**How important is ecosystem function, biodiversity and soil health to production?**

**Author:** Lana Andrews

I recently spent an afternoon on the Liverpool Plains with Craig Carter and Ian Chapman learning all about the importance of measuring the land as a living system using Ecological Outcome Verification (or EOV).

With its origins based in South America, but sourcing research and techniques from Australia and other countries, EOV is a scientific methodology that measures and trends ecological outcomes on participating producers properties. EOV measures the land as a living system using indicators in the categories of soil health, biodiversity and ecosystem function ([www.savoury.global/land-to-market/eov/](http://www.savoury.global/land-to-market/eov/)).

 “*Tallawang*” is a 445ha cattle enterprise on the Liverpool Plains, which has had EOV monitoring sites for 2 years. Owners, Craig Carter and Nicky Chirlian, use holistic planned grazing as a way to improve soil health and pastures and inherently increase stocking capacity.

Ian Chapman, accredited Master Verifier with EOV, explained the process involves setting up short term sites (areas of 30 metres squared) and long term monitoring sites (accurately defined three-transect sites), with short terms sites assessed every year and long-term sites every 5 years. Using an app called Measure Map, sites are identified and recorded with GPS locations. On short term sites, EOV assessors are looking at leading indicators of ecological health, while at long-term sites more comprehensive measurements of lagging indicators are taken including plant diversity, species richness, soil biology, and water infiltration

Scoring is used as a way of measuring the indicators of soil health, biodiversity and ecosystem function. Using scorecards for each bioregion in the country, producers are benchmarking against themselves, measuring and monitoring to enable better management decisions over time.

For example, live canopy (live groundcover) is assessed as a % of potential cover, with greater than 80% as a benchmark to aim towards, indicating that the energy cycle is functioning well. Several factors effect live canopy cover over time including time since grazing, seasonality and perenniality. Four short term monitoring sites on “*Tallawang*” measured greater than 80% of potential live canopy cover. Ecosystem function is also measured by observing invertebrates (including Dung Beetles) at each monitoring site and dung is assessed for decomposition rates. Bare ground, capping and litter decomposition are also measured as a way of determining how well the mineral cycle is functioning.

Measuring the types and diversity of plant species present is a main part of the long-term assessment. On long term monitoring sites, assessors are looking for an improving succession of plants – moving from forbs and thistles to higher quality grasses and legumes which are palatable for stock. Key species are used as an indicator for effective grazing management. For example on “*Tallawang*” Glycine was found on the monitoring sites – if the sites had been overgrazed, Glycine would have been much harder to find. Key species of warm season plants are also identified and measured for example Biloba and Bluegrass. Craig says these are good for diversity and better ecological outcomes. Desirable rare species are also assessed which gives an indication of the level of diversity at the monitoring site. Having rarer species that are increasing and more abundant, increases your diversity. Peach vine and Kangaroo Apple were two species found during this visit.

Along with measuring desirable species, measuring undesirable species is also important as these are an indicator that a site is moving towards a less desirable state.

Once positive outcomes have been established and trended over time, participating farms receive a verification seal. Using EOV as a metric means you can market your produce with the EOV seal, improving market access and possibly obtain a premium price as consumers recognise their purchasing contribution to the ecological health of farmland. Participating in EOV has meant that the owners of “*Tallawang*” have access to the Land to Market Australia brand and are recognised for their regenerative practices. EOV gives consumers the opportunity to make informed decisions about what products they buy.

Craig says “as farmers we are accountable to ourselves, the environment and society.” Looking after these means farmers can provide good quality food and fibre to the population, as well as all important ecosystem services.

Want to know more? Visit the website: <https://landtomarket.com.au/contact.php> or contact Tony Hill tony@landtomarket.com.au or 0412 128 755

*Thank you to Craig and Ian for having me and answering my endless questions!*

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