[redacted]

From: Craig Castree [redacted]
Sent: Tuesday, 25 August 2020 4:38 PM
To: ecosystems
Subject: Submission
Attachments: submission for victorian government's extinction inquiry craigcastree.v2docx.docx

Categories: Submissions

Dear Committee,

My name is Craig Castree of [redacted] Vic, I am a qualified horticulturist with over 40 years' experience, including teaching horticulture at the Gordon TAFE. I have been President of the Werribee Park Heritage Orchard for the past 5 years, and have volunteered restoring Heritage Orchard for the past 11 years. I authored Edible Gardens: A practical guide, and am Owner Operator of Edible Gardens, my own business in which I teach people to become self-sufficient on an urban block of land. I am frequently called upon by Wyndham City Council to run workshops on sustainability in the local community.

I have attached copy of my submission to the committee for comment and consideration, I have no objection to it being made public and in fact would prefer it highlighting my concerns expressed within it. I look forward to your repy.

Regards Craig Castree.

Edible Gardens by Craig Castree
Backyard Farming is the future.
[redacted]

Please consider the environment before printing this.

Dear Committee Members,

Thank you for the opportunity to make a submission to the Victorian Parliament's Inquiry into ecosystem decline in Victoria.

A little about me. I am a qualified horticulturist with over 40 years' experience, including teaching horticulture at the Gordon TAFE. I have been President of the Werribee Park Heritage Orchard for the past 5 years, and have volunteered restoring Heritage Orchard for the past 11 years. I authored *Edible Gardens: A practical guide*, and am Owner Operator of Edible Gardens, my own business in which I teach people to become self-sufficient on an urban block of land. I am frequently called upon by Wyndham City Council to run workshops on sustainability in the local community.

I am extremely concerned about the state of the environment, especially ecosystem decline, and many aspects of our modern Australian culture and way of life that contribute to this decline. Although I have many concerns, I will limit this submission to my area of expertise: sustainable gardening, with an emphasis on edible gardens.

Sustainability in home design

Housing and the homes we live in have a major impact on our environment, both generally, with consequences such as climate change; and more locally, with local ecosystem decline. I live within Wyndham, one of the fastest growing areas of Melbourne. Many new housing estates and developments are getting built in this area, with accompanying impacts. I am pleased that the building industry is now requiring energy star rated homes; the starting point was with an energy 6 star rated home. To get the house to a 6 star status the building has to comply with the 6 Star Standard in the *National Construction Code*. The code relates to specific items, materials, and systems put in place to reduce the carbon footprint our houses leave behind, and to help bring the industry more in line with being environmentally sustainable. In addition to this true costs savings are a primary target to the consumer having reduced consumption and reliance in relation to the non-renewable resources.

In the not so distant future we will live in homes that are commonplace 7 & 8 star energy rated where mandatory building ratings could see the following as common place:

- houses becoming almost self-sufficient for water
- houses producing as much or more electricity than they consume
- elimination of air conditioners - the main appliances causing peak power load on hot summer days
- use of highly energy and water efficient appliances (washing machines, fridges etc)
- onsite food production like Aquaponics and edible gardens.

Display homes have a major role to play in leading the public to want to design and buy sustainable homes. For years in Victoria, these homes have set the trend for what people chose to do in their own homes. If a new home buyer wants to look at colours, tiles, carpets, kitchens, plans inside and out, display homes are where they come to see the best and newest most innovative ideas that are on offer. Hence having display homes that are as sustainable as possible is core to a population of people who choose to implement these changes in their own homes.

Both mandatory energy star ratings and display home exemplars should greatly reduce carbon emissions associated with domestic housing, reducing Australia's overall carbon emissions. However, commendable though this code is, it doesn't go nearly far enough and is not enough for noticeable mitigation of climate change and impacts on natural ecosystems.

Some of the problems with home and garden design

Despite these sustainability standards, new Estates are frequently "heat islands." The code omits the consideration of garden design, nor does it require passive climate control features to be included in the home. Good garden and external home design can mitigate the heat island impact of new estates. Houses in these new Estates are being built intensely close together maximising both house size and the subdivision of land which means that houses, with minimal spaces in between, stay warmer for longer whilst the sun is out. Many homes do not have eaves, a passive climate control feature that cools the house. The majority of homes have concrete roofs, usually black – heat attractors. In most new estates, houses are not shaded by trees or a tree canopy, so they are hit by the full heat of the sun, turning the house beneath into an oven. The homes, being packed so close together, are not able to cool off at night and radiate heat into their neighbourhoods, increasing the minimum overnight temperatures. Poor garden design is commonplace, and this also exacerbates the extreme heat. The trends of using pebbles as mulch and artificial turf add to the ambient heat by reflecting it back, rather than absorbing it like natural environments do. Add to this the lack of shade or tree canopies and green space and the use of desert loving plants instead of plants that cool the environment: the temperature will rise even more. Such gardens are low maintenance, but they increase the average temperatures and reduce even further habitat for animals and exacerbate ecosystem collapse.

Many display homes are setting the trends of artificial turf, river stones and desert plants; many people in my local area are using them in their yards. When I travel into new estates elsewhere in Victoria, I also see many homes with river stones and plastic grass. It's a wonder, just quietly, there are any pebbles left in our rivers. Lack of trees and all the

artificial gardens are not conducive to birds or animals surviving in these artificial and hot environments. They're also not conducive to public health.

Addressing design problems

A star rating system for gardens

My own investigations have led me to believe that we need a similar energy star rated system for gardens that we require the builders to provide on their homes. We need to identify aspects of garden design that support ecosystems, passively control temperature and clean the air. Gardens are very important for energy consumption and health, not just inside the house. To adapt the energy star rating system to include garden design should be a simple exercise.

What does a five - star garden look like?

