



From The President

Welcome to our October 2021 HortInsights, packed with great stories featuring the achievement and insights of our members.

Our organisation works tirelessly in fostering the voices and knowledge of our members who cover a diverse mix of horticultural expertise.

Our members have the perfect platform in this online magazine to highlight their works and expertise and we encourage you to submit your articles.

We hope your year is going well and wish you all the best in the lead up to the Christmas period.

Take care and know that your organisation is here to help and support you through these tough times.

Kind regards,

Michael Casey MAIH RH
National President
Australian Institute of Horticulture

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Left: Diatomaceous earth. Image/ SprocketRocket, CCO, via Wikimedia Commons. Right: Aphids. Image/ Jacopo Werther, CC BY-SA 4.0, via Wikimedia Commons.

Diatomaceous Earth

By Daniel Fuller

If you're looking for a broad-spectrum insecticide that is residual but non-toxic, you might want to give diatomaceous earth (or D.E. for short) a go. It's a white powdery substance made of the fossilised remains of aquatic crustaceans called diatoms.

When dry, the tiny particles are extremely sharp and are able to pierce an insect's exoskeleton, and its desiccant properties mean that it draws moisture out of their bodies which is why it's so effective at killing insects.

Sprinkle some D.E. powder on the leaves to kill leaf-sucking and chewing insects, and it will be effective as long as it's dry. When it's wet, it becomes completely ineffective at cutting or absorbing moisture.

Another method of application is to spray the leaves with some powder dissolved in water; after the water evaporates, the leaves are left with a coating of the dried powder.



Potato plant with diatomaceous earth. Image/ Minerva's Garden Blog.

Once you're ready to stop the effects of D.E., you can simply spray the leaves down with a hose while being mindful of where the residue ends up. Obviously, anywhere that the powder dries out will be a harmful surface for insects.

Although silica is abundant on earth, it's rarely in a form that plants can absorb. It's a non-essential nutrient for plants that can provide a range of benefits, including increased photosynthesis, longer roots, and increased yield.

It can also help plants defend against biotic pests and diseases as well as abiotic stressors such as drought.

D.E. is a valuable source of plant-available silica that can be applied wet to the leaves and the roots with the aid of a watering can.

People with chickens will often use the powder in bedding because it keeps mites and insects away. It's also been known to be used on mattresses that are infected with bed bugs, and the scalps of people suffering from head lice.

It's a great natural non-selective pesticide that will kill most insects indiscriminately, so be warned that it will kill pollinating and predatory beneficial insects that come into contact with it as well.

It doesn't harm worms and snails due to their slimy coating, although they don't seem to like crawling over the dry powder.

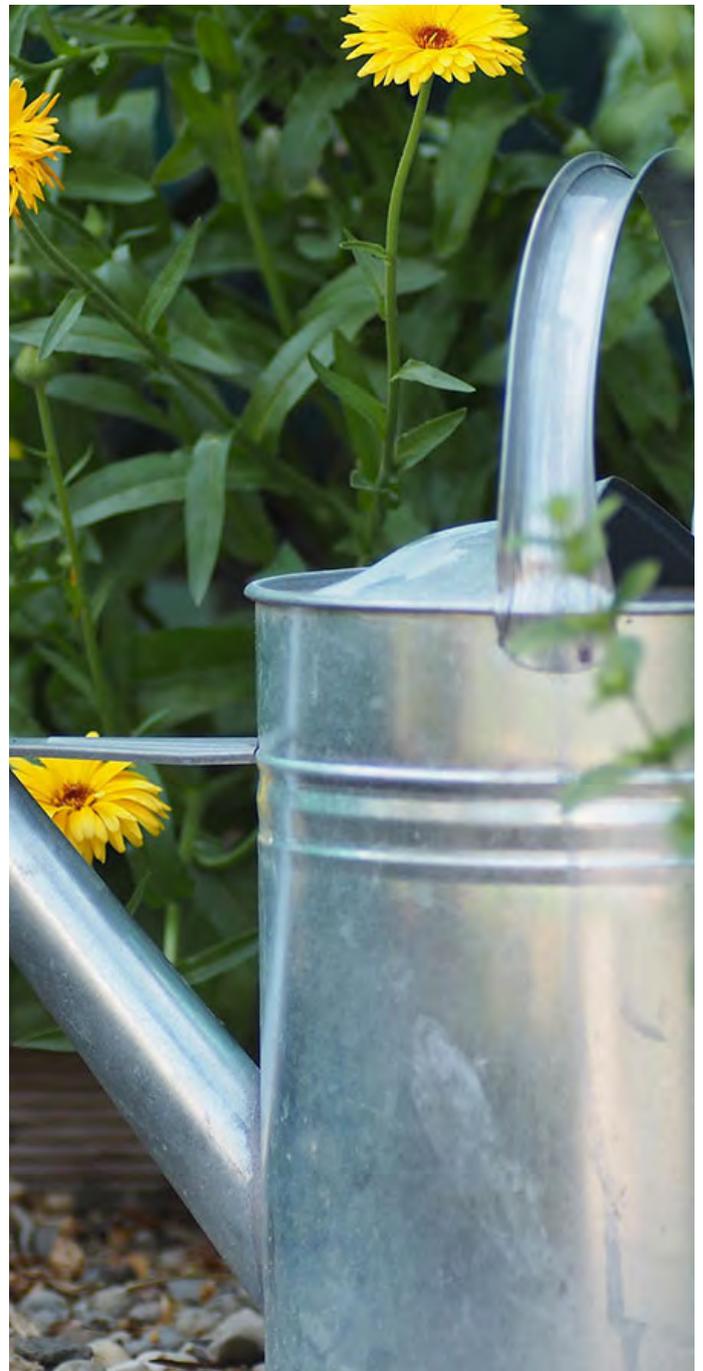
The same properties that work against insects work on a much smaller scale in human and animal lungs. D.E. is not as damaging to our lungs as other hazardous materials, but just try to avoid breathing it in as much as possible.

