

Documenting Kina Barren Formation at Kau Point

Observations 20 March 2022 to 8 May 2022

Deployed the Oceansense KinaKam on 20 March 2022 to capture photos in 20 min intervals over the period 20 March to 1 May 2022. We also monitored the area between the shallow marker #1 and the KinaKam and the rocks in the camera frame regularly to document changes. The KinaKam was retrieved on 1 May and the rocks in the frame cleared of kina by relocating kina to surrounding areas. The site was revisited on 8 May to document longer-term impacts. No kina had returned into the area over the week 1-8 May, but a large stand of *Macrocystis* was pulled of the holdfast during the week as kina grazing on the holdfast had weakened the structure significantly pre-1 May.

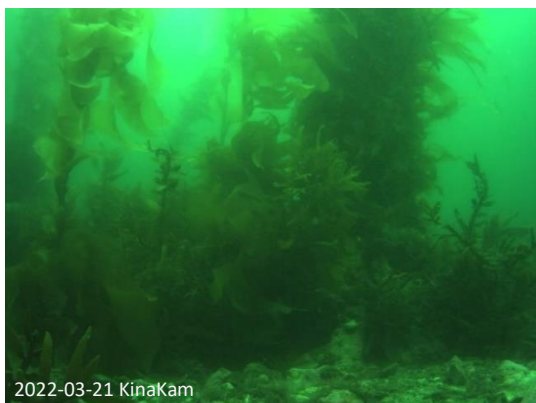
The Location & monitoring intervals

We observed barren formation in shallow water areas of the project site over the recent months. The shallow marker is close to an identified kina hotspot.

We decided to deploy the prototype KinaKam in an area close to the shallow marker. Despite large numbers the kelp forest still looked thick and healthy but showed initial signs of grazing pressure (i.e. *Macrocystis* stems chewed off and entangled in thicker stands).

In this report

- Selection of KinaKam images (incl. link to time-laps video)
- Close up observations of the observation site (GoPro screenshots and still images)
- Changes at the Shallow Marker
- Growth observations of *Carpophyllum* and *Macrocystis* in the project site

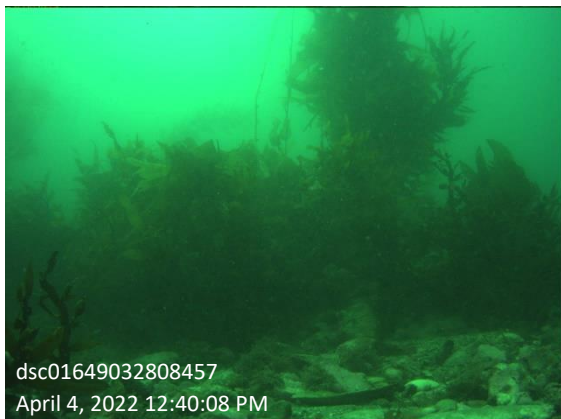
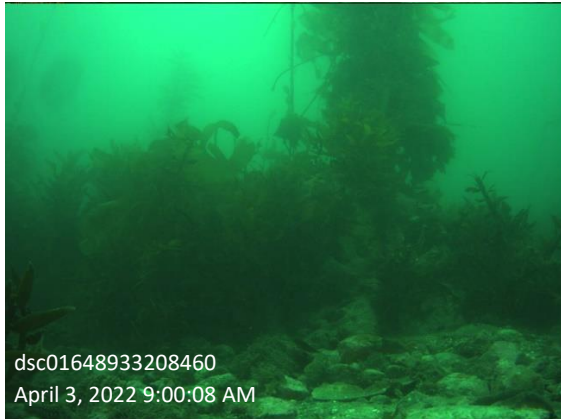


Change in the project site over 7 weeks (21 March to 08 May 2022) with close ups providing a closer look at damage through kina grazing (below).



KinaKam Images (Spot 1, 20 Mar 22 – 1 May 22)

Find out more about Oceansense on: <http://oceansense.nz/>



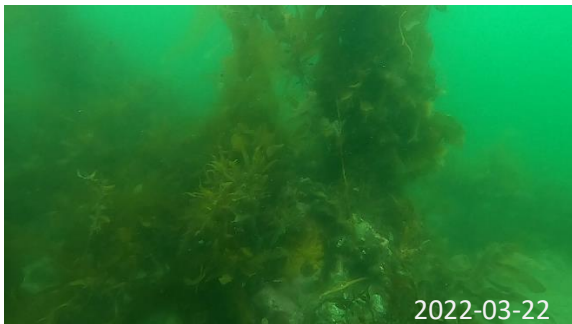
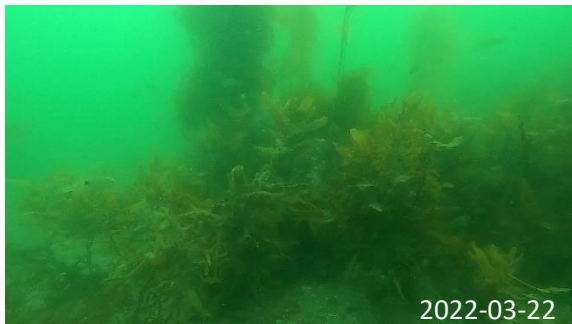
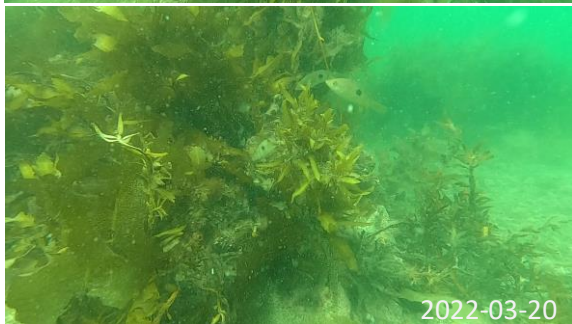
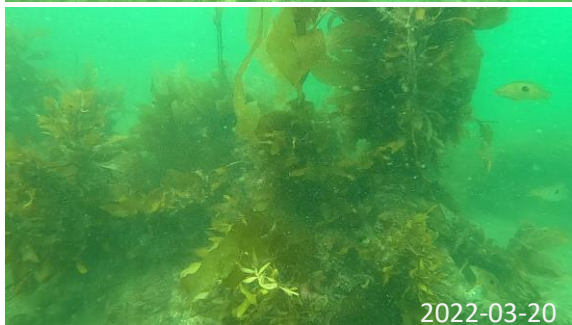
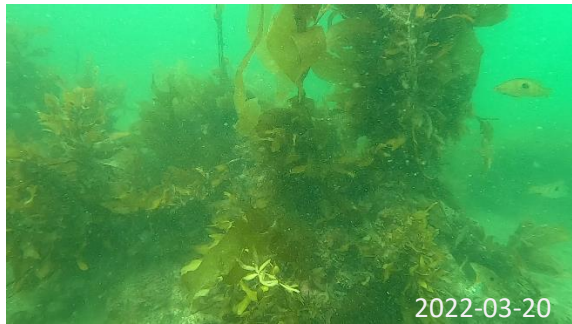


