

Kiwaia sp – Raoulia

Background:

Kiwaia sp. cf. *jeanae* “Cloudy Bay” or mat daisy jumpers are small flightless moths which are 3-5mm long. *Kiwaia* were first discovered in 1999 and are endemic to the Marlborough region. These small moths were thought to be only found within a 2km strip of Cloudy Bay foreshore. Little is known about the ecology of *Kiwaia* and larval biology is unknown the larval biology is unknown, but it is believed to be associated with *Raoulia* mats within the pea gravel. This species has been monitored since its discovery, but its population undergoes large seasonal fluctuations. Monitoring in the past has occurred using mat tapping and light traps. It is not clear whether the *Kiwaia* are active at night and attracted to the UV light due to the low numbers detected using light traps.

Kiwaia sp. is a flightless moth of 3-5mm body length, with reduced wings which have a spread of around 8-9mm. The moth has a light-coloured body, but the darker, patterned wings cover this to camouflage the moth on sand or *Raoulia* mats. It has long legs for jumping. When disturbed the animal jumps, presumably with the aid of its wings, up to perhaps 6-8cm in the air. It may do a single jump but normally jumps from two to three up to 7 or 8 times in succession. In the air the animal looks somewhat like a grass seed, but the jumping action is highly characteristic and makes the animal conspicuous to an alert observer, so that animals can be identified without having to be captured.

The species is late emerging, being found probably from about mid-February to at least mid-April

Method:

The mat tapping technique was used to monitor *Kiwaia*. The mat tapping technique involves gently tapping *Raoulia australis* mats and counting and recording *Kiwaia* which are present. *Kiwaia* in the air look similar to grass seed but have a characteristic jumping action. They can be both found in the mat or the surrounding ground around it.

Who was involved 2021 season:

Inga Booiman, Simon Litchwark, Rowan Hindmarsh-Walls, Jan Clayton-Greene, Robert Hoare Land care Research, Eva Glen

Sites Involved and Access:

Rarangi Sites include:

North of Wairau Diversion – drive in and park by the fence hop under the fence and walk up the site on the western side of the old 4wd/walking track until the house with the gate made out of drift wood, patches come and go in here. Then cross over towards the beach and walk back down the other side of the walking/4wd track a couple of good patches here.

South of Wairau Diversion – Drive down that road take the loose rocky corner around a sharp U-turn and then park up at this site walk south along the kind of wee high ridge on that flat a 100-200m from the beach and walk until you go past the lone pine tree after the three pine trees in a row. Walk back. Patches along here.

Rough indication GPS points

1686032E	1685978E
5411661N	5411288N

Access: these sites by taking the Diversion roads that come off Neal Road and drive out to the coast.

Wairau River North - Once you have driven down the boulder bank road take a walk north around the wee lake and just walk along the beach/vegetation edge and you will come across the a few patches of plants. Just in general have a wee look around and see if you find any other loan plants (*raoulia*).

Rough indication GPS points

1688538E
5405395N

1688460E
5405489N

Wairau River South/Boulder Bank - Once you have crossed the mouth of the river walk along the boulder bank from its most northern point and just head south until you are a couple hundred metres past the hut in the tree. Remain close to the beach and look for patches of Raoulia can be quiet big patches through here.

Access: Drive down the Wairau Bar Road and walk to Northern site and paddle across the Wairau River Moth for the Boulder Bank Site (unless farm access changes)

These are public access points.

Rough indication GPS points

1688603E	1688904E
5404433N	5405039N



Cape Campbell

This site is probably about 1km south of Cape Campbell light house it is on the western side of the road just up on the hill side. This Site is big with lots of Raoulia. Some moths found here in 2021.

Its quiet a big square here are four GPS points that will be helpful. Can also see site from road.

