



NEWSLETTER

Horticultural Therapy Association of Victoria Inc.

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Note from the President

The Conference we ran in October was received well by delegates and we have had some very positive feedback. There were many interesting speakers from various modalities –including aged-care, mental health, disability, homeless, etc. Participants also came from all over Victoria and other parts of Australia, with one presenter from Singapore.

There was a great deal of interest in the presentation given by Dr Greg Moore, one of our keynote speakers which was titled 'Climate Change, Healthy Gardens and Healthy People'. Consequently Greg's summary has been transcribed in this Newsletter. Elspeth Brock also gave a very informative talk on her experience with Permaculture in Morocco and has provided us with a summary of her presentation for publication.

We also held our Annual General Meeting in November and were very pleased to welcome several new members onto the Committee. Hopefully this should bring about a lot of fresh ideas and more assistance and growth of the Association.

I would like to wish you all a healthy, happy and safe holiday season and a happy and fruitful 2011.

Paul de la Motte

**Seasons Greetings and
Happy New Year**



Therapeutic Gardening Short Course

Sat & Sun, 26-27th February 2011
Holmesglen Institute, Glen Waverley

Enquiries:

Tel: (03) 9564 1546

Email: shortcourses@holmesglen.edu.au

Website:

http://www.holmesglen.edu.au/programs/short_courses/lifestyle_and_environment/therapeutic_gardening

Drought Tolerant Therapeutic Plants

By Paul de la Motte

Common Name: Nasturtiums (not to be confused with the genus Nasturtium which includes watercress and other similar plants)

Botanical Name: Tropaeolum majus
(Various Hybrids)

Family: Tropaeolaceae

The Nasturtium is a must for any therapeutic or Sensory garden, mainly for colour and the textural characteristics of the leaves.

Native to South and Central America they are a surprisingly tough trailing perennial with bright orange, yellow, cream to deep burgundy coloured flowers. Nasturtiums flower continuously mainly from late winter through to Autumn, particularly if spent blooms are regularly removed.

Some hybrids have variegated leaves for even more variety in the garden.



They are ideal for rockeries, border plants, draped over retaining walls and make great hanging baskets.

Nasturtiums are easy to grow, preferably in a full sun position but will tolerate some light shade. They spread into large clumps usually not getting much higher than 500mm. They can become invasive but are easily controlled.

They have characteristic round and finely haired leaves with a slightly convex shape. The leaves are attached at the centre of the leaf and are edible, although slightly spicy. The flowers are also very popular used in salads.

Nasturtiums produce large seeds up to 1 cm wide that can be easily propagated.

They are used also as a valuable companion plant as they can help repel a range of pests particularly around many vegetables.

Overall a bright and useful plant in any garden

Climate Change, Healthy Gardens and Healthy People

By Dr Gregory M Moore

University of Melbourne, Burnley Campus,
500 Yarra Boulevard, Richmond, 3121

Summary of paper delivered at HTAV Conference, 29 October 2010

INTRODUCTION:

It is a great pity that so many of our citizens think of our parks, gardens, streetscapes and urban landscapes only in terms of their aesthetics. While they are beautiful and decorative, these attributes often mask the many functions that they serve in our cities to the point where their economic and environmental benefits are often overlooked. Such benefits will be even more important as Australia faces significant weather changes due to global climate change (Table 1)

Table 1: Likely outcomes from climate related changes in south eastern Australia.

Generally warmer winters and hotter summers
A more tropical climate extending southward
More easterly winds leading to summer storms
More frequent major storm events
More days of extreme fire risk weather
More bushfire prone regions, extending to peri-urban parts of major cities
Changed weather and fire patterns
Fewer frosts, and in some places elimination of frosts completely
Many more days above 30C and double the number of days above 35c
Higher summer rainfall with more intense rainfall events
Flooding of lowland coastal areas – probably minor
For every one degree temperatures rise, the snowline rises 100m
Agricultural productivity will change, in some cases improving
Some crops will not be grown but others become viable
Housing and building construction processes will change
Energy demands and patterns of use will alter

Urban landscapes and trees have been wonderfully silent assets in our cities for decades and even centuries. They are major urban infrastructure assets. Cities are biodiversity hot spots due to the variety of habitats available in public and private open space, including front and back yards. However as assets we may need to expend resources – labour, energy, and even water - on their proper management. During the dry period of the last decade I have often heard it said that; “There are better things to use the water on than plants and gardens” I challenge you to name them. What else delivers so many benefits immediately, benefits that last centuries into the future, which prolong healthy lives and make cities both sustainable and livable?

