Title: 'In the spotlight'

Description: A pair of common blue butterflies (*Zizina otis labradus*) mating

Photographer's name: Noelle Bennett

Where and when: Ketu Bay. Pelorus Sound, Marlborough. March 2019.

Sustainability: Question! What do kiwi, tuatara and the common blue butterfly have in common?

No idea? Well, they are all native New Zealand animals that the average person rarely sees in the wild. And yet the common blue is...well, common. It is probably our most common butterfly but because of its tiny size (it has a wingspan of between a 17mm and 27mm) and because it tends to fly so close to the ground, many people simply never see them. It therefore classes as our most overlooked butterfly too!

We have around 46 species of butterflies that live and breed in New Zealand, and many of them are found nowhere else in the world. This might seem a lot, but biogeographic theory predicts that there should in fact be many more species for our landmass size. It's in the moths that we excel in world Lepidoptera (Moths and butterflies) diversity that we excel.

The common blue also occurs in Australia and the western Pacific. It is thought that it arrived here from Australia. Some suspect it was blown here – there is a constant stream of insects carried high in the atmosphere, some of which occasionally can drop out in new places. Another theory is that common blues were accidentally transported here in turf from Australia in the 1800s. This assisted passage has happened with certain other flora and fauna that otherwise we might consider self-introduced. This tide of new species entering new ground in an age of transport and travel sits alongside habitat destruction as the main global threat to biodiversity – it's probably more of a threat than climate change, at least in terms of immediate impact. This mixing of plants and animals means that the few high-performers can take over new places and ecological communities – an ecological and terrifying global game of space invaders.

The common blue prefers areas that have a varied habitat that includes shelter, food (including nectar plants) and stones for sunbathing. It can generally be found flying close to the ground over grasslands, roadsides and riverbeds and may even be seen at altitudes of up to 1000m. Their larvae eat clovers, trefoils and lucerne and because of this they are considered by some to be pests. Why? Because the defoliation they cause especially to the trefoils can substantially reduce pasture production.

Interestingly, it is also probably one of New Zealand's few butterflies that doesn't appear to have any parasites. However, that could simply be because none has been noticed yet. Another theory suggests that perhaps it could be because their foodplants naturally contain cyanide. And yet another possibility is the "founder effect" hypothesis – the idea that when a small number of animals or plants start a population in a new country, they by chance may not be carrying the parasites that plague their populations back in the home country of origin. A release from the pressure of parasites, diseases and predators is a common reason why the new species can ru8n riot in New Zealand. Biological control is the application of ecological science to find the safe parasites and diseases from the country of origin and bring them to New Zealand to reinstate natural balances in our southern island enclave.

Photographer's notes: Having read about how rarely the common blue is seen I find myself wondering just how many I've missed! I do confess that I have sometimes walked through grassland and have seen clouds of them taking off. This was the case when I took this image. I would normally have put my macro lens on if I was trying to take images of butterflies but my large telephoto extended to its fullest extent seemed to do a good job with these two. I suspect they were too busy to take very much notice of me!

Photo specs: This image is a composite created from a single image that has been used multiple times with differing effects applied to each iteration to produce this end result. Technical specs: The main image was taken using a Panasonic DC-G9 camera and a Panasonic Leica DG 100-400mm f/4-6.3 ASPH lens. Exposure details - 1/400sec at f8 with an ISO of 200 and a focal length of 400mm (800mm full frame equivalent).

Digital specs: 3501 x 3501 pixels (12.26MP) @ 300dpi

Key words: common blue butterfly, butterfly, Zizina otis labradus, common blue, mating, grass, golden hour, Ketu Bay, Pelorus Sound, Marlborough, Noelle Bennett, Ecosystems Photography, sustainability.

Price: $200 (incl. GST) for use of the digital image. Visit 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. 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.

iNaturalist NZ need funds to maintain a database for monitoring long term trends in biodiversity in places like the intertidal where the chitons pictured here were found.

Image ref: NB#044 (please use this reference in all orders and correspondence).

Noelle Bennett
28 December 2021