make choices about how to look after them and what we can use. Whichever interpretation of value is used, the absence of a price for ecosystem services does not mean that they have no value.
- The challenge for economists is to work out how to express the variety of value in monetary terms, so that the environmental, social, and financial costs and benefits can be compared as part of an overall economic analysis of the impacts of different ways to manage forests.

What are ecosystem services?

Ecosystem services are the benefits humans receive by turning resources or environmental assets, such as land, water, vegetation and atmosphere into a flow of goods and services, such as clean air, water, and food.

Research project title

Economic assessment of Victoria's forests

Who is doing this work?

Department of Environment, Land, Water and Planning

There are three types of services: provisioning, regulating and cultural. Forest ecosystems, like all ecosystems, provide all three. We can do an assessment of the range of services forest ecosystems provide, so that we can understand the benefits we receive from them.

Using water as an example, we can assess the quantity of water provided by an ecosystem. We can also analyse its quality and how free of pollutants it is. The first is provisioning service, the second regulatory. Cultural services might include the cultural and spiritual connection of Traditional Owners to Country, or scientific research.

The quantity and quality of water we have depends on the health of our forest ecosystem. Healthy forests also help to regulate the flows of floodwater. Water is also needed for other purposes, such as food production, the nutrient cycle, and recreation.

How do we value ecosystem services?

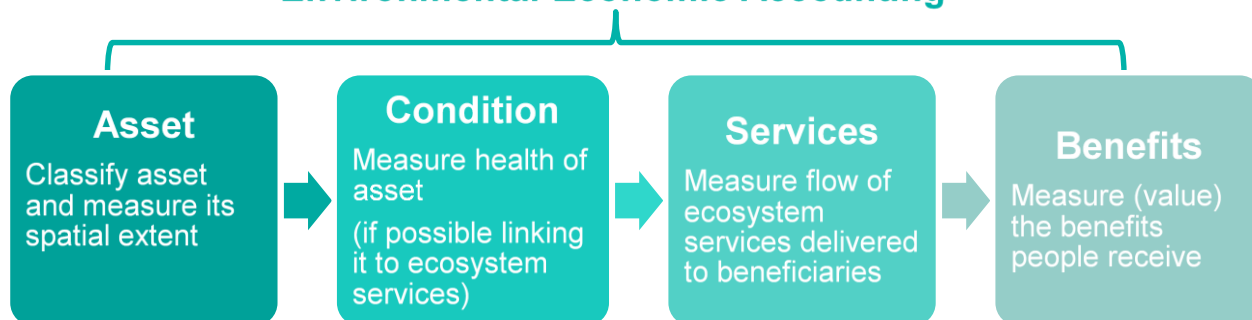
Some of the goods that the environment provides can be sold in a market. Water is an example: we can look at how an ecosystem affects the production of clean water, the cost of delivering it, and its price on the market. Or we can work out the cost if we had to replace the service that the ecosystem provides (such as water purification). These are all market-based techniques of working out the value of ecosystem services in monetary terms.

The project team will be using these techniques wherever possible because they give the greatest confidence in the values.

Not all goods can be evaluated in a market though, such as the recreational value people attribute to forests. To evaluate these services in monetary terms, the project team will use other techniques. For example, what do we observe about what people are willing to pay to travel to the forest for recreation? Or, from another angle, what are people willing to pay to protect the habitat of an endangered species?

The flow chart shows how economists can use an environmental-economic accounting framework to analyse the links between environmental assets and the benefits we receive from them.

Environmental-Economic Accounting



This flow chart shows the framework that will be used to identify assets, describe their condition, and measure the flow of services and the size of the benefit we receive.

What work is being done by the team?

The team is undertaking an economic assessment of the services that forest ecosystems provide and a valuation of benefits.

The project team will:

- identify and describe in qualitative terms the ecosystem services according to an environmental-economic accounting framework that integrates economic and environmental data
- analyse those services and map their flow across each RFA region—for example, megalitres of clean water
- value the benefits of ecosystem services in each RFA region in monetary terms where possible.

The research will provide a snapshot of current annual benefits. The report will also discuss how the assessment of current services, outlined above, could inform analysis of future scenarios.

Where possible, the team will comment on the type and size of potential changes to benefits depending on how forests are managed.

How will this project help forest management?

Assessing the benefits that forests ecosystems provide, in monetary terms, helps us to get a more comprehensive view of how ecosystems support production and consumption in our economy.

Both will help set the policy, management and investment priorities that will underpin regional forest agreements.

More information

To find out more about the ecosystem service of clean water supply see Fact sheet 9 of this series.

Future of our Forests

<https://www2.delwp.vic.gov.au/futureforests>

This series of fact sheets

<https://www2.delwp.vic.gov.au/futureforests/forest-values-assessment/forest-values-assessment-fact-sheets>

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