Its absorbent and porous qualities mean that it can be used in potting mixtures, but keep in mind that as long as it's wet it won't be effective as a pesticide. Biogenic amorphous silica is another silica-based soil additive that is actually marketed to use as to amend soils or to include as part of a potting mix.

Although food-grade D.E. is non-toxic, keep in mind that plants need to photosynthesize so coating their leaves isn't necessarily going to be a great long-term solution.

D.E. isn't a magic bullet. It's just another tool in your Integrated Pest Management (IPM) toolbox that you can use when you need to knock a pest population on the head.

You'll still need to employ other genetic, cultural, physical, and biological control methods as well.





Re-Vegetation or Ecological Restoration

By Patrick Regnault FAIH RH, Images/ Patrick Regnault

As we become more environmentally conscious, individuals or communities in rural or regional areas may wish to re-vegetate part of their land to improve the local biodiversity.

To be of full benefit the planting has to serve the local fauna, be a future seed bank for the local flora, and increase soil health.

Consider sourcing plant materials from different origin sites to increase the genetic potential of plant reproduction.

Increasing genetic diversity has potential impacts beyond the original planting site. Dispersion by wind or animals has the potential to improve the genetic diversity in the general area.

The planting density has its importance and that will depend on your location and the type of habitat that is being created.

There are no fast rules. The best way is to look at similar vegetation types and take note of the density and the range of species.

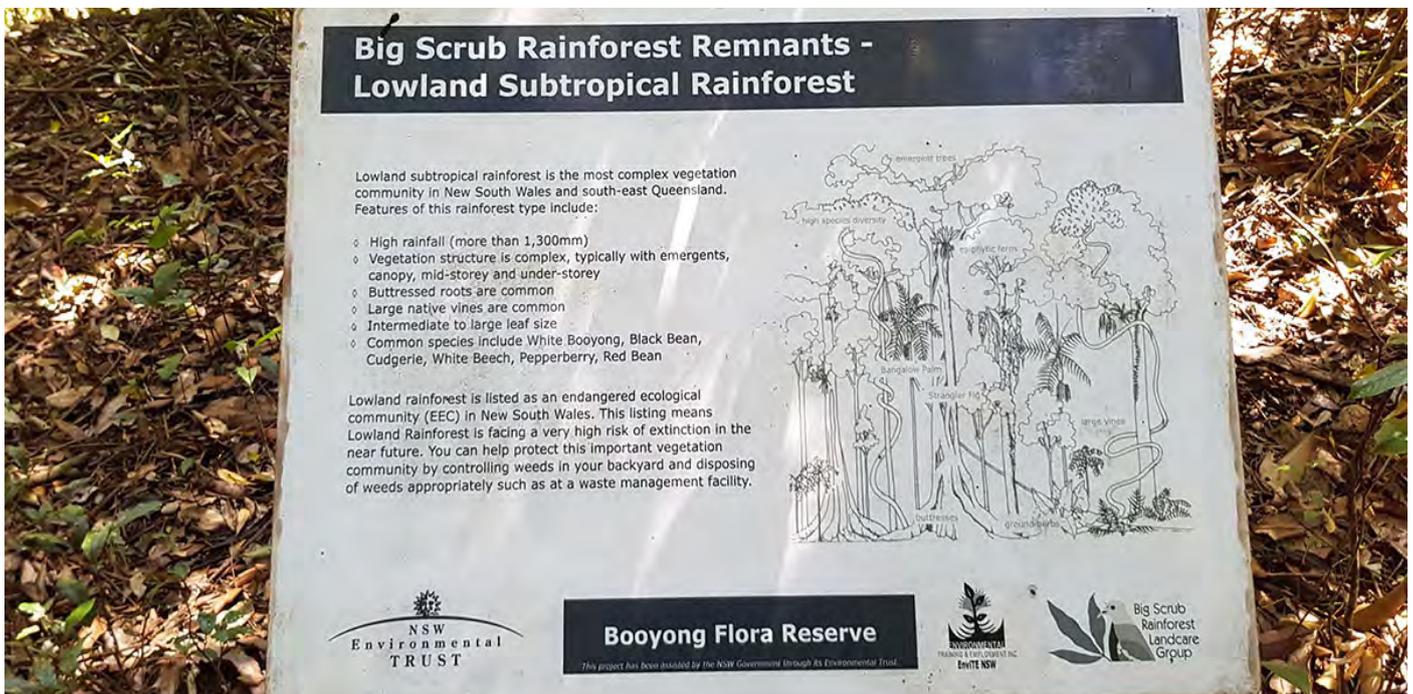
By observing the connection between species we can develop a heightened understanding of how biodiversity works.

