

SUBMISSION

CONSULTATION PAPER REVIEW

RE: SUGGESTED IMPROVEMENTS to FLORA & FAUNA GUARANTEE ACT 1988

Initial Commentary:

The Minister the Hon. Lily D'Ambrose MP, Government agency personnel, scientists involved and all private contributors, including Traditional Owners are to be congratulated in the research, compilation and effort made to create a comprehensive document that details the timely changes now urgently needed to improve the FFG Act 1988. The potential improvements described throughout the Review reflect the intensive and extensive amount of objective research and carefully weighted arguments put into its considerations to provide better biodiversity protection within existing remaining habitats and functioning ecosystems. In particular, consultation with the NOUS Group, VEAC (*Statewide Assessment of Public Land Draft Proposals Paper*, especially Appendix 12, Ecosystem services provided by public land in Victoria, pp. 155-159), the Australian Network of Environmental Defender's Office (reports), VAGO (audits) and DELWP agencies, as listed, amongst other contributors to the Review, gives a very wide appraisal of the problems and aids suggested improvements to be considered. Importantly, the democratic principles of consulting, engaging with the public are deeply appreciated. I therefore endorse the suggested improvements as 'moving in the right directions', and note many positive Respondents Submission comments (pp 31-39 of FFG Review). However, there are a number of concerns requiring attention, most of which I allude to that involve our local **Nelson** environs situation/s.

Impacts/Areas of Concern:

1. **OFFSETS:** Any proposed legislation formulated to include aspects of **rent seeking** (investment, industrial expansion, conurbanisation spread) through Offsets needs further consideration in context of Ecological Economics, Environmental Management and Conservation Biology studies. Offsets cannot, at least under present prescriptions, create a successful 'net gain' in biodiversity characters. Each habitat has evolved to its unique epigenetic environmental biotic diverseness which reflects seral selection pressures. Micro and macro organisms evolve in response to the conditions of their surrounds, each exhibiting co-efficient traits distinct to each habitat. '**Gain Scoring**' for Offset sites where it considers site scale threats as adequate has limited application because of considerable knowledge gaps in ecologically scoring at a landscape scale. Offsets have to be of a comparable vegetation- and fauna-associated community species, and in the same region expressing environmental symbiotic relationships A '**stacks on the mill**' process will invariably create a 'net loss' because of disassociation, unravelling and disturbance to the existing biota network within the recipient habitat. A Noah's Ark approach, of stacking Offsets on Offsets, as has occurred in NSW's Hunter Valley (Green Offsets Strategy) by which to allow miners and farmers to seek and purchase land with which to compensate biodiversity loss, including endangered species, has increased the loss of invaluable habitat. Land being rezoned into urban development is exempted from the NSW Native Vegetation Act. For Victoria, maintaining a 'no (further) net loss' policy is paramount to accepting losses which are perpetuating the continuing cascade of environmental degradation and allowing furthering habitat fragmentation: **Net Gain must be a practicing recovery policy!** I note the FFG Review's 'Definitions and Guidance' regarding the suggested determinations of 'suitable Offsets' and estimations of 'habitat quality'.

Neither will a **Habitat Hectare Assessment**, based on the 'same vegetation type' **EVC benchmarks**, despite being a very useful guide for estimating loss from clearing native vegetation, accurately depict a given habitat's total organisms. **Edaphics**, the studying of soil conditions and its relationships with soil-dependent microbial organisms and the roles implicated are still at a basic stage of scientific (**edaphology**) study. **Offsets cannot adequately protect sub-soil biotic components**- at least not yet. [See: Bisset et al (2016). 'Introducing BASE – The Biomes of Aust. Soil Environments soil microbiology diversity database. *Gigascience* 5:21' and Prober, SM et al. (2015). 'Climate-adjusted provenancing: a strategy for climate-resilient ecological restoration'. *Frontiers in Ecology and Evolution*, 3:6]

Evolutionary biology which examines evolutionary processes, should be integrated into conservation management, "will be critical to biodiversity conservation in a time of global environmental change." New advances in molecular biology make genetic analysis more rapid, and "Environmental decision making needs to better integrate with evolutionary biology to create enduring solutions." (See: *Decision Point online*, #98, 2016, ANU). It would seem that the **Precautionary Principle** needs to be applied in consideration of human expansion when and where it occurs (with its competitive, consumerist behaviours) at the expense of degrading through polluting, depleting or removing essential, non-replaceable natural resources.