Over the last five years, government and councils have focused on growing healthy communities. Parks and gardens are an essential part of these objectives. A five star garden would include:

- Edible plants: vegetables, herbs, dwarf fruit trees (3.6m tall)
- Indigenous shrubs, flowers and trees.
- Mixed plantings of edible food and other plants – no separation of edibles from ornamental plants.
- Biodegradable mulch – no river pebbles
- Natural ground covers – no artificial turf
- No desert plants unless they're indigenous to the area.
- Enough trees to form a canopy

Explanations and rationale for the above requirements

- Dwarf fruit trees are not invasive so don't disrupt pipes or foundations. Many indigenous trees (e.g. Callistemon in the West of Melbourne) are also non-invasive.
- A tree canopy is essential to cool the ground surrounding the house, and to help control ambient temperatures. Trees can reduce average temperatures by tens of degrees centigrade.
- It is more important than even that people have access to fresh, wholesome food. Most people have poor success with vegetable plots and beds because they are generally in the full sun. Most vegetables do better in and around and under shrubs, small trees or in garden beds. These give the perfect aspect for them and they generally thrive, allowing the owner to pick fresh produce as they require it. It also protects them from pests.
- Use of indigenous plants generally results in more success and lower maintenance once the plants are established. They frequently self-propagate

- Avoiding use of river pebbles protects our wider natural environment and avoids reflected heat.
- Plastic turf is an environmental nightmare. The turf itself reflects and amplifies heat, instead of absorbing it as does a natural lawn. In addition, it is even more unnecessary plastic in our environment and damages, even kills off microorganisms in the soil underneath. In addition, it is not pleasant or safe to play on. Children who fall on it cut or graze themselves, and plastic chemicals pollute the air. Children with such gardens have no easy access to the natural environment, so important for child development. Use of natural ground covers and biodegradable mulch are both inviting and safe for active play.
- Desert plants may be low maintenance but they do not cool the air, as other plants do. And they are not suitable habitats for local birds and animals.
- Gardens full of fruit and vegetables and real plants are much more inviting, more comfortable and healthier environments than artificial gardens, both for animals and for the residents. They keep the residents more active and the weeds down. Real gardens lead to much cooler estates in which residents can thrive and local ecosystems have a chance to survive or re-establish themselves. Easy access to nature, provided by real gardens (i.e. real plants, real earth) allows the residents interact with their natural environment more, and learn to love the feel of earth between their fingers, the smell of a wet garden, growing their own food, love and look after our native animals and gardens and gardening inspire us to learn more.
- Genuine gardens, which people tend and care for and are proud of, lead to a closer more connected community as well as supporting ecosystems. People who grow their own food or establish indigenous gardens seem to socialise more and love to talk about what they are growing. People passing by neighbours who are gardening often stop for a chat and talk about what the gardener is doing. Neighbours who garden are frequently intrigued and swap ideas, seedlings etc. And they love to talk about whether they're planting to attract insects, birds or animals, and the success they've had or not. This is an organic way to spread the word about the importance of looking after our natural environment and to inspire others to do likewise.

Presently many people face many constraints that prevent them from having a healthy garden that promotes a healthy life and supports our natural environment. The development of a rating system should remove many of those constraints. Requiring minimum standards for gardens, and including these within a star rating system is a win-win-win situation. If implemented well, likely outcomes would be cooler estates, reducing the impact on climate change; more habitat for animals; preservation of indigenous species that are frequently endangered; a healthier and happier community that knows each other and cares about nature. A star rating system for gardens could have a remarkable impact.

Implementation

1. Change the policy on display homes so that they need to have gardens with sustainable design. Display homes set the trends – they are built on estates first and others are likely to follow these trends.
2. Trial the system in new estates first to establish effectiveness and iron out glitches.
3. Once proven to encourage uptake of low energy and ecofriendly garden design, roll out the requirement of the star rating on gardens over the rest of the estates that have existing covenants relating to fencing and gardens.

The order a ratings system is rolled out – display homes first – is essential for a cultural shift towards ecofriendly gardens and a recognition that nature is an important part of home. Display homes and their gardens set trends. If major builders adopt a star rated garden code, and apply it to display homes, this will help ensure the 'me too' gardeners, smaller builders and others who look to the bigger builders for trends, will also adapt and create gardens that support, and don't destroy, both natural ecosystems and the mental and physical wellbeing of their occupants.
I believe builders will understand the good business sense of aiming for more stars in garden design to give them the competitive edge. There is so much room to move with the star rating system if you adopt the allocation of points to get to 5 stars, as is the case currently with dwellings.

In short, I ask you to consider implementing a star rating system for sustainable garden design that promotes both the natural environment and strongly encourages growing one's own fresh food. The government should aim to:

- establish an energy star-rating system to incorporate gardens into current home star-ratings for energy use.
- demonstrate the savings made to consumers/councils/governments.
- demonstrate the energy savings for the environment in terms of carbon/methane/landfill.
- educate construction companies/home builders on landscaping techniques on how to implement an energy star-rating in their designs and landscaping practices.
- educate home-buyers, landlords and tenants on these techniques.
- legislate the energy garden star ratings, incorporating the ideas set out by Nationwide House Energy Rating Scheme on www.nathers.gov.au.

I am willing to be contacted to discuss these measures further.

Right now, I know the Victorian Government is grappling with COVID-19. Unfortunately, however, the threats to our environment have not gone away because of

COVID-19. We all depend on a healthy world for our own health and happiness, and that means we need to be able to tackle the health crisis of COVID-19, while also protecting and restoring Victoria's ecosystems, that our animals, plants, people and communities depend on.

I look forward to seeing strong action to protect and restore Victoria's environment as a result of the work of this committee.

Craig Castree
Horticulturalist