A planting that serves biodiversity requires the designer to understand the diverse roles plants play in the intricate web of lifeforms. The number of plant families is as important as the number of plant species.

Plant families have their specificity, flower shapes and seeds and a particular relationship with soil bacteria and fungi. Some families have a fleshy fruit that attract particular birds or mammals, others have a hard casing which require stronger jaws or beak.

Those differences are what bring a larger range of animal species to the re-vegetated area and will lead to further plant dispersal.





This panel shows the diversity and complex vegetation strata of a lowland rainforest. When planting habitat we have to consider the layering of vegetation to increase the chance of successful increase in biodiversity.

Choosing a few key representatives of different families will help replicate the natural ecosystem. This extends the palette to include a diversity of plants forms and habits which creates the layers that will suit a variety of animal species.

The planting has to be adapted to the soil, topography and micro-climate, which in turn may restrict or expand the range of plant selection one can use.

Diseases can be family specific. Myrtle Rust is an example of an introduced pathogen which affects the family Myrtaceae.

By having a greater range of plant families represented in a planting, it is possible to mitigate plant specific pathogen diseases and increase overall biodiversity.



Myrtle Rust on a Lilly Pilly. Image/ SmallBiologie via Wikimedia Commons

Generalist viruses may be brought in and cause problems even in the most varied plantings. However by using a variety of plant families we can mitigate the potential of diseases that can develop when we only use a limited number of families in re-vegetation work.

In Eastern Australia coastal heathland the most common plant families are Proteaceae, Myrtaceae, Fabaceae, Ericaceae, Restionaceae and Cyperaceae.

These 6 families are species rich and can happily form the bulk of re-vegetation. Of course further species of other plant families can be added.

If the re-vegetation is using mainly Melaleuca, Babingtonia, Banksia Leptospermum and Hakea the representation of plant families shrinks dramatically. Even if it looks diverse the richness above and below ground will have been greatly reduced.

The importance of plant – animal interactions needs to be considered if we want to successfully improve biodiversity into the future.

The most effective ecological restoration happens when we design to benefit the greatest number of living species and provide stepping stones for the development of ecological communities.

Patrick Regnault FAIH RH is a Fellow of the institute and National Councillor.



Image Credit/ Neuroscience News

Facing Up To Dracula's Real Intentions

By David Thompson, Engagement Manager Australian Institute of Horticulture

Do you see faces in everyday objects? Our brains are heavily-oriented towards seeing patterns and shapes that help us make sense of our environment and the world around us.

Pareidolia is the term for the way we see faces in inanimate objects – like the famous face on Mars or smiling bark patterns in trees that look like a face.

Researchers have found that our brains respond to perceived face shapes in objects in much the same way as we respond to real faces – assigning the same emotions and social cues as smiles, fear, surprise or warmth.

In the world of plants, some are much more strategic about patterns and mimicry in the pursuit of their goals – typically successful reproduction.

Many plants have evolved physical and other sensory cues that enhance their ability to survive and thrive in their unique environments.

In some cases these evolutionary features also bring delight or surprise in people, and to that end they could make interesting and novel landscape features to add a dimension of emotion to your landscape.



Image Credit/ Reddit



Monkey Face Orchid. Image Credit/ Luis Baquero licensed under CC BY-NC-ND 2.0

Take the Monkey Face Orchid, for example – delightfully named *Dracula simia*, this beautiful orchid looks, to our brains, like the face of a cheeky monkey.

The modified petals, known as the labellum, resemble the monkey's mouth and make it a stunning and distinctive talking point.

However, there's more to this flower. On closer inspection, the labellum also looks a bit like the gills of a mushroom.

Researchers at the University of Oregon wanted to better understand why this orchid might resemble a mushroom when they found the orchid was frequented by tiny fruit flies that also like to eat fungi from mushrooms.