2. **POPULATION PRESSURES and INDUSTRIAL GROWTH:** The **NOUS** Group's May 2014 report "**The Future Economy Project: The Economic impact of Diminishing Natural Capital in Victoria**" explicitly states that 'Victoria's economy and natural environment are inextricably connected.' (PP.11-15), with Victoria having a 'high quality but diminishing natural capital', (pp. 16,17). This report also states that 'Biodiversity: successfully maintaining and managing biodiversity is important to economic development' (pp.21,22). **Demographics**, therefore needs to be given more in-depth focus in this FFG review, with consideration of just how and where (and when!) the human population expansion and associated infrastructures, have impacts on protecting sensitive environmental assets (some with finite limits), knowing that irreversibility of depletion, extinction of biota is final, and that many changes cannot be assessed yet due to a lag period before adverse repercussions might emerge in the years ahead.

The latest **Victorian Auditor-General's two audit reviews (March 2017)**, 'Managing Victoria's Planning System for Land Use and Development' (Victorian Planning Provisions) and 'Effectiveness of the Environmental Statement Process' clearly identify the difficulties in balancing planning and development "for meeting the changing needs of the growing Victorian population", averaging 100,000 increase per year. "The effects of development on the environment are critical considerations..." Population increase and development demands upon the environment can only intensify into the future.

'The State of the Environment Report' recently released, states a continued decline since the previous 2011 Report, with prospects of more Threatened species being added to the list, with habitat loss the biggest threat.

3. **EDUCATION:** Urgent curricula requirement throughout primary to post-tertiary levels based on **ecological literacy as a stand-alone subject** (not tacked on to environmental sciences). Also the need for emphasis on literacy in clear, analytical thinking to enable rational approaches to information, are needed to clarify and make better administration decisions when it comes to dealing with environmental issues, especially at government administrative levels. Another beneficial study that would involve understanding human behaviour is in **Sociology**, necessary to increase co-operation in working relations when dealing with environmental issues between agencies, and between agencies and communities.

There should be three legs supporting sustainable human activity and welfare on this finite planet: **literacy in numeracy, language literacy and ecological literacy.**

Also, Integration of **evolutionary biology** into environmental policy and management has proved challenging and often lags behind ecology studies. (Sam Banks, ANU, 2016), but needs to be done if climate resilience and adaptability of biota can be determined and consequently, are able to implement better management policies.

Further, the pluralistic nature of the **study of Ecological Economics** is paramount in evaluating environmental resources. (See: The International Society for Ecological Economics (**ISEE and local ANZSEE**) in its research agendas for **developing ecologically sustainable economics**. Shires and Councils needing to invest in natural capital would have a greater appreciation involving valuating public (and political) policy decisions regarding beneficial conservation measures and understanding ecosystem functions, in their regions.

Most Victorian **universities have Schools on Ecology**, Environmental Biology, etc., but there will be a need to encourage more student numbers to graduate in all the scientific fields required to speed up researching ecological factors involved in understanding and managing a changing environment impacting on ecosystems and habitats. Many jobs for environmental graduates are absorbed into consultancies, with numbers employed by corporate bodies such as in the mining industry. For improvements to strengthen the amended F&FG Act, more ecologically literate graduates will need to be employed, as independents, in government agencies such as PV, GHCMA, DELWP, EPA, VAGO and VEAC etc..

Commodification of knowledge under copyrights, where fees, passwords are required, is a considerable impediment to further learning by laity e.g., keying out plant taxonomic details to determine species without resorting to MEL Herbarium.

Education systems have entered the virtual world, relating to the IT environment as separate from the natural environment. **Psychologist, Sherry Turkle**, in one of her TED talks, titled '*Connected, but alone?*' addressed the issues which have separated human connections, disconnecting physical engagement between students, how they relate to each other in real time with their class peers, in preference for the intimacy of texting on their digital phones. It also defines human disconnection in response to being once connected to the natural world, with the need to reaffirm those values that include the human presence in appreciating the limitations to living sustainability and harmoniously on a finite planet. There used to be Nature Study talks first thing every morning after arriving at primary school. Some schools may have reintroduced this grounding process of 'getting back to Nature'. The processes by and through which young people are re-connected to the environment is essential in the educational curricula, if the average child who grows into the average adult, has any awareness of effectively managing their lives within a changing environment and in an increasingly hostile, restless world.

TV's 'Hot seat' program confirms many people, predominantly younger folk, have barely even fundamental environmentally-related knowledge. Some of these youngsters will enter the public service, with ignorance (about living in the environment) underscoring whatever other IT skills they may have.