At a time of climate change, it is worrying that both private and public open spaces are threatened by urban renewal and development that puts at risk long term sustainability (Moore 2009). In many of these situations there is insufficient open space - public or private - for the planting of large trees and so the opportunities for the role of vegetation in ameliorating the heat island effect, reducing wind speed, providing shade and reducing energy use are reduced. This outcome raises questions about the economic viability of such developments, as well as their long term environmental sustainability.

THE MANY BENEFITS OF URBAN TREES AND LANDSCAPES:

There is real economic value in the shade provided by trees that drop temperatures by up to 8°C. They can reduce air conditioner use by 12-15% which also decreases the carbon emissions from our largely brown coal generated electricity and reduces the water used in electricity generation (Table 2). While it is more difficult to place a value on reduced wind speeds of up to 10% due to the presence of vegetation, we do know that under climate change winds will be stronger and that Victoria has suffered the effects of three major wind storm events over the past few years.

Urban vegetation also has significance in removing atmospheric pollutants where in New York in 1994 it was calculated that the city's vegetation provided US\$10million of benefit in pollution removal. The planting of 11 million trees in the Los Angeles basin saves US\$50million per annum on air conditioning bills. The presence of shady trees can increase the useful life of asphalt pavement by at least 30%, which can be of considerable value in the hot climate of Australia, where asphalt degrades quite rapidly.

Little scientific research work has been done in Australia on these benefits from vegetation and there is even less economic data to inform decisions. Sadly there are few similar studies for Australian cities, but in the only study of its kind, economists noted that an Adelaide street tree provides a minimum annual benefit of \$200 per year and that it was a gross under-estimate of the real value. The value returned to the City of Melbourne by its approximately 70 thousand public trees alone it would be more than \$14 million per annum. Other studies show a cost/benefit ratio of 1 to 6 in favour of urban trees and landscapes.

There is also the role of trees and public open space under a changed climate in holding and absorbing water during intense rainfall events. Such a role has profound implications for the behaviour of storm water systems in cities. What is their value in reducing localized flooding? The economic value of reducing localized flooding could be substantial.

What will happen in suburbs, which occur in all major cities, where housing development has been so intense that there is no capacity to plant trees on house blocks, and where streets are so narrow that street trees that have been planted will not be able to mature as they will inevitably restrict emergency vehicle access. If we lose our urban trees and landscapes because we don't think they are worthy of some of our resources we could pay a very high price indeed. We won't know what we have lost till it's gone.

Table 2. Estimates of various environmental economic values for 100,000 large mature urban trees growing in an Australian city (modified from Moore 2009)

Parameter	Value per tree	Quantity	Unit Price AUD\$	Value AUD\$	Reference
Carbon sequestered in trees	12.5 tonne	1.25 million tonne	\$20 per t	\$25 million	Moore 2009
Street Tree value	\$ AUD 200per annum			\$20 million per annum	Killicoat et al 2002
Electricity saving	30KWh	3 million kWh	\$0.17 per kWh	\$510,000 per annum	Fisher 2007
Carbon emissions saved	1.2Kg for each kWh	3,600 tonne	\$20 per t	\$72,000 per annum	Moore

Water saving from electricity generation	30 kWh per tree at 100L per kWh	300 mill L	\$1.50 per kilolitre	\$45000	Moore
Prolonged life of bitumen footpaths	\$450 per m ² for life of 20 years	2.5 million m ² of shade provided	\$225 per m ² for an extended life of 50% (10 years)	\$562.5 million or \$56.25 million per annum for each of the 10years	Moore

Notes on estimations and calculations:

- the estimate of 12.5 tonne is for a large mature urban tree
- the price of AUD\$20 per tonne is based on the Australian carbon market price
- the electricity saving is based on reduced energy use due to shade from trees
- the price used for electricity is based on a rounded Victorian rate per kWh
- value of prolonged bitumen is based on an extended life from 20 to 30 years
- 100L of water is used to generate each kWh by brown coal powered generators
- water valued at \$1.50 per kilolitre
- assumes tree canopy of 75m² shading bitumen covering 30% of its canopy area

I could go on for pages about the benefits of urban trees and landscapes. I haven't even mentioned how gardens improve human health, extend life spans, reduce violence and vandalism, lower blood pressure and save society a fortune on medical and social infrastructure costs. Recent studies (Tapper 2010) have suggested that the wise use of water and vegetated urban landscapes can reduce excess deaths during heat waves such as those experienced in Melbourne in the summer of 2008-9 (Table 3). Parts of cities such as the western suburbs of Melbourne are hotter as they are drier and less well vegetated, and it is in these suburbs that excess deaths of people over 65 years of age will be greatest. So how we use water within and manage urban landscapes really is a matter of life on death.

Table 3: Heatwave related deaths in urban climates.

Heat and human mortality (modified from Tapper, 2010)	
Definition of heatwave (No formal definition)	BoM: "prolonged period of excessive heat" Largest cause of death from a natural event It is a passive threat
Examples	Most famous large event – Europe 2003 Up to 35000 excess deaths Indicative of what might happen with climate change
Where deaths occur	Natural & built landscapes affect heat loads Demographic, health and socio-economic status influence outcomes In Melbourne greatest number of deaths in the western and northern suburbs 374 excess deaths (Jan26-Feb 1 2009) 66% of such deaths in 75+ age group

Natural turf is quite a complex ecosystem and has a significant effect on temperature and the heat island effect, and if properly managed also sequesters a considerable amount of carbon. Perhaps it is not the villain that many think when they consider only the water component of a more complex equation. Isn't it lucky that as we let all the turf in our parks and ovals die that we don't have a problem with kids lacking

exercise and becoming obese. If we did, we might be paying an even higher price for the loss of public and private space than we ever dreamed possible.

Melbourne is one of Victoria's biodiversity hot spots. The parks, gardens, streets and front and backyards provide a very diverse range of plant species that generate a myriad of habitats and niches for wildlife. High density urban developments and inner city renewal make it virtually impossible to grow trees in places that were once green and leafy. We rarely ever see the real costs of such developments in terms of their environmental costs and long term sustainability.

CONCLUSION:

In the past decade tree populations in many Australian cities have declined, particularly with the loss of private open space. While costs, and the damage and nuisance values attributed to trees are widely known, the benefits they provide are often subtle and under-appreciated. Urban vegetation provides economic and ecological services to society. They are assets which warrant the expenditure of resources such as labour, energy and water. Such expenditure is not wasted as trees and urban landscapes provide far more economically and ecologically than they use. In any comprehensive and fair calculation urban trees and landscapes are worth more than they cost.

The future role of trees in the urban landscape, and indeed of public and private open space are being redefined by those who have little interest or expertise in urban vegetation management and are driven by other imperatives. It is time to address some of these issues before changes are made that degrade the landscape, and which could take decades to remedy. This is the century of the environment and the economic value of urban trees and vegetation will rise, simply because they provide more than they cost. As a truly Australian urban landscape, which values trees and recognizes aridity and changed climate, emerges, it will be understood that urban trees and landscapes are worth much more than they cost and that they are the keys to urban sustainability.

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Horticultural Therapy Awareness Week 20 - 27th March, 2011

Being in a garden is therapeutically beneficial.

Organise an activity and let us know, so we can promote your event on our website.

Permaculture as a Model for Community Development

- A case study in Morocco

By Elspeth Brock

Summary of paper delivered at HTAV Conference, 29 October 2010

Abstract: The permaculture design certificate (PDC) is run internationally as a means of education and community development. It is often in rural areas and small villages where the funds paid by international students subsidise locals' places. This gives people the experience of permaculture as it relates to both landscape and human systems. As what makes a healthy ecosystem is often similar to what makes a healthy community- such as diversity and interconnectedness. A loss of connection to nature threatens the health of human systems as a whole. This paper looks at a case study of Morocco and how permaculture design systems can contribute to healthy communities sustainable environmentally and culturally.