By using special 3D-printed copies of the flowers with and without scent and differing colours, the researchers established that the

orchid has evolved to attract these tiny flies who mistake the distinctive mushroomy smell of the labellum for fungal food sources and carry pollen between the plants.

It's just one of many forms of biomimicry in action and more reasons to find creative joy in growing unique and distinctive plants that capture our emotions as well as offer functions to pollinators and biodiversity.

The research was published in *New Phytologist* in 2016: Policha, T., Davis, A., Barnadas, M., Dentinger, B.T.M., Raguso, R.A. and Roy, B.A. (2016). Disentangling visual and olfactory signals in mushroom-mimicking *Dracula* orchids using realistic three-dimensional printed flowers. *New Phytologist*, [online] 210(3), pp.1058–1071. Available at: <https://nph.onlinelibrary.wiley.com/doi/pdf/10.1111/nph.13855>.

Paliame Palisah MAIH

Environment and Conservation Biologist



Paliame Palisah recently joined us at the Australian Institute of Horticulture as she studies at Macquarie University and expands her knowledge of conservation biology. Growing up in a passionate family of plantspeople and nature-lovers, Paliame has grand visions to take the best of horticultural excellence back to her native Papua New Guinea with inspiration from Australian horticulture. Paliame shares her inspiring story with us in this edition’s Member Spotlight:

I grew up in a home where my mother and sisters loved to grow plants and do gardening around the family home, and because of this I grew up loving dirt, plants, animals, and nature!

As I grew older, I decided to pursue a career in Environmental Science and understand more about plants and animals, and the web of life.

In 2012 I began my undergraduate double degree in Environmental Science and Biology at the Pacific Adventist University and graduated in 2015.

I was so excited to start my journey in the real world and very interested in biodiversity

conservation and environmental protection in my country.

With this passion and determination, I decided to begin my journey by volunteering at Port Moresby Nature Park, which is in the Nation’s Capital City, Port Moresby in Papua New Guinea (PNG).

Port Moresby Nature Park is PNG’s leading recreational Park with 30 acres of tropical gardens and home to 350 native animals and hundreds of native and exotic plant species.

The Nature Park is managed by expatriates from Australia, Michelle McGeorge, and partner Brett Smith.



Image/ Celebrating International Women’s Day at the Park, Ms McGeorge-CEO (front row, first on the left) and Ms Palisah (front row, second on the left next to Ms McGeorge).

Ms McGeorge was impressed with my work ethic and offered me two internships to take for three months each.

I completed the first Wildlife Officer internship and continued with the second internship in Horticulture. For both internships the Park organized for Australian Volunteers who are experts in their fields to train myself and 19 of my colleagues.

Shelomi Doyle taught us Horticultural techniques, and Geoff Underwood taught us about handling wild animals in exhibits. It was a great experience for me personally and professionally.

Professionally I learnt techniques for caring for both plants and animals, as well as how to lead a team in my field. I personally came to find my passion and grew more love for plants and landscape gardening.



Image/ Wildlife Officer internship with my colleagues, holding a Papuan Olive Python (Ms Palisah: Fourth from the right)



Image/ During my Horticultural Internship with my colleagues and Trainer Shelomi Doyle. (Ms Palisah: centre back - the one with glasses).

I successfully completed both internships and was offered to choose between working with plants or animals, and I chose to work with the Nursery and Grounds Department as a Plant Nursery Supervisor for about four years from July 2016 to November 2019.

Some of my main responsibilities included supervising and coordinating the following:

- upkeep of the park lawns, the gardens, and playgrounds.
- internal (e.g., gardens and animal exhibits) and external landscaping projects (corporate clients such as academic institutions, hotels, and others).
- indoor pot plants sale and hire contracts.
- plant production and sale to corporate clients.
- composting facility (was also the Chair for the Sustainability Committee at the Park).
- writing content and presenting gardening segments on PNG national television show 'Haus & Home' with EMTV.
- maintaining the orchid nursery; and
- conducting basic horticulture training for staff and disadvantaged youth.

As I gained more experience and exposure while working and serving corporate clients during landscaping projects in and around Port Moresby, I realised there is great potential for horticulture in Papua New Guinea, especially in ornamental horticulture

Port Moresby is a growing city, with many new buildings and developments requiring landscaping. My clients were mostly real estate owners, property managers, engineers, landscape architects or architects.

When I received a plant order/schedule, first I scheduled a meeting with them to confirm plant species, quantity, quality, measurements, and alternative plants species if their request is not available.

The interesting part of my job is to go out and source plants around Port Moresby City.

I travelled to mostly informal floral markets in different suburbs and engaged with local suppliers (retailers and growers) from different ethnicities and backgrounds and made some friends as well along the way.