Community education informing about local, regional ecosystems and habitats is crucial toward informing local people of environmental conditions, problems or restoration measures required. Parks Victoria has not held any public events to educate or inform locals about their environs for over a decade; it is important to have public-invite functions to encourage why environmental protections

are necessary. The recent Ramsar nomination process for the Long Swamp and Glenelg Estuary was a vivid demonstration in which local ignorance caused greater expense and delays in achieving needed results (Refer to: GHCMA). Public meetings are helpful but limited because sectors of the population don't bother to attend, so a new approach, which may engage these folk (e.g. talks on fishing, fish-tagging water quality, boat-rules etc.) need to be made by government agencies at least once annually. Admittedly, several meetings in the recent past have been held, but some local mind-sets are hard to change and a lot more 'learning' skills need to engage these community folk and give them opportunity to participate in say, fish counts, with some small rewards given in recognition of their services. Additionally, some local farmers and elderly residents are not computer literate, but often have legitimate complaints which CMA and DELWP could assist in helping to overcome the anti-environment sentiments that are held as popularized, cultural baggage. Workshops, mail-outs, pubs, Men's' Sheds, etc. as venues for public meetings - all are opportunities for educating those anti-environment locals ignorant of how ecosystems function and why it is important they engage to protect local habitats. Nelson Coastcare Inc. strives to inform and engage community members about important environmental-social issues affecting the local region.

Communities need greater government agency (and Shire) support in enabling increased capacity-building of local environmental knowledge with which to tackle these environmental issues. For example:

a): MEL Herbarium charges fees for plant identification: Local communities, not always having a local botanist to refer to, are not able to financially afford numbers of plants requiring identification.

b): Nelson Coastcare is producing a Weed Map app, a software program, supported by the Glenelg Shire Environmental Officer [REDACTED]. Luckily, we have a local botanist to identify and voucher vascular plant species, singling out weeds or newly emerging potential weed species, but other areas may have to depend on MEL for ID purposes. It is suggested that MEL be approached by DEWLP to waive or considerably reduce fees for community groups who are involved in creating their own Weed Map apps. **Weed recognition and identification is vital!** Weed mapping is a way in which community members can meaningfully engage by which to help reduce local habitat degradation, with state-wide benefits. Community volunteers save the government millions of dollars annually, by protecting, restoring their local environments.

4. **CLIMATE CHANGE:** Adaptation to rising sea-levels, changes to habitat conditions, social unrest, need urgent appraisal. Denial, dismissal or ignoring more extreme weather changes, and the underlying causes needs all governments to tackle what has needlessly become a vexatious issue. At last, the Victorian Government is heedful of the problems involved, but is at risk at being hammered into becoming a pariah by other political party's intentions on protecting their political self-vested interests and ideologies. **Habitat141** needs rejuvenating, as does the **National Corridor System**, both allowed to lapse because of political ignorance through prevailing economic ideologies (and funding shortfalls) of consequences to habitat protection and restoration for protecting biodiversity's ability to evolve and not merely survive the present generation. 'Environment' and those who don't or won't support its sensible protection above 'growth and development' continue to vilify and demonise it (by politicians, particularly federal members, and some energy corporations). There are no jobs without a supporting environment supplying sustainable resources!
5. **THREATENED, RARE, ENDANGERED PLANTS:** It is recognised that protecting vulnerable plant species is essential for their survival and that they be given primary protection. However, emphasis on these runs a risk of giving a lesser status to other plants within a vegetation community. It must be realised that endangered plants may (and are, often enough) key indicators of factors that are also impacting on those communities at risk of losing endangered species e.g. Coast Wattle (*Acacia longifolia subsp.*

sophorae) overwhelming Orchid species along Discovery Bay Coastal Park. The FFG Review states that **'whole of landscape'** is a welcome criteria toward protecting species, which should give coverage of habitats at risk of being over-run with weeds or human activities. Once a species that is part of a vegetation seral sequence is removed, there results a cascade of declines or shifts within associated community species. This has been very obvious in the Nelson environs, once rich in heathland and wood-land-grassland species 50 years ago. Underlying causative problems were through inappropriate fire management practices and weed encroachment. Threatened species can only be effectively protected if their respective habitats remain intact.

6. **WEEDS:** These have become an almost insurmountable problem in the Nelson environs. New species are being detected regularly, the latest being a WoNS Asparagus (**Asparagus scandens*) and a nationally non-listed plant, Butcher's Broom, (**Ruscus aculeatus*), (available in at least two nurseries in Victoria, e.g. White House Nursery, near Daylesford). Whether climate change is a contributing factor and/or humans and birds as vectors (and receding floods along riverine areas), there is a significant surge of weed species still moving into the Nelson area. With the aid of a helpful Glenelg Shire environmental officer, [REDACTED], a **Weed Map app** is being created, led by NCC member, [REDACTED], with some astonishing results being discovered such as the above-mentioned Asparagus and Ruscus. It is recommended that **all Victorian regions adopt a Weed Map approach**, using software applications to record the species and their location details. **Landcare Action Plans** could surely undertake this project, region by region. A neighbour yesterday brought in African Feather Grass (**Cenchrus macrourus*), recently emerging on public land adjacent to his property following subsiding floods from the Glenelg River that adjoins his property, which sample he will be handing in to the Warrnambool DELWP office. Weed and Native plant apps accumulating data for F&FG plant lists could help to update vegetation changes across regional landscapes. **Action Statements** (not legally enforceable) have not been initiated in cases of Boneseed (**Chrysanthemoides monilifera*) infestations, despite DELWP being advised of e.g., one present heavily infested site along Holmes Road, off the Nelson-Portland Road, with masses of Boneseed both sides of that road (part of Cobboboonee National Park), with almost 'tree' size specimens at least 10 years or older (each year's growth produces laterals on main stem/trunk, which can be counted to estimate age).

