



**Title:** 'In the pink'

**Description:** *Gliophorus* sp - possibly *lilacipes* or *versicolor*

**Photographer's name:** Noelle Bennett

**Where and when:** Hokitika. West Coast, June 2017.

**Sustainability:** Trees, plants, animals and fungi are all interdependent. Even in a relatively simple forest there are probably hundreds of thousands of life forms, all dependent on each other and all contributing towards making up what we call a forest. From viruses and bacteria through to fungi, plants and animals, all are part of the huge and intricate web of life and fungi are a really important part of that ecosystem. Yet we know so little about them.

New Zealand has many unique species of fungi - in fact, it is thought that 1 in 8 of New Zealand's endangered native species is a fungus. Simply because we do not see them or because we know so little about them doesn't mean they are irrelevant. In fact, they are far from irrelevant. Fungi are fundamental to the success and health of virtually every ecosystem on earth, both terrestrial and aquatic, and are essential for sustaining biodiversity. I think it's fair to say that they could be very aptly described as 'life support' for ecosystems.

Fungi occur in a spectacular array of shapes, sizes and colours - in fact, there are even fungi that glow in the dark. In New Zealand we have a fascinating mix of 'native' (naturally here, but also found in other countries), 'endemic' (naturally here and found nowhere else) and introduced fungi. Because fungi grow in association with plants, they have been inadvertently introduced when the plants they were associated with were brought to Aotearoa New Zealand for farming, forestry, gardening etc. More fungi will undoubtedly follow via the same route. It is estimated that at least 40 plants are becoming 'naturalised' (i.e. spreading from gardens and establishing in the wild) in New Zealand every single year. There is absolutely no doubt that some of these will have a fungus hitch-hiking with them.

Trees and many plants are connected through vast networks of mycelia, the thread-like structures of underground fungi. Through its vast network, fungi can connect all the trees in a forest creating what is rather charmingly referred to as the wood-wide web. The trees seem to be able to communicate with each other through the web, perhaps

warning each other of insect pests or sharing nutrients across the forest. Scientists are only just beginning to discover how the trees use this network, but they don't yet know whether trees connected by a fungal network survive much better than individual trees do outside a forest.

So, not only do fungi exist in symbiosis with trees, bringing them nutrients and water and receiving sugars in return, but they enable the trees to share nutrients with one another and also to exchange messages. This, in turn, allows the foliage of a forest to function as a single gigantic "super-organism" powerful enough to moderate the temperature beneath its canopy and far reaching enough to evoke rain. How amazing is that!

**Photographer's notes:** I so nearly missed these pretty pink *Gliophorus* mushrooms. Although you would think they would be very obvious, their caps are only about 20mm in diameter and they were growing in a fairly dark part of the bush. But what a find.

**Photo specs:** This image is a composite but is produced from one single image which has been used multiple times with differing effects applied to each iteration. Technical specs: The image was taken using a Panasonic DMC-GH4 camera and a Panasonic Leica DG Macro-Elmarit 45mm f/2.8 macro lens. Exposure details - 1/160 sec at f8 with an ISO of 200 and a focal length of 45mm (90mm full frame equivalent).

**Digital specs:** 7978 x 5737 pixels (45.77MP) @ 300dpi

**Key words:** fungi, fungus, mushroom, *Gliophorus*, *Gliophorus lilacipes*, *Gliophorus versicolor*, saprobe, mycorrhizal, hyphae, endemic, Hokitika, West Coast, Noelle Bennett, Ecosystems Photography, sustainability.

**Price:** \$250 (incl. GST) for use of the digital image. Visit [www.ecosystemsphotography/sales](http://www.ecosystemsphotography/sales) for details & to order, or to get a quote if you would like a high-quality print.

**Donation:** The price includes a \$100 donation to a sustainability organisation or project of your choice, or otherwise to iNaturalist NZ – Mātaki Taiao – <https://inaturalist.nz>.

We recommend that the donation goes to iNaturalist NZ because they are supporting a wide variety of community-led biodiversity monitoring programmes throughout New Zealand, including for the fungi featured in this series of photographs. iNaturalist receives species records from citizen scientists, maps the data, and shares the information so that it can be used by scientists, policy makers, and the public. They invite everyone to submit photographs and will find an expert to help by identify the plants and animals in the photographs.

**Image ref:** NB#018 (please use this reference in all orders and correspondence).

**Noelle Bennett**  
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