What I learnt from this journey is that there is a need for a proper Floral Market, in combination with structure and good governance, for the



Image/ Brett Smith (curator) presented the Horticultural Internship certificate to Ms Palisah.



Image/ This is Ms Palisah in one of the major projects she coordinated to supply plants and maintain plant care on site for Star Mountain Project- The Hilton Hotel in Port Moresby, Papua New Guinea.

potential of an ornamental horticulture industry in Papua New Guinea.

In this way both the clients and the supplier (or the consumer and the producer) thrive in not only in doing business but by integrating the principles of socio-ecological sustainability through education and engaging effectively with both local communities and their clients either, as individuals or corporate.



Image/ This is Cohort 5 of the Australia Awards Women's Leadership Initiative in Canberra (Ms Palisah: In the yellow dress, second row from left). This Leadership program and the Australia Award Scholarship has moulded me to be a confident female leader in my field and I am grateful for the Australian Government and a few people who have one way or another, pushed me towards my vision.

So, with this vision for impact in mind, I decided to apply for the Australia Award Scholarship in 2019 to further my studies and at the same time explore the horticulture industry in Australia.

Australia is a more developed country, and Papua New Guinea looks up to Australia as a 'big brother' in respect to our colonial ties.

My aim was to come to Australia and be motivated and inspired, build networks, and engaging in conversations in horticulture, plant conservation and sustainable urban planning, and return home to implement what I learned.

I was successful in my application to study here in Australia in January 2020, so here I am studying my Master in Conservation Biology at Macquarie University, and this is my last semester.

I am looking forward to gaining as much knowledge, skill, and networking as possible before returning home (PNG) to develop the future of the ornamental horticulture industry.

This is my journey in horticulture, and I am ecstatic to be a member of this Institute. I look forward to meeting some of you during our webinars, learning and unlearning from this group and am open to share my experience, knowledge and perspectives!

Paliame Deborah Palisah MAIH is an Australia Award Scholar and master's student at Macquarie University, and a member of the Australian Institute of Horticulture. Images: Port Moresby Nature Park, Paliame Deborah Palisah and Australia Awards Women's Leadership Initiative. LinkedIn: <https://www.linkedin.com/in/paliame-deborah-palisah-469022b3>. Visit Port Moresby Nature Park <https://www.portmoresbynaturepark.org/>



Dreaming of Summer Days in Central Park, New York

By David Thompson, Engagement Manager Australian Institute of Horticulture

Our Destination: Horticulture series is all about travel and horticulture dreams, of places we want to visit in our lifetime. Every article is a chance to plan and dream that perfect horticultural trip.

Of course, Central Park is one of the world's best known travel destinations, widely featured in movies and sitcoms as characters develop under the trees and New York's famous skyline.

Managing the huge estate and its stunning gardens is the work of the Central Park Conservancy, tasked with managing the sweeping 843-acre (341 ha) landscapes of the parklands.

Mostly funded through public donation, more than 300 staff curate, clean, plant and attend the gardens for the visiting pleasure of millions of visitors in a normal year.