Shire roadside slashing works are a major source of transporting weed seeds along considerable distances e.g., Onion Grass (**Asphodelus fistulosus*), Buchan Weed (**Hirschfeldia incana*). Shire operators need to be trained in when is the most suitable time to slash (definitely not at the time of flowering/seeding!). Who is responsible for such training? One of local (and disheartening) frustrations is seeing where a few minutes work by a Shire machine can wipe out hours of volunteer efforts to eradicate a weed pest.

Botanic Gardens may also inadvertently harbour sleeper weeds – presumably, lists of all species grown in civic Botanical Gardens are checked for possible weedy characteristics.

7. **FERALS:** The recent multiplication of feral animals in the Nelson region is appalling. In the past few years alone, pigs, followed by deer, goats and the usual cats, foxes and rabbits run rampant. Some locals have blamed PV for not eliminating or controlling these pests. However, lack of staff, lack of funds has been the real reason why feral numbers continue to flourish. Our NCC water-testing officer, at the Noble's Rocks Eel Creek culvert, notes sows trailing piglets in the vicinity and the destruction of wetland vegetation they leave behind. A shooting range has been applied for alongside the Long Swamp Ramsar site) (clay targeting only, it's said), and one wonders whether, in desperation, shooters be allowed to control the park's feral numbers, although, at the same time, it is rumoured, pigs and deer (the latter in particular) have been deliberately 'introduced' into the DBCP expressly to

press for 'hunting rights'. There are needed night camera stations to establish feral species and numbers, their main sites for foraging/hunting throughout, to gain more accurate statistics on feral numbers present. Traps to catch cats within Nelson environs have been largely successful, but as fast as they are eliminated, other cat's move in to take their place. [REDACTED] have raised bandicoot generations, only upon release, to have them disappear via cats (actually one caught on camera with bandicoot in mouth – See [REDACTED] [REDACTED])

The human sentiment towards idolising cats has to change, at least in rural areas. Collars with bells or warnings for birds are not sufficient. Dogs are registered and ID chipped, but not compulsorily de-sexed. Cats also need to have ID chips inserted and registered with the Shire for those animals exempted for breeding, the rest need to be de-sexed. Cat tunnels and other means to prevent cats roaming freely need to be introduced. Lamentably, despite cat-owner's awareness of a cat's role as a predator on small native mammals, birds, lizards and frogs, the cultural emotional ties of people to their moggies often over-rides caring about threatened animals facing extinction.

8. **FIRE MANAGEMENT:** Poor understanding of ecosystem functions have altered the vegetation community dynamics in the Lower Glenelg National Park through inappropriate fire hazard reduction burns. Mosaic burning patterns have ignored historical, geographical areas that have not experienced wildfire burns in centuries, (e.g. relict Mallee plant communities on LGNP east-west limestone ridge). There are at least two significant areas in the LGNP where past excessively hot burns have eliminated regeneration of e.g. Manna Gum, (*Eucalyptus viminalis*) and associated plant communities. Thus **fire management needs research on ecological data** to guide best fire management practices. Fire regimes need to recognise that different habitats require different burning operations. Protection of human assets adjacent to parks is an acknowledged priority, but fire management regimes need to adjust to different habitats.
9. **PRIVATE LAND RESPONSIBILITIES:** A difficult concept: ('stewardship' versus ownership). Private landowners need to be responsible for their land, regardless of activity. Farmers worry that weeds emerge from adjacent forests, scrublands, but often enough have no cognition that the weeds have escaped from agricultural land into forests in the first place. At the 19th CAWS Australasian Weeds Conference, Hobart, 2014, an agricultural representative in his paper stated that Furze (**Ulex europaeus*) was only of concern on agricultural land, and ignored on adjacent public land. Pine plantation owners need to be responsible for weeds e.g. wildling pines, which escape for miles into public forest lands, eventually becoming the dominant species. Gardeners often discard garden clippings into the bush or the local tip where they become weeds of concern e.g. Pampas Grass (**Cortaderia selloana* and **C. jujuba*), Boneseed (**Chrysanthemoides monolifera*). At present, Paterson'sCurse (**Echium plantagineum*) has become rampant throughout local Blue Gum plantations and adjacent Public land just east of Nelson. An owner-ownus regulation should be required where plantation tree owners need to fund and or contribute man-power for eradicating trees or weeds escaping from private into public land, and not have that cost burden placed on the public purse. Responsibility and accountability go hand-in-hand, and need to be appropriately enforced by strong penalties.
10. **ADMINISTRATION:** (a): accountability and transparency mentioned in the F&FG Review is commended. However, politically vetted government agency reports must contain the facts of research, field works etc. and not be politically aligned e.g. VAGO observation, 2014/15 annual reports by government agencies.