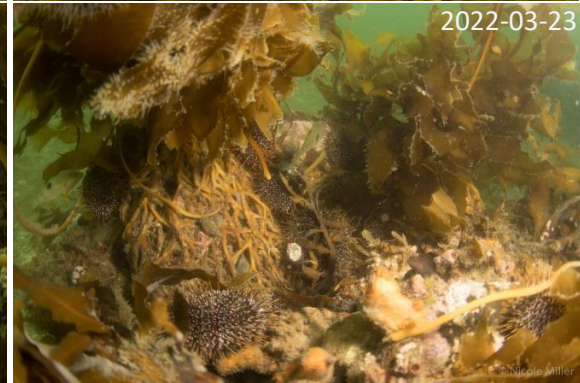
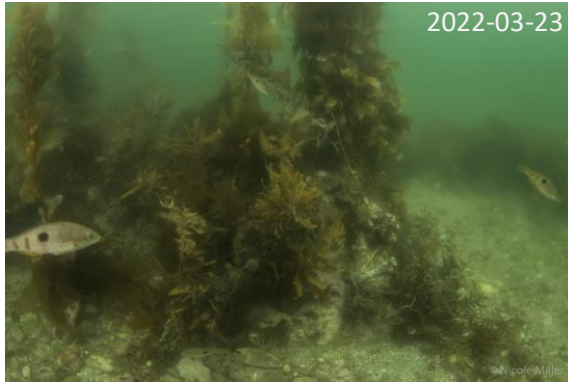
A time-laps video from Oceansense is available on: <https://vimeo.com/705242842>

Seaweed growing season started plus Macrocyctis on rocks started to move in and out which made it difficult to see the full extent of kina grazing impact from the KinaKam looking upwards.



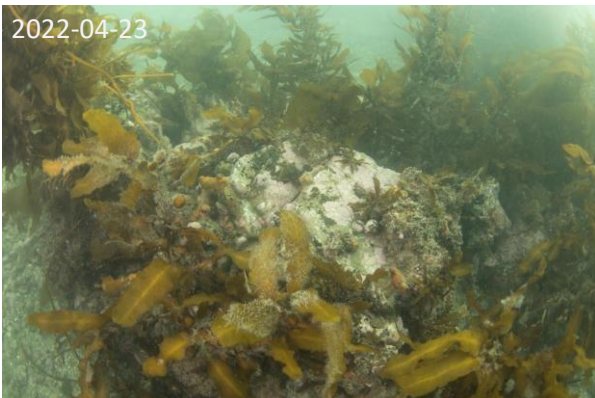
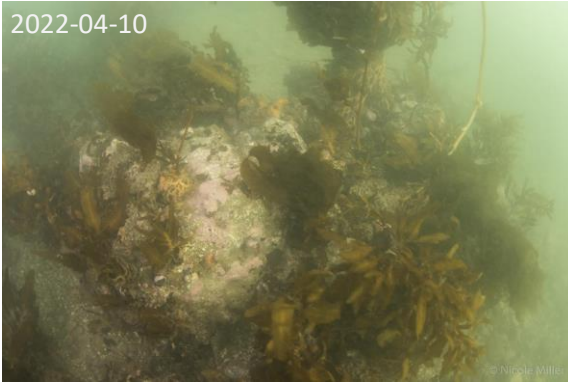
KinaKam close up observations (GoPro Screenshots and still images)

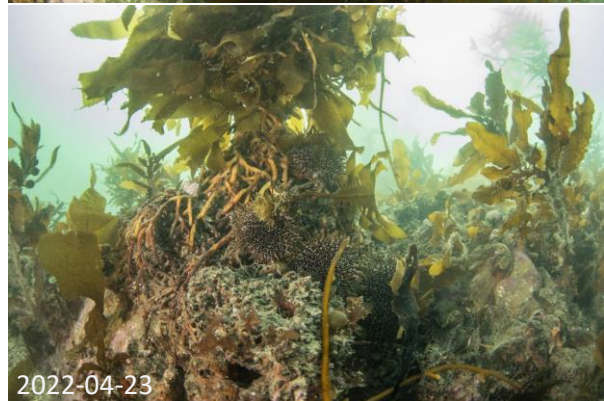