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What is permaculture?

Permanent culture -

An integrated sustainable design system, that aims to mimic natural patterns and energy flows, to work in cooperation, not domination of nature.

This talk will focus more on the community building, maintaining connections to nature as it relates to therapeutic horticulture. The health of a community is of course related to the health of a landscape.

The Moroccan people have a long culture of living harmoniously with the landscape. Arts and architecture based on sacred geometry, which uses the same patterns, and ratios found in nature. The colonisation of the French interrupted many traditional practices which some say caused present land degradation.

Central to the idea of Permaculture is not to force function but let something be useful to the whole within its nature eg, making water flow straight when it naturally curves, forcing chickens to produce more and more eggs. When function is forced, systems collapse. Traditional practices have a sense of this, of working in harmony.

It also relates to human systems, allowing people to have distinct personalities, abilities, disabilities and find a way they can fit into the whole in a beneficial way. Therapeutic horticulture and community gardens often provide inclusive places for all people. We could say for many of us living in an environment devoid of nature is forcing function and so, nature deficient in children, mental illness is developing.

Permaculture begins with ethics-

- Earth Care
- People Care
- Return of surplus

These are useful guidelines for any community project.

Al garage village is made up mostly of Berber people whose ancestors predate the arrival of the Arabs. They maintain distinct languages and traditional practices while also practicing Islam.

Strengths (of landscape and human systems)

- Diversity- wild flowers amongst wheat, food plants and animals- cows, ducks, chickens, dog, turkey, donkey. Systems that are small scale with a high diversity
- Ability to adapt and be resourceful- not such over protective safety laws coupled with low incomes, mean people fix things when broken and seem to see any problem as an opportunity for creativity- a skill that westerners are often lacking.
- Strong interconnections and multi function- strong social and family bonds, things have multiple use- traditional Moroccan couches are flat and wide for sleeping and of course the ever useful donkey.

Challenges faced in villages include:

- View that everything modern is good, “people use plastic bags as there is a view that they are clean”, cheap synthetic goods from china and fast inappropriate housing all contributing to lowering of living standards and increased waste.
- Environmental problems- erosion, small holdings, monoculture cash crops, aridity.
- Cities- lack of nature, young people moving from the country to the city to earn more money and the lure of an ‘easier life’. When asked if he wanted to stay on the farm or go to the city Hasan said he would say if there was water, “its better for my head here (on the farm).” Similar issues face many refugees in Australia who from rural areas to live in high raise apartments. The majority of the world’s population is also for the first time now found in cities.
- Lack of access to education- children miss out on school, as they have to go and fetch water for their families. Water is a big issue- easier access to water, means an easier life.

Permaculture Landscape Solutions

- More considered landscape design, re-instate and extend traditional practices. Using human intelligence to enhance natural systems e.g. honey is very expensive, plant more bee forage, drought tolerant shrubs- rosemary lavender, maintain terraces.
- Appropriate development- eg building- consider aspect, climate, materials. For example in north of Morocco they train grape vines for shade up to 3 stories.
- Use what you have- develop on site water harvesting systems, roof rain water harvesting, swales, gabions etc

Permaculture and Community

- Maintain cultural strength. Assist youth to have a more dynamic future- if you can’t go to the world comes to you! If they see international students are interested in their traditional practices they may continue to value them.
- Promote culturally sensitive tourism and a sharing of traditional knowledge and skills, and permaculture methods- for environmental and cultural sustainability. International students experience local hospitality, skills and hardships first hand, such as the long walk for water.

Community Development Lessons

- Permaculture is about landscape design and community development- **Earth care and people care**
- Initiative for change needs to come from within, group must engage in the processes of development- use local **patterns**
- The importance of intimately knowing the culture, such as how people make decisions and why individual people may act a certain way- not to have **forced function** in groups.

Drawing on strengths and finding creative solutions, Permaculture is an adaptive, dynamic way of designing landscapes and human systems.