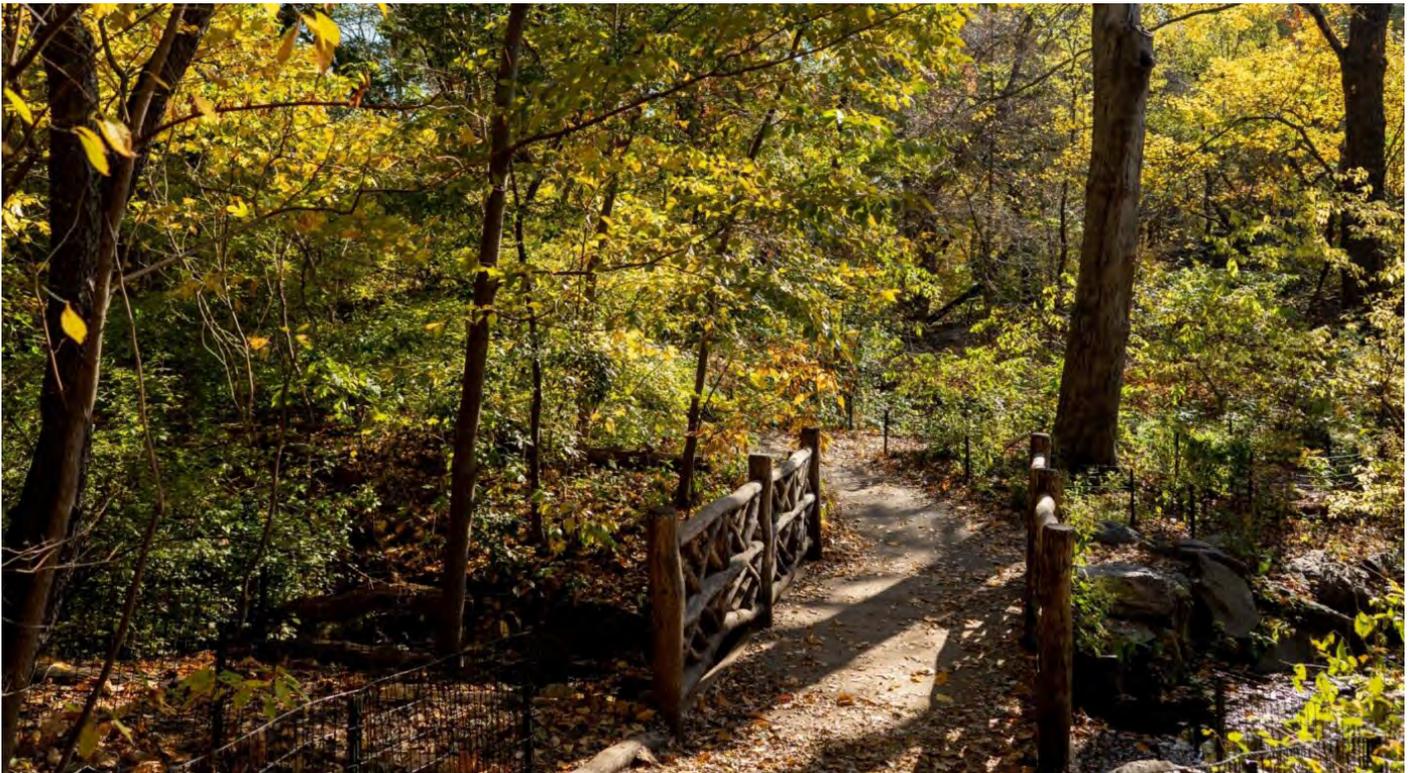
Lush trees and foliage stand against the backdrop of New York's iconic skyline. Research has shown that the gardens of Central Park provide cooling and shade that offsets the urban heat island effect of a warming city.



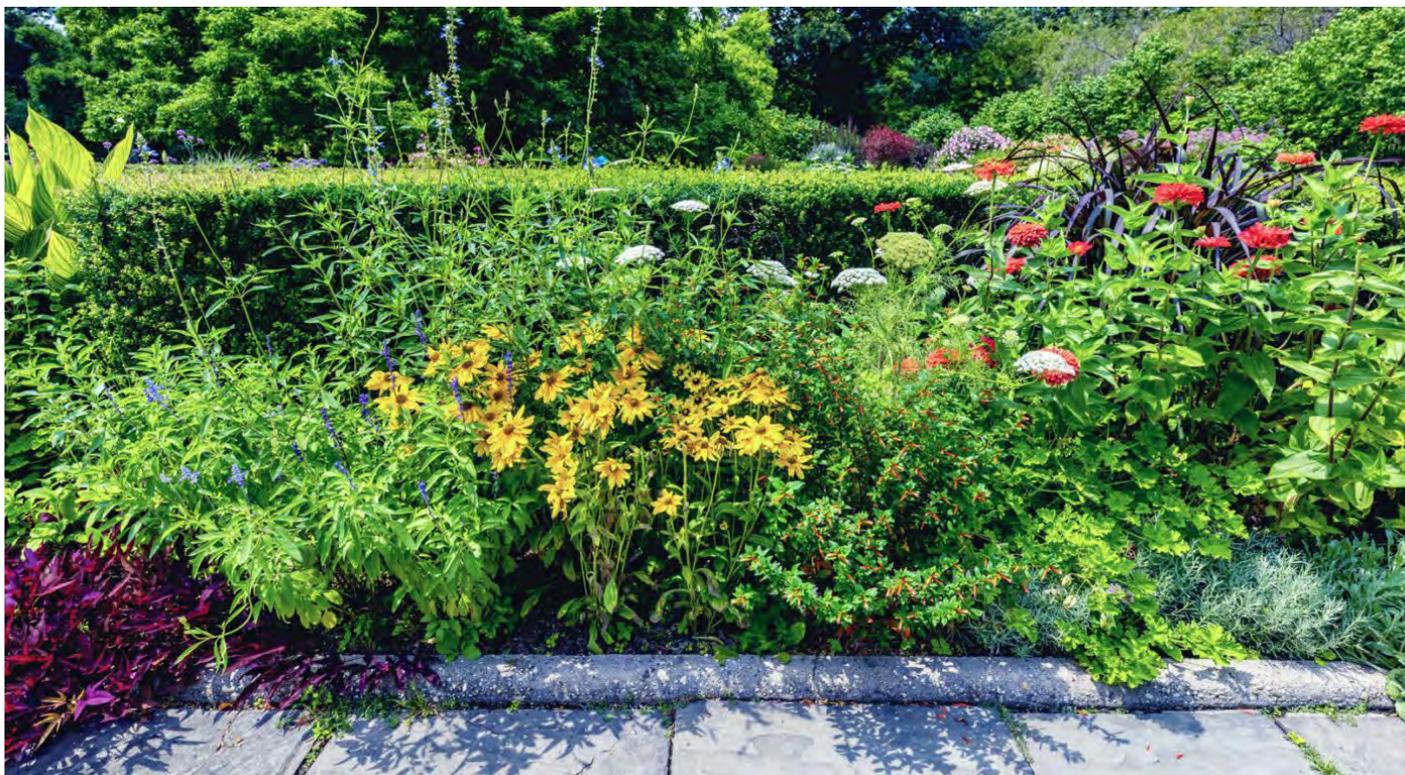
The Hershhead outcrop is part of remnant rock features that were left during the park's construction in 1843. The designers, Frederick Law Olmsted and Calvert Vaux, considered the rocks' shapes to resemble a heron's head. The cast-iron Ladies Pavilion sits under the leafy green trees as a shady vista for looking out on the lake.