(b): New policing regulations need to apply equally to private land and public land. i.e., illegal clearing of native scrub, forest. Gardeners growing WoNS in their gardens need replacement species to encourage co-operation into removal of weed species. [REDACTED]

(c): How can environmental protection legislation, once accepted and passed, be made secure when another political party comes into government with different views? This needs to be seriously considered. Governments may want to 'save' money but in doing so allow weeds to freely invade. Community volunteers are extremely disheartened by seeing all their efforts to restore areas being overwhelmed by weeds. It is understood that Parks Victoria, Nelson, has not had funds to tackle weeds for at least three years.

(d) Governments are exempt from their own legislation (discretionary aspects) e.g. recent WA case involving a road through one end of a wetland. This also needs accountability and responsibility within legislation if (or whenever) economic or infrastructural needs are prioritised over that of environmental protection laws.

(e): Legislation be passed that would allow knowledgeable informed communities to take legal action to protect their regional biodiversity against private developers and government agencies when such bodies are found over-riding environmental laws or extracting 'exemptions' from the Act.

(f): Lack of funds for government agencies nullifies the Coastcare regulation for 'in kind' co-ordination requirements, resulting in Coastcare funds being refused for badly needed weed eradication projects.

(g): The requirement to access larger sums of funding by community volunteer groups such as Coastcare for tackling weeds on Public land dependent on having at least one WoNS present needs complete revision. Woody weeds such as Italian Buckthorn (**Rhamnus alaternus*), notoriously difficult to eradicate, is taking over whole landscapes around Nelson, as also is Polygala. Italian Buckthorn is not a listed nationally or by State as a noxious weed and cannot attract funds to eradicate it.

(h): Nelson is a town with a retiree population, mostly comprising over-60 year-olds, who have various ailments that restrict their ability for manual labour, such as digging out layers of Bridal Creeper's two forms (**Asparagus asparagoides*), of tuberous masses. There needs to be an exemption built into existing regulations that allow grants for contractor work in such cases where there is not a younger, fitter population able to take on manual work on a hectare scale

11. **QUARANTINE - BIOSECURITY:** Screening measures from foreign vegetable, plant species entering Australia and into Victoria are totally inadequate. Plant seeds covering nearly every plant family and genus can be easily imported though the post. Garden enthusiast specialists grow many exotic and native species at risk of weediness traits, as can be readily noted in plant list exchange groups advertised on the web, as well as nurseries even offering WoN species and other non-listed weeds e.g. Cortaderia spp .for sale. Big stores also sell weedy plants at times, sometimes through misnaming of a species, or ignorance of the weed status of the plant. There are species sold claiming they are 'infertile', i.e., a haploid cultivar e.g., Polygala 'Grandiflora'. [REDACTED]

Agriculture pasture seeds introduced for 'improved' pastures or crops without making full allowance for weediness potential (See: **Andrew Cox, White List v. Black List, in Weed Society Newsletters, 2014**) exemplifies the deficiencies in the present categorisation of managing weeds. Fossil fuel-based agricultural and horticultural practices need revision to encourage permacultural, organic forms of agriculture, likewise some Genetically Modified or engineered plants that resist herbicides can become potential weeds in both agricultural enterprises and the natural environment. As mentioned in under Offsets above, edaphology, the study of soil and changes through e.g., plant allelopathic impacts e.g. Coast Wattle (**Acacia longifolia subsp.sophorae*) and GMO altered DNA (methylation, repressing gene transcription) adversely impacting on soil invertebrates and micro-organisms, essential for evolutionary adaptation and resilience factors against environmental changes, are almost certainly undergoing climate change impacts, creating altered native plant communities and future agricultural plant diversity attribute limitations (the latter where patented monocultures (and sometimes, Plant Breeders Rights, e.g. sports, hybrids), dependent on fertilisers and pesticides derived from fossil fuels that are presently utilised). Hydrocarbon-based pesticides and fertilisers alter soil-microorganism communities; create lowered pH in soils heavily fertilised over decades (e.g., Krasznoczems in Wimmera – CSIRO research, 1970's). Ironically, cultivars of Wheat, Oats and particularly Barley, have been bred to tolerate soil changes to suit conventional farming practices, with resulting lowering of trace element uptake, including for example, lack of uptake of selenium, resulting in white muscle disease and 'Coasty Disease'. Selenium is a co-enzyme for Vitamin E to enable its function for mammal metabolism (lock and key effect).

