



Title: “Bull kelp chiton”

Description: Bull kelp chiton (*Plaxiphora egregia*), Marlborough

Photographer’s name: Noelle Bennett

Where and when: Ward Beach, Marlborough. April 2021

Sustainability: This photograph is one of seven of chitons that you will find in the *Ecosystems Photography* galleries. Check them all out to read about different aspects of their lives, conservation challenges and ecological significance.

The bull kelp chiton is a distinctive chiton which is endemic to South Island New Zealand. It is a small, flat chiton which is generally oval in shape although some individuals can be almost round. They generally grow to between 15 and 25mm in length and are usually light greenish in colour with some darker blotches. They are found on exposed rocky coasts from the low intertidal to shallow subtidal zones where they hollow out a cavity in bull kelp holdfasts. They are not very abundant, but it is not known if this is one of many naturally uncommon species, or whether it’s survival is threatened.

The bull kelp not only provides shelter and food for the chitons, they also provide a bus to spread themselves around the coastline! Storms wrench the bull kelp of the rocks and then currents transport them over big distances – genetic studies have shown that bull kelp floating up on South Island coasts comes all the way from the sun Antarctic islands. Dispersal is an important safeguard for populations – the more well-spaced patches of occupation that can be established, the safer the species will be from extinction. Ecologists call the larger interconnected population a ‘Metapopulation’ and recognise flow between its subpopulations as important for population resilience and persistence.

Photographer’s notes: Chiton are much harder to photograph than you would give them credit for when you first find them. Generally speaking, the only time that they can be found is at low tide with springs giving an even better chance to find them. Snakeskin chiton are a little more forgiving to photograph than green chiton for the reasons mentioned above but at around 30mm, they are still small and that in itself presents challenges. And they may still decide not to pose for you choosing instead to slide off to the darker side of their rock. And that’s without taking into account the light levels and the fact that the chiton may well be wet which adds a whole extra dimension into the equation. But with a bit of patience you can get a beautiful image in a sort of understated way.

Photo specs: This image was focus-stacked using 50 images taken at two unit increments to ensure the whole of the chiton was in sharp focus.

Technical specs: The image was taken using a Panasonic DC-G9 camera and a Panasonic Leica DG Macro-Elmarit

45mm f/2.8 macro lens. Exposure details - 1/200 sec at f5 with an ISO 200 and a focal length of 45mm (90mm full frame equivalent)

Digital specs: 7706 x 5517 pixels (42.52MP) @ 300dpi

Key words: chiton, molluscs, bull kelp chiton, *Plaxiphora egregia*, dispersal, metapopulations, Noelle Bennett, Ecosystems Photography, conservation, sustainability

Price: \$200 (incl. GST) for use of the digital image. Visit www.ecosystemsp photography/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 intertidal habitats 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.

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#031 (please use this reference in all orders and correspondence).

Noelle Bennett

5 December 2021