The Mall and Literary Walk is possibly the most famous boulevard in the world, flanked by rows of American Elms. The trees' canopies have arched over the promenade, like the roof of a horticultural cathedral.



Over 36 acres, The Ramble captures the American woodland experience across the seasons. Hard to believe this is in the middle of one of the world's busiest cities!



The Conservatory Gardens are the formally-planted sections of the park, six-acres of gardens composed of three areas, each with a distinct design: the French-style North Garden, the Italianate Center Garden, and the English-style South Garden.

Visit centralparknyc.org for more beautiful images of scenes you'll recognise from so many movies, TV shows and programs.





Contractors Insurance - Have You Got It Covered?

Provided by Daniel Holmes, Fitzpatrick & Co Insurance Brokers

Hiring a contractor or sub-contractor is often appealing to time-poor, cash-strapped small business owners. One big reason is that they take care of their own insurance (as opposed to the business owner having to provide coverage for them, as is the case with employees). But what if things aren't quite that straightforward?

Is your Insurance Policy covering the subcontractors you use in your business? The answer is NO!

Insurers do not include subcontractors under liability insurance policies. If they did this, the insurer then accepts the liability for all of the work that the subcontractor undertakes.

The subcontractor could potentially cause an incident which results in property damage or an injury to a member of the public, and the subsequent insurance claim would be held against you, because they are an insured party under your policy.

Imagine the following scenario. You hire a tree lopper (subcontractor) to cut a tree and he damages the roof of the house whilst removing the tree. What was a \$1,000 job results in \$100,000 in damage.

It will then be for the insurer to decide whether the policy will respond to this incident or deny liability. It may leave you responsible to pay the costs for damages for work of which you knew nothing about.

Costs which could be in the tens of thousands of dollars or higher, depending on the incident.

“It's crucial for small businesses to ensure all their contractors and sub-contractors have appropriate contractors insurance in place.”

What policy? Well, that depends on the job but a humble suburban tradesman will often have public and products liability, professional indemnity and workers' compensation insurance.

Err on the side of caution when checking that any contractors or sub-contractors you use show you all the relevant policies to provide proof, so you are unlikely to be left on the hook if they, or one of their team, starts a fire or falls over and breaks a leg.

The best way to ensure a subcontractor you use has their own cover in place is to obtain a Certificate of Currency from them.

A Certificate of Currency will provide you with the information that is on their policy and can give you re-assurance that they have cover and that you may not have significant out of pocket expenses.

Your liability policy should also include an extension for Vicarious Liability.

