

Submission to

Inquiry into ecosystem decline in Victoria

(Standing Committee on Environment and Planning)

1. My interest

I am a soil conservationist by profession. Starting work in the early 1970's it was made clear to us by the experienced people who guided Victoria out from the severe erosion times of the 1940's and 1950's that the way to deal with soil degradation problem was to use an ecosystem approach. Contour banks, concrete structures and sediment control dams were but temporary stays in tackling the problem. The long term solution was in restoring the ecosystem, covering the full gambit of water cycle, nutrient cycle, carbon cycle, vegetative cover and soil health - as modified by climate, geology, topography – and human activities. Similarly with today's rampant losses in species diversity. The long term solution involves restoring ecosystems. Single species recovery programs are just another form of concrete structure

2. Some primary considerations

It seems to me that if this inquiry is to be both helpful and successful, it does need to be sure what it is on about.

- First, what decline are we primarily focusing on? Is it just about the loss of species? Or is it more generally about the loss of robustness of ecosystems? The solutions may well be the same, but I would argue that we need focus on the fundamentals.
- Second, are we clear about just what an ecosystem is? Can we be sure we are all talking about the same thing?
- Third, we should be much clearer about what **causes** decline, and what are the **effects** of decline? For example, the decline in Victoria's biodiversity is indeed a problem, but it is but an indicator of another more fundamental problem; a fundamental problem in how we manage the entire system. No point in trying to rearrange or repair an indicator if the causes are still powering away in the background.

3. Why ecosystems are worth worrying about

OK, what is an ecosystem? Wikipedia helps:

.....a community of living organisms **in conjunction with** (my emphasis) the nonliving components of their environment, interacting as a system.....intimately linked together through nutrient cycles, energy flows and water cycles. The overall geography and structure of an ecosystem is controlled by factors such as climate, parent material and topography, with other factors such as, vegetative cover, types of species present, decomposition, root competition, shading, disturbance, and succession, controlling its behavior.....

Ecosystems provide services. Not just for the housing and sustenance of flora and fauna, but pretty well for all activities on the planet. If we are to survive as a self-sustaining planet, then we need a pervasive system of healthy and robust ecosystems. Perhaps this effective complexity listed above makes it a hard to measure health and robustness, but we clearly need a metric to do it if ecosystems are essential for healthy futures.

The concept of **ecosystem services** was developed in the 1970's. It is a way of evaluating our reliance on ecosystems. When the services are conceptualised and listed, it makes for potent realisation. There are so many services provided that they have to be grouped. The current grouping is:

- regulating services (eg carbon sequestration, waste decomposition and regulation),
- provisioning services (eg food, genetic resources, water purity)
- cultural services (eg recreation, arts, science): and
- supporting services (eg nutrient cycling, habitat provision, pollination).

Species diversity is a presumably a cultural service, but it requires all the other services to

operate well to be properly realised and supported. Hence its developing paucity is a useful indicator of ecosystem decline.

But, the paucity of species diversity is but one indicator of ecosystem decline. Let's not overlook all the others

4. Premises

- The rampant loss of species is an indicator of ecosystem decline which in most cases is due to inappropriate or mono-focused management
- Ecosystems are foundational as they provide services which are essential to life on earth
- Every component of land has its own particular capacity to provide **ecosystem services**. A significant proportion of this capacity is required to maintain habitat and land health (primary services) and then the remaining (surplus?) capacity is then potentially available for a range of human enterprises (secondary services). There is a technique termed land capability assessment which works to reconcile production with protection for specific units of land.
- Ecologically **sustainable** uses are those which do not consume primary ecosystem services. If land is used such that the primary ecosystem services are consumed or compromised then health (and sustainability) declines.
- The quantity of ecosystem services available will depend on the ecosystem. It is not possible to provide levels as a simple representation, although they will closely relate to our integrated understanding of land quality. Seasonal variation compounds the issue. Climatic variation adds a new dimension entirely.
- The **sustainable harvest** of particular goods and services will thus be directly related to the availability of surplus ecosystem service capacity (ie that over and above that required for basic ecosystem activity). Health is lost if harvest (and its associated management) removes goods and services required for basic ecosystem activity
- Management of land (which is a mosaic of ecosystems) has to be very clear about the provisioning and the utilisation of ecosystem services. Economic and social decisions must be based on sustainability. Sustainability can only be determined by understanding ecosystem services.

5. Conclusions (in relation to TOR's)

TOR a) *the extent of the decline of Victoria's biodiversity and the likely impact on people, particularly First Peoples, and ecosystems, if more is not done to address this, including consideration of climate change impacts;*

The decline in Victoria's biodiversity will have an impact on the presentation of the ecosystem but rather it is the manipulation and poorly thought through change in ecosystem services which will have the damaging effect on biodiversity. Clearly our society is bad at managing ecosystems for sustainability. And we are a long way from turning this around.

TOR b) *the adequacy of the legislative framework protecting Victoria's environment, including grasslands, forests and the marine and coastal environment, and native species;* I consider the framework not so bad (ie *F&G Guarantee Act, C&LP Act, EPA Act, Water Act, EPA Act*). But we are bad at putting them to use to meet their stated purpose.

TOR c) *the adequacy and effectiveness of government programs and funding protecting and restoring Victoria's ecosystems;*

Knowledge of ecosystems and their services is limited, implementation of the legislative framework is poorly considered and rarely encouraged, and short term economic development eclipses all this ecosystem stuff .

TOR d) *legislative, policy, program, governance and funding solutions to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts;*

The solutions really need to be built-up from the fact that the triple bottom line is not a consortium of equals. Social and economic outcomes are dependent on the “environment”. Or in other words, Ecosystem services carry the economy and society. The triple bottom line to date has been not much more than a sop to the environment, while giving preference to so-called economic development. Anthropomorphism needs to focus on broad-based sustainability, not self-centered reactivity,

TOR e) *opportunities to restore Victoria’s environment while upholding First Peoples’ connection to country, and increasing and diversifying employment opportunities in Victoria;*

Given our poor record in keeping our ecosystems healthy, and inability to halt the decline in species diversity, perhaps it is time for a new approach.

Along the way the decision was made that the management of the capital asset of land (and thus all the associated ecosystems) should best be carried out (predominantly) under the “free market” system. Thus all the responsibilities of keeping the ecosystems healthy was thus transferred to private property owners. But at the same time, the owners had to make a living from the ecosystems they “owned” (?). So lots of public goods had to be funded from private income.

It is time to seriously consider a way of funding ecosystem services (other than via food production and agriculture) to recognize their under-realised value. Connection to country is a useful starting point

TOR f) *any other related matters.*

Rehabilitation of ecosystems cannot be achieved without a serious attempt at rehabilitation of economic and social systems.

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