Human cultivation and environmental management practices are losing control over the cascade of already in motion changes reducing biodiversity. Soil organisms have evolved plant communities, living in synergistic and symbiotic relationships in balance within their surrounding environmental conditions. Once interdependent webs are broken, the dynamics of plant-to-organism relations often results in a downward shift in biodiversity. This is being experienced across local and landscape sites. Efforts to retain present biodiversity in human-interfered sites presents a tremendous challenge to rectify – which is the reason why **'net gain' must be striven for 'at all costs'** – literally - and clarifies why a 'no net loss' consideration is useless to stem the already cascade sequences reducing plant community survival inter-generationally. Nelson's environs, situated adjacent south of the Lower Glenelg National Park are a living testimony of incremental, and over time, substantial loss of open woodland-grasslands, dry and wet heaths with the disappearance of once 'common' native plants – a veritable Eden to visually enjoy 40-50 years ago, that no longer exists, except in the odd repository such as at the Nelson Cemetery where there is still a comprehensive complement of the benchmark of original herbaceous plants (listed on a billboard at the cemetery's entrance).

Humans have been busy destroying the means by which evolutionary adaptations occur. It is almost a useless exercise to protect threatened species, flora or fauna, when the continuity of intact, healthy habitats and their retention of biodiversity, is no longer available. Humans effectively, have stopped the normal progression of evolution.

12. **FUNDING:** If funding is not available to carry out, manage and enforce those necessary changes to improve State EPP legislation, the recommendations for reinforcing and improving the Act will have little credibility. **Commitments to suggested improvements to the F&FG Act 1988, must be guaranteed. Funds must be available to pay wages to more on-ground, qualified ecologists and environmental managers.** The present dedicated GHMA staff need more boots on the ground; more facilitators to work with community groups and visitors; more readily available information given to Information Centres; more co-ordination, 'in kind' between government agencies and community wherever necessary, to effect remedial, restoration, weed eradication projects; more public

workshops addressing issues of impacts of climate change; more on-going data informing regulations, or changes to such – all of which requires funding. Governments are assumed to support funding, but other sources, such as crowd-funding will have to be sought if the race to save biodiversity is to succeed. One largely successful project, carried out between PV, DELWP and Nelson Coastcare Inc. is bi-annual litter day cleanups of the Estuary reaches and riparian areas, reducing pollution and entanglement of aquatic species by discarded fishing tackle.

One of the most successful projects carried out to retain water sill levels in the Long Swamp, was the research made by Nature Glenelg Trust, led by scientist Mark Bachmann and his science crew, who listed the characters necessary for nominating this area for Ramsar accreditation. Dozens of locals, with co-ordinated help from Parks Victoria, GHGMA and DELWP personnel, filled over 7,600 bags of sand to make a retaining wall to prevent the loss of water to the ocean at Noble's Rocks outlet (dug illegally in the 1980's). Although a temporary trial, it has been hugely successful (See: NGT website for details) in assuring drought-proofing of what was a dying ecosystem exacerbated by the millennial drought of 12 years. Eel Creek now performs it's at least 6000 year cycle, that of replenishing Long Swamp's wetlands from Lake Monibeong, the source of upwellings feeding Eel Creek. (See: Lesley Head's 1984 paper). Bachmann succeeded in accessing federal government funding to achieve the weir's construction, at costs far lower than any major engineering works to achieve the same result (if not better, because of minimal vegetation destruction).

Concessions for managing private land to conserve biodiversity (e.g., stewardship payments, Bush Tender, Land for Wildlife, Heritage Agreements, Trusts, etc), need funding (as incentives) to conserve the many remnants habitats still existing on private sites. The idea of a **Sustainability Report card** when land is sold, on a suggested star-rating system, has considerable commendation.

13. **FORESTS:** "Fighting over the Forests" is a saga about timber-workers and millers wanting to retain traditional values, jobs inter-generationally, without losing access to the remaining hardwood resources. Timber harvesting has to cease, if there is to retain diminishing habitats for now threatened fauna and flora. The timber workers and families need to have earlier warning that there is a finite state where 'traditional' jobs in that industry are no longer viable without government funding. These people's lives should be assisted to transition to alternative ways of living and not left for them to cope without re-education/skilling after having lost a specific income. **The media**, unfortunately, presented the recent timber worker and operator's protests outside parliament in context that these people were incensed about job losses and didn't either care, or didn't value, their natural environment. There is needed a greater sense and application of social licence to guarantee assisting these people who are on the verge of losing a traditional job, ingrained into generations as a sacrosanct culture. Culture shocks, as resources dwindle will have to be addressed if social upheaval and potential poverty is to be avoided into the future. Pro-environment attitudes are essential to cultivate, not the creation of environmental and political-sourced resentments, especially where younger generations believe they should have the same access rights as their fathers and forebears have had.
14. **TOURISM:** Is a way to educate visitors to appreciate not simply attractive landscapes and enjoyment of recreational activities, but to build understanding of how ecosystems inter-relate within the landscape and where human presence may impact on the environment from recreational activities. At Nelson, walking trails, board-walks are being considered, with the consideration of where such walks can be made without creating excess population pressure on the areas to be enjoyed. Investigation into an animal and human trafficking overpass across the busy highway passing through Nelson between Mt Gambier and Portland, is being considered as a means to link the LGNP, the Nelson State Forest with the Discovery Bay Coastal Park. Tracks increase spread of weed seeds;

camping facilities and toilet blocks create local vegetation losses, e.g., a public toilet block was built on top of a sizeable colony of Austral Ladies' Tresses (*Spiranthes sinensis*) a couple of decades ago at the Estuary Car park area – a loss of beauty no longer to be seen there. So there are pluses and losses with influxes of tourists and visitors, but managed sensibly, should create more income for this small town without desecrating the unique environment..

15. **MARINE MOLLUSC REGULATIONS:** 'Contested Spaces'. a): Pipi collectors (*Donax deltoides*) have caused localised intertidal areas to become devoid of this primary protein source for some shorebird species through over-collection, despite pipi-collecting families' strictly obeying the existing Victorian regulations on collectable quantities. Nelson Coastcare's logo is the Pied Oyster Catcher (*Haematopus longirostris*). This shorebird frequents the length of Discovery Bay and feeds mainly on bivalve molluscs, using their bills to pierce the mollusc's adductor muscles to access the Pipi meat. Oyster Catchers are wading birds frequenting the intertidal strip. Although Papis are prolific breeders, and extend their habitat range into deeper water offshore, their numbers are crashing due to people collecting them in waist-deep water (a dangerous risk to undertake on the Southern Ocean's volatile coastline) as well as in the shallows. Family members, per carload, often number 5 or 6 persons, including children, each individual allowed the regulation 5 Kgs of papis to be taken daily. Recent observations of collectors have indicated that these family groups can legally take up to 200 kilograms over a summer weekend. Some observations, although unverified, claim that some families return twice a day, apparently selecting a different location on their second visit. The positive side is that this year's March Flies (Tabanids) have been high in numbers, deterring even local fishers. The use of DEET would be required to avoid these biting pests and it would be doubtful if young children would be allowed to be exposed to them by pipi collectors. Further, the long stretches of coastline between access points to the DBCP shoreline would deter collectors having to walk long distances, weighed down by collected pipi numbers and children's limitations to walking such distances (although families do make camp on the beaches with children protected from sun and a long day). Local fishers gripe they now no longer have expected access to local accessible sites, without wading into the dangerous high energy waves breaking on-shore to get any papis for bait.

Conservation status of the Pied Oyster Catcher, federally, is considered 'secure'; NSW declares it as 'endangered', with enforcing a closed season for pipi collecting between January and March annually. South Australia has experienced similar problems, not using kilograms as a take limitation, but individual pipi numbers (quoted at 300 per person per day; pers. comm., 20/3/2017, with [REDACTED], Head Licensing Officer, Adelaide NRM); A compliance commercial allocation is capped at 440 tonnes per year per boat. Victoria may need to consider a limited season or banned zones for collecting papis, as has NSW, and/or using individual, minimal-sized, papis per person per day. The main concern is that paired Pied Oyster Catchers, who return to the same territorial sites over many years, will move on, or decline in breeding numbers. Importantly, the greater presence of fishery officers is required, especially over holiday and weekend periods, with the authority, as a public relations exercise, to educate pipi collecting visitors about the ecological implications involved in excessive, constant removal of papis (and other molluscs). The Nelson community, including the NCC, has been warned not to approach anybody collecting papis thought to be in excess of regulation limits – all the more reason for a greater fisheries presence..

16. **WATER:** ABC's Background Briefings program, broadcast 23/3/2017, 'Our most Precious Liquid...water as an essential resource for human needs' (challenging against human 'wants') was a thought-provoking panel discussion on water's importance for the natural world and human activities. Traditional Owners described how they managed this limited resource over the centuries in novel ways; others mentioned the recent successful NZ legislation conferring 'Personhood' status to the Whanganui River, giving it the same legal rights as a citizen. The NZ Te Urewera Act, 2017, is based

more on both recognising the Maori connection to the environment, but also about the “shifting assumptions about human control of the natural world” (Kathleen Calderwood). Australia, a product of neo-liberal marketing ideology, has presently allowed the encroachment of a remaining ‘commons’, water, to be owned by private corporations. In Victoria’s South-west, two companies, Mallee-Wimmera Water and Southern Rural Water ‘own’ managing water in their respective regions under their control of licensing, environmental water releases, etc.

Corporations have legal mercantile personhood status (without individual responsibilities attached). This largely protects the CEO’s, Shareholders and Corporation employees from hostile legal challenges and concomitant costs. With the Glenelg River (which already enjoys the protection of its Heritage Section where it passes through the LGNP and the Ramsar included section), it has been suggested to maintain community ownership of this precious ‘commons’ resource, that like a corporate body’s personhood rights, a ‘personhood’ status be given to its reaches (presumably not already controlled by either of the afore-mentioned water Corporations). In a world with a rapidly dwindling supply of potable water, and even less for environmental flows, increased demand for food production, extraction of groundwater and aquifers, can only worsen. Yes, the Government needs to have appropriate water regulations for priority usage, but sustainability of this essential resource needs further exploration. Australia does not want to repeat the USA’s Colorado River, a toxic trickle, still being used to e.g. irrigate lettuces for human consumption, and supply Las Vegas city. Their Ogallala Aquifer is almost depleted (although Stanford Uni has discovered deeper aquifers – but they present serious problems if accessed).

Victoria’s South-west has the Dilwyn Aquifer, containing potable water which underlays limestone horizons and overlays shale beds. It extends from South Australia across to near Warrnambool. It may be a bastion against future drought and rising sea levels impacting on ground-waters becoming saline from the sea’s increasing intrusions, as has been occurring at 8-Mile Creek, near Port MacDonnell. Protecting water resources should not be owned by private consortiums (PPP’s) or corporations, but managed under government, remaining part of the public commons, albeit being carefully managed.

Thermal imaging of Victoria’s total water resources should be a priority, so that authorities are fully informed regarding what management criteria are required for avoiding Limitations of Acceptable Change (LAC’s) to ensure maintaining of e.g. the ecological character of Ramsar Wetlands, agricultural water requirements and human needs as well as maintaining sufficient environmental flows for rivers and streams.

17. **SPIRITUAL CONSIDERATIONS:** The environment is unfortunately viewed in a solely economic resource capacity. ‘Conservationists’ are presently (at least by some federal politicians) viewed as ‘anti-Australian’, impeding ‘progress’ and ‘growth’. There have been repeated and sustained government efforts to vilify people attempting to protect the environment, demonising them to the point of threatening legislation disallowing legal redress, when protestors wish to enforce the existing laws and decrying them as criminals or ‘environmental terrorists’. Changes to the EPBS Act 2000 have been proposed to water down existing environmental legislated protections. Such is the ignorance of politicians presently running (aka ruining) this country’s environments. It must be considered to be more fortunate to be living in Victoria!

People do need to de-stress, seek solitude in being with nature. This is not simply an altruistic expression to be dismissed off-hand. Nelson is a place that offers tranquillity and solitude. Its landscape values and several diverse ecosystems offer a variety of experiences, such as walking trails,

fishing, naturalists and scientists, educational and artists, to enjoy. At the same time, a recent focus has been an emphasis on preserving “places you love”, concentrating on appealing emotively to people to contribute adding voices to persuade them to value their landscapes. This is ok to a point: but the ecological reasons are either being ignored, are unknown or believed not acceptable to the prevailing protection paradigm being pushed by the undoubtedly well-meaning authors. It would appear that even certain ‘greenies’ need educating in ecological literacy!

Those of Nelson’s volunteers attempting to create (restore) environmental attributes are incensed to be regarded as obstructionists to the industrialisation of the rural sector e.g. against what would be disastrous results from fracking if it had been allowed to go ahead in our gas-rich area (See: results of Geoscience Australia’s research survey of Nelson area, c. 2013).

The notion that High Environmental Value Aquatic Ecosystems (HEVAE’s) would be trashed for short-term monetary gains indicates a massive **market failure** of the present economic policies in ignoring the ledger debits incurred from reduced natural resources. Such destructive economics calls into question whether it is not sufficient to merely tighten F&FG regulations against environmental misdemeanours, but to create a criminal status for certain environmentally destructive offences of magnitude.

Our European theology and thought has developed around the notion, as Cicero argued, “that humankind can contemplate the world and discern order and purpose within it”. As Dr Paul Collins observes in his book *‘God’s Earth – Religion as if matter really mattered’* (1995 edition) in talking about the Bible, Christianity and Ecology, Cicero’s views are highly anthropocentric, he believing the world was created “primarily for those that have the use of reason” (which we must severely question today regarding ‘reason’ in context of what is regarded as a truism of a ‘developmental mentality’ that permeates beyond all reason!

I thank the Review Team for the opportunity to bring Nelson’s environmental problems, as a partial Case Study, to attention in context of the Consultation Paper’s purpose to examine drivers and evolving regulations needed to strengthen the F&FG Act 1988. Preventing the further loss of biodiversity and making every effort to recover the jigsaw components that repair and restore is a project we all must ethically and morally take responsibility for, and endeavour to achieve.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 3292.

25/3/2017