

Last word

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Forestry's secret services

We foresters know we're doing God's work, but we've generally been unsuccessful at persuading others to understand that – let alone reward us for it. The feelings generated through doing the right thing continue to be warm, but they don't pay the rent. Our inability to measure most 'ecosystem services' is at the heart of this.

The physical parameters of the logs we sell are assessed to narrow tolerances – customers know exactly what they are paying for. To charge for ecosystem services we should reasonably expect to be able to answer questions such as how much cleaner is the water, how many native species are able to thrive, and how much lower will the blood pressure of how many stressed executives be if they ride over how many kilometres of forest trails?

For many forest owners the ETS offered the first opportunity to be paid for ecosystem services, provided their trees had that special physiology which only came into existence in 1990. The environmental value provided is measured and monitored closely – and while refinements will continue to develop, it is an agreed process.

Pre-dating the ETS, some landowners in the Lake Taupō catchment were offered payment for reducing nitrate emissions, mainly achieved by converting farmland to forestry. Again the quantification is imprecise, but the methodology and formulae are agreed. An average sheep and beef farmer would get a one-off payment of ~\$5,000/ha to convert to forestry provided the land stays in forestry for 999 years. The now completed programme created around 6,000 ha of new forests in the catchment. However, it offered nothing to existing foresters – perversely it rewarded their foresight by insisting that their lands remain in forestry.

The work done here by Scion and a few others on ecosystem values is still in its infancy but already enlightening. Mountain biking at Whakarewarewa is calculated to create five times more 'value' than does forestry, although none of this value is realised by the forest owner. Scion's annual forums introduce an international perspective including examples of payment for ecosystem services: landowners near New York being paid \$1.5 billion to maintain forest cover, avoiding the need for a \$10 billion water filtration plant; and nitrogen buffers created in Chesapeake Bay as they were 60% cheaper than installing new wastewater treatment plants. A study of 27 municipal water supply catchments indicates that every 10% fall in forest cover below 60% increases water treatment costs by 25+%.

The OECD forecasts global water demand will increase by 55% by 2050. Even in this water-rich country we are seeing a scramble for water rights – and

the role of forests in the debate is often either taken for granted or is outright misconstrued.

For any useful service, demand will exceed supply until a price is charged. We should expect society will continue taking for granted the ecosystem services we provide until we educate them otherwise. Making progress in this field requires combining hard data with social science. Most foresters' lives revolve around the former, and new technology such as LiDAR will further improve our ability to quantify many relevant values. However, most of us are not only unfamiliar with dealing with the public and public perceptions, we actively avoid it. If we want our income sources to expand beyond timber production we will need to welcome input from other disciplines.

Māori landowners are particularly exposed in this area, although in some respects they also may have a head start. With few exceptions, they have no interest in ever selling their lands, as they embody social, cultural and spiritual connections relevant to their identity and values. They are therefore perpetually linked to the lands and regulatory changes can weigh heavily on their prospects. While many such rules are consistent with their overall perspective on protecting land values, over recent decades they have seen a steady erosion of land-use flexibility. Often values continue to attach to their lands directly as a result of the landowners' long-held recognition of their importance. Conversely, the need for the regulation is frequently a result of land use on general freehold land.

Lake Taupō forest landowners, for example, eschewed farming development opportunities in the 1960s specifically because of concerns over the impact on the area's sensitive ecosystems. In accordance with the tikanga they deliberately set aside large areas of land to protect water quality, biodiversity, landscape values and sacred places.

LTFT's 12,000 owners do not question those early decisions. Knowing the values associated with their ancestral lands are being maintained brings comfort and maintains connection. Also the several thousand access permits issued each year, particularly for hunting, would not have been possible had farming been pursued. However, from a commercial perspective forestry is now their only productive land use option – an option which they are very satisfied with at present, but will they still be in 100 or 500 years' time? Having others recognise the values they are contributing will certainly help.

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