



# What are ECOSYSTEM SERVICES?

Ecosystem services refer to the benefits humans derive over time from natural or near-natural systems and processes. The four subcategories are:

1. **Regulating services** (e.g. watershed protection, pollution control)
2. **Supporting services** (e.g. nutrient cycling)
3. **Cultural services** (e.g. recreation, tourism)
4. **Provisioning services** (e.g. food, fuel)

The concept has been around since the 1970s but was strongly popularized through the Millennium Ecosystem Assessment in 2005. It is anthropocentric, in the sense of excluding

benefits provided to other living beings, unless those values are also explicitly shared by humans. Yet, in this sense it also forces us to justify, and sometimes quantify what benefits from nature humankind derives.

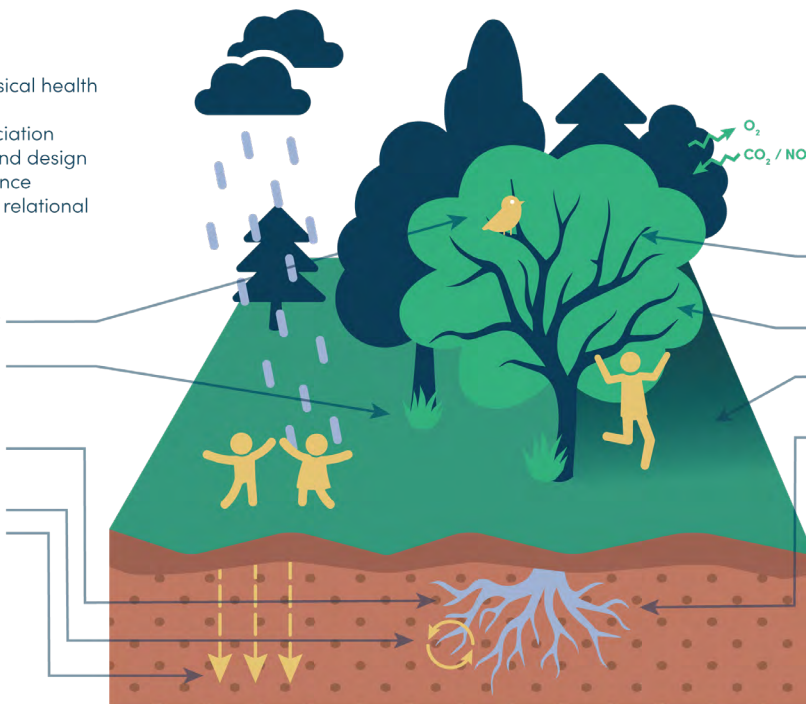
Some controversies also surround the concept. The so-called “provisioning services” are essentially hands-on tangible products (e.g. wood), which are usually sold in markets for consumption. In turn, services are defined as intangibles, often non-marketed, sometimes of public nature (non-excludable) and indivisible. Thus, genuine services also need to be managed distinctly from products.

#### Cultural:

- Recreation
- Mental and physical health
- Tourism
- Aesthetic appreciation for culture, art and design
- Spiritual experience
- Community and relational identity

#### Supporting:

- Shelter + habitat for animals
- Supporting grasses & shrubs
- Soil aeration
- Groundwater recharge
- Nutrient cycling
- Water filtration/ infiltration



#### Provisioning:

- Raw materials: e.g. wood, timber, cork
- Food/animal feed
- Medicine
- Fresh water

#### Regulating:

- Climate regulation: sequestration & storage of carbon
- Air pollution filtering
- Pollination
- Shade & temperature control
- Erosion prevention
- Stormwater management

## Forest Ecosystem Services

Graph originally developed for [resonateforest.org](http://resonateforest.org)

#### Further reading:

Millennium Ecosystem Assessment (2005). Ecosystems and human well-being : synthesis. Washington, DC: Island Press.  
[www.millenniumassessment.org/documents/document.356.aspx.pdf](http://www.millenniumassessment.org/documents/document.356.aspx.pdf)



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