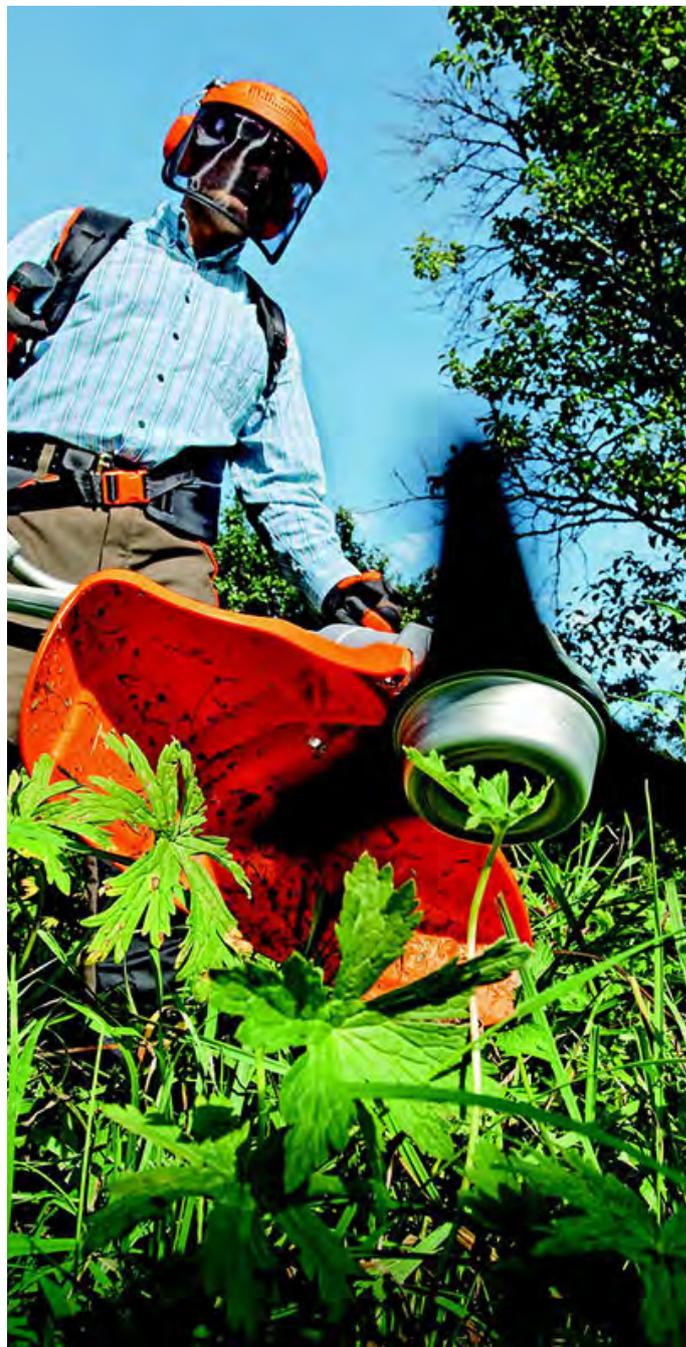
Vicarious Liabilities can arise in situations where you are responsible for a third party (eg. the subcontractor or contractor who is working for you), and they are negligent in carrying out that responsibility and exercising control.

If they are negligent you may be deemed to be responsible for some of the property damage or bodily injury caused by the subcontractor or contractor.

Vicarious Liability covers this exposure for you, so it is important to check that your policy includes this extension so that you are not left out of pocket or with a damaged reputation.

Some key points to remember when dealing with subcontractors:

- Ensure all contractors are aware of their responsibilities and understand house rules;
- Ensure records are kept up to date detailing contractors attendance at principal's induction program;
- Confirm that all subcontractors or contractors have their own adequate insurance cover in place that provides indemnity for you by naming you as their contract principal ;
- Check that the cover a subcontractor has in place includes sums insured that match your insurance cover and has no clauses that will pass the liability on to you, or exclusions that relate to the work you are performing; and
- Obtain and keep on file a copy of each subcontractor's Certificate of Currency and diarise to ensure that an updated certificate is obtained each year or for when new work is performed.



Important Note:

This article provides information rather than financial product or other advice.

The content of this article, including any information contained in it, has been prepared without taking into account your objectives, financial situation or needs.

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Callistemon viminalis 'LC01' (b)

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- More regular pruning will result in a tidier, denser Callistemon hedge.
- Very bushy growth with a tidy habit.
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- In sandy soils very dry climates top up water during summer will be beneficial.
- Only suffered minor tip burn in Canberra trials.



Description	More compact, better flowering Callistemon; bushy growth habit
Density	1-2 plants per m ² 1-1.5 per linear metre
Height & Width	1.8m x 1.5m
Flowering	Red flowers from Sep-Nov
Best Planting Time	March-October
Uses	Medium sized shrub
Position	Full sun to part shade Tolerates drought & frost
Soil Type	Tolerates most soil conditons
Care	Water as required for 8-13 weeks until established; prune to shape 1-3 times a year after flowering for a hedge
Where it Works	QLD, NSW, ACT, VIC, TAS, SA & WA



*Based on Myrtle Rust resistance trials (see research at www.ozbreed.com.au).

[Ozbreed.com.au](http://www.ozbreed.com.au)

Write for AIH

We welcome contributions to HortInsights from professionals, members and students in the horticulture industries.

Writing for the Institute offers an excellent way to share your views, knowledge and expertise with a passionate audience and you can be attributed CPD points.

While we are unable to pay for content submissions, our editorial promise is that if your submission is accepted for publishing, we will endeavor to repurpose it widely, for our website, social media or other public media channels.

These Guidelines Will Help You Provide The Right Format To Be Published:

- Articles should be a maximum of 600-800 words. A more concise article with a definite aim and strong take-home messages will help our audience use your expert information well.
- Please provide sources and references if you cite or refer to others' information in your article.
- Please provide 1-2 quality images. Photographs must be large enough to be used in a range of publications with a file size of between 1 and 5 MB (megabytes).

We reserve the right to make editorial, grammatical and stylistic changes to text and images.

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