

fact sheet



THE ECOSYSTEM SERVICES PROJECT

This innovative natural resource management project is studying the services people obtain from the natural environment, the value of these services economically and socially, and the opportunities that can arise from considering these services more fully in land management policies and decisions.

WHAT ARE ECOSYSTEM SERVICES?

The billions of species on our planet, including humans, interact with one another in many ways. These interactions among and between species are what define ecosystems. Ecosystems in turn, provide many “services” from which humans benefit. Ecosystem services are the transformation of a set of natural assets (soil, plants and animals, air and water) into things that we value. For example, when fungi, worms and bacteria transform the raw “ingredients” of sunlight, carbon and nitrogen into fertile soil this transformation is an ecosystem service. However, if we allow natural assets to decline, so do the benefits. Conversely, if we look after and maintain our natural assets, we will benefit from greater returns.

Some other examples of ecosystem services that come from nature include;

- provision of clean and pure water;
- maintenance of liveable climates and atmospheres;
- pollination of crops and native vegetation;
- fulfillment of people’s cultural, spiritual, intellectual needs; and
- provision of options for the future that we cannot foresee.

Ecosystem services are little understood and too sophisticated for us to reproduce even with the most advanced technology, yet the important roles of these natural services are not being recognised adequately in economic markets, government policies or land management practices. As a result, ecosystems and the services they provide are in decline.

WHY ARE ECOSYSTEM SERVICES IMPORTANT?

Ecosystem services operate in almost every aspect of our lives and they are found just about everywhere; in forests, farm paddocks, city parks and house gardens. Individuals, farms, towns, cities and industries rely on the services that ecosystems provide.

For example, cities around the world, including Australian ones, spend billions of dollars on technology to produce drinkable water. In New York City, it was found that repairing ecosystems in the water supply catchment cost less than a fifth of the price of building a new water filtration facility. This is an investment in ecosystem services, and the same opportunity likely exists for many Australian cities.

In Australia, orchards with a high diversity of organisms in the soil cope better with pests and need much lower inputs of water and fertiliser than orchards with low soil biodiversity. This means lower costs for farmers and better water for downstream users.

Social, cultural and lifestyle benefits also come from natural assets. Recreation, tourism, a sense of collective identity and personal satisfaction are associated with Australian landscapes. If rivers and lakes are filled with algal blooms and the plains are covered in the carcasses of dead and dying trees our sense of place and identity changes.

It is useful to think about how we would replace these services with technological solutions if nature were no longer able to provide them. How, for instance, would we replicate the way birds and insects transfer pollen between plants? Many farming and horticultural industries rely on this service, yet it is declining because of a lack of appropriate habitat for insects and birds. Technological substitutions, in many instances, are difficult if not impossible to recreate.

As we lose sight of the services that ecosystems supply, we tend to look to technology first, and this can be a more expensive alternative. Technology has of course benefited humans in many ways, and one of the questions that the Ecosystem Services Project asks is “how can we get the best mix of technology and ecosystem services for the overall benefit of people?”.

WHAT ARE WE DOING ABOUT IT?

In order to address these issues, the Ecosystem Services Project is studying a cross section of ecosystem services that underpin key traditional agricultural industries within Australia such as dairy, horticulture, beef, wool, and cropping. As well, ecosystem services that support the growing “quality of life” industries such as recreation, rural sub-division and tourism are being examined. Possible changes to these services under various land management scenarios are being considered in partnership with a range of stakeholders. We are asking what these changes might mean to Australians in economic, social and ecological terms. Our ultimate aim is for scientists and communities to learn together about how to deliver the right information to policy developers and decision makers to move towards more sustainable land management practices.

WHO IS INVOLVED?

CSIRO Sustainable Ecosystems and The Myer Foundation initiated the Ecosystem Services Project. The project has since grown to a large number of partners including: Five CSIRO Divisions, Land and Water Australia, The Goulburn Broken Catchment Management Authority, Rural Industries and Research and Development Corporation, The Rainforest Cooperative Research Centre, The Cotton Cooperative Research Centre, The University of New England and a range of community and government representatives.

The case study regions in which we are currently working include:

- The Goulburn Broken Catchment in Victoria
- The Atherton Tablelands in Queensland
- The Rangelands of NSW
- The Gwydir Catchment of NSW
- The Blackwood Catchment of Western Australia.

WE WANT TO HEAR FROM YOU

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