1705981E	1705967E
5378624N	5378757N

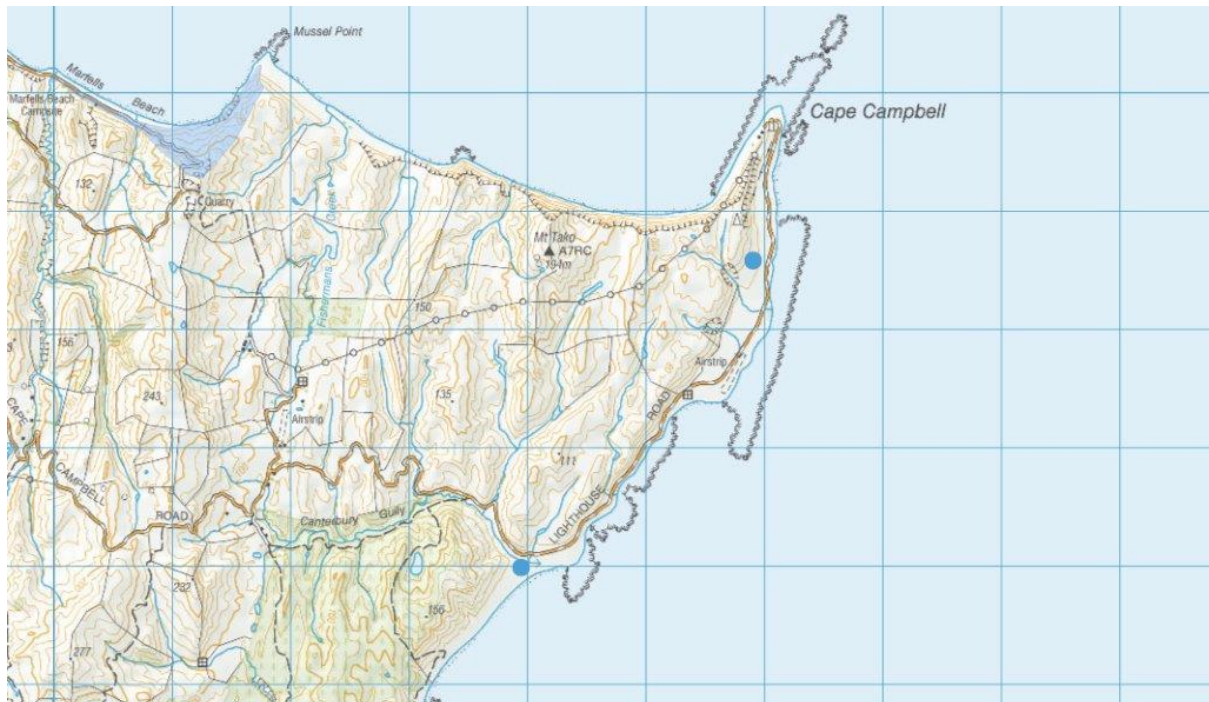
1705938E	1706008E
5378656N	5378734N

Access: Must be obtained from the landowners

Cape Campbell Sally and Robert Peters 03 575 6866 or 027 434 7313

505 Cape Campbell Road then take the first farm road on the right near the chicken coop and the accommodation sign (white) and follow that all the way down to the ocean and towards the light house.

Please leave gates as you find them.



Canterbury Gully

This Site is on the south side of the stream right at the Mouth on the Beach of Canterbury Gully and can be accessed through Farm Access from Cape Campbell Station. But the Site is on the Neighbouring farm Pinoli you need to have access from both landowners. Some moths were found here in 2021 and samples taken. GPS point from in the patch you will see it once you're here.

E1703924

N5375932

Access:

Cape Campbell Sally and Robert Peters 03 575 6866 or 027 434 7313

Pinoli Andy and Barbara Wiltshire 027 542 2486 or andy@pinoli.co.nz

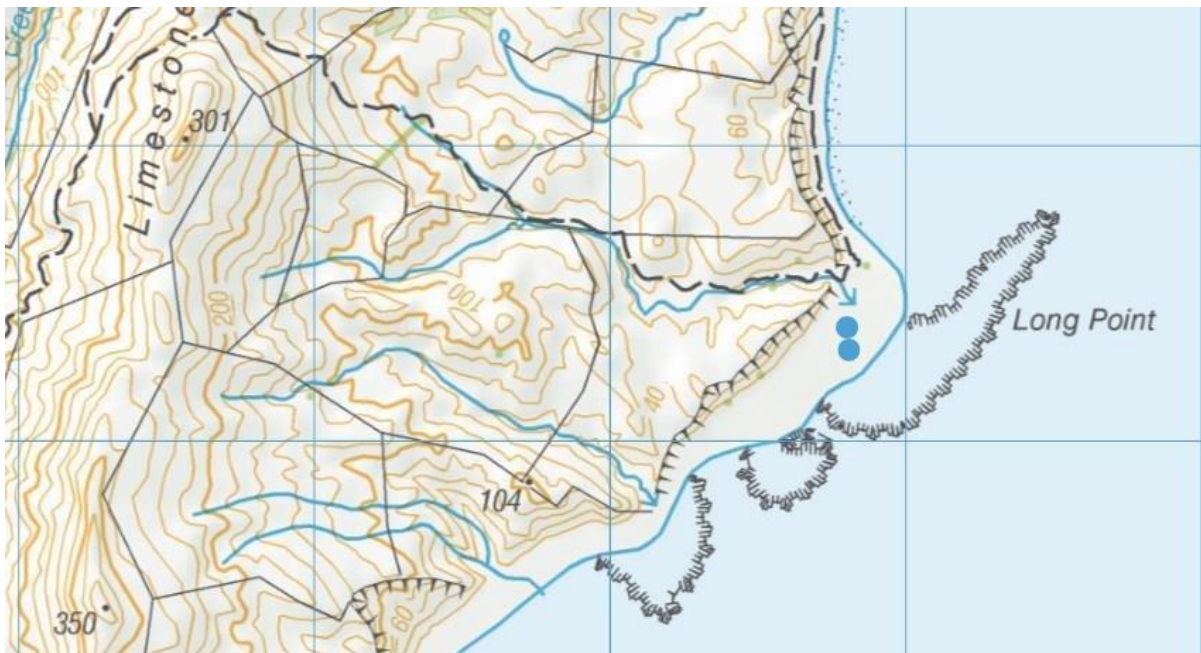
Long Point

Drive south of Blenheim and head towards Ward beach on 301 Ward Beach Road take the drive that's called "The Homestead" once you go past the houses and the wool shed follow road all the way up onto the hill on limestone ridge and then keep taking right turns until you end up at long point. Once their park truck somewhere and the patches of Raoulia can be found in the flat on the bench and then down on the beach edge. No moths were found it was a windy day, I would suggest trying again the habitat on the beach is good habitat. This is private land and access is needed.

1700854E

5370458N

Tom Loe 027 710 3320 or tom.loe301@gmail.com



Needles Point

From Ward Beach car park walk south along the beach and just after the Flaxbourne River there is a small site there. And then walk down the beach on the bench and you will come across some new growing patches of *Raoulia* (Current no moths found) just under Weld cone.

Follow down the beach and at about the stream just north of Needles Point is a few patches up on the hill these are on private land (Mirza Downs) ask permission before access.

Continue down the beach and just south of the Needles point there is a big patch of *Raoulia* and in there lots of moths were found in the 2021 season and samples taken.

Northern end of the Needles points site.

E1696296

N5363750

Southern End of The Needles point site.

E1696084

N5363533

Mirza Downs Limited Owner Rick Stolwerk 021 823 770 rjstolwerk@gmail.com and leased by Brett Solly 021 684 204

Seaward Hills Owners Imray Speizer ispeizer@yahoo.com 027 2371497 and leased by Brett Solly 021 684 204

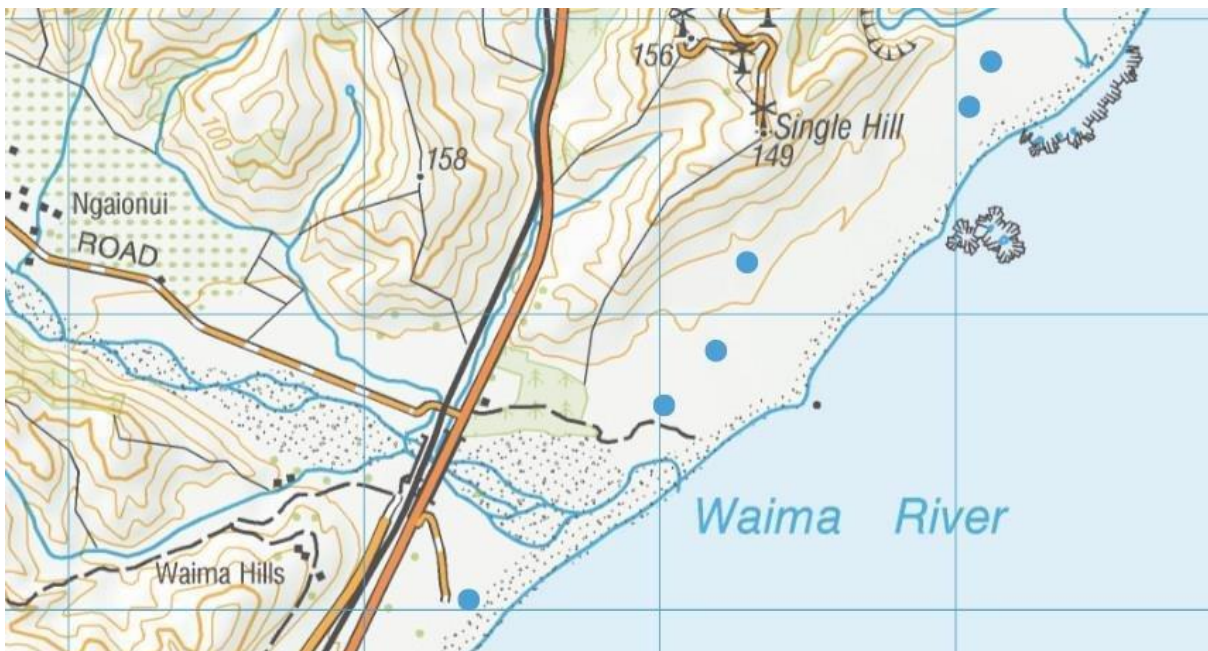


Lulworth Farm (North of the Waima River)

Drive south out of Blenheim towards Kaikoura and drive over the Waima River bridge and then turn left or east and drive as close to the beach as you can. Park up walk towards beach and some Raoulia growing on the bench looks fresh then cross dry riverbed near lagoon and walk along track north and there are a bunch of patches on the flats and up the side of the hill filled with plants and moth. This is private land so please be in touch with farmer to let them know you want to walk around that part.

E1693400
N5360921

Access: Simon Henson 03 579 4609



Deadman Stream

Park at pull out on the west side of the highway just north of Deadman Stream bridge. Walk across road close to stream (Northern Side) and walk along the dunes lots of patches of Raoulia no moths found here but possible site.

1679414E

5343919N

Access: This land is owned by Rail NZ and is free to roam



Activity/Outcome:

1st March 2021 - Simon took Inga around to the Rarangi sites to introduce her to their location. (No Moths found)

2nd March 2021 – Simon and Inga and Pam (Volunteer) did the three main Rarangi sites in detail and found (No Moths found)

4th March 2021 - Inga drove down to Christchurch and checked out the sites at Kaitorete Spit (One Moth seen)

5th March 2021 – Inga meet up with Allannah Purdie out at the Kaitorete Spit site and they found (One Moth seen)

8th March 2021 – Inga went and checked out the 3 Rarangi sites (No Moths found)

9th March 2021 – Simon and Inga went across to the Boulder Bank to check out the site (No Moth Seen)

10th March 2021 – Inga went and checked out the Boundary Stream site (No Moths seen)

15th March 2021 – Inga went to the three Rarangi Sites (No Moths seen)

17th March 2021 – Inga and Eva went to the Canterbury Gully and the Cape Campbell sites and found 6 Moths at Canterbury Gully

18th March 2021 – Inga and Simon went across to the Boulder Bank and no Moths were found

19th March 2021 – Simon and Inga went to Ward beach, Needle sites and 20 moths were found at the Needles Point

23rd March 2021- Inga, Simon, Robert, Jan and Rowan went out to the Canterbury Gully site 36 moths found and Robert took some samples.

Inga, Simon and Robert went down to the Needles Point site and found 20 and samples were collected

Jan, Rowan, Farmer Rob Peter and Andy Wiltshire found a few moths at Canterbury Gully and also looked for Marlborough Mini Gecko and some Grassland skinks and Katipo spider

Jan, Rowan and Farmer Rob Peter went to Cape Campbell site and found 1 definite and 1 possible siting of Moth

24th March 2021 - Simon, Inga and Robert checked out the Rarangi sites, North and south of the Wairau Diversion. Nothing found other than some Dichromodes.

25th March 2021 – Simon, Inga and Jan went out to the North of Waimea site and checked out a few spots along there and found the a couple moths in each patches and then moved onto the other so didn't aim for a whole population number just to get an idea if they were present or not present.

26th March 2021 – Simon, Jan and Inga went to Long Point and found no Kiwaia very windy day.

29th March 2021 – Simon and Eva went across to the boulder bank and found nothing of significant.

30th March 2021 - Inga and Pam (Volunteer) went to Rarangi started raining and nothing found.

7th April 2021 – Eva checked North of Wairau diversion (no moths found).

8th April 2021 – Eva and Jan checked the Boulder Bank site (no moths found).

12th April 2021 – Eva checked North of Wairau diversion (no moths found).

13th April 2021 – Eva and simon checked the Boulder Bank site (no moths found).

23rd April 2021 – Eva checked North of Wairau diversion (no moths found).

Recommendations:

Re-Visit sites even if moths were not present last season.

Take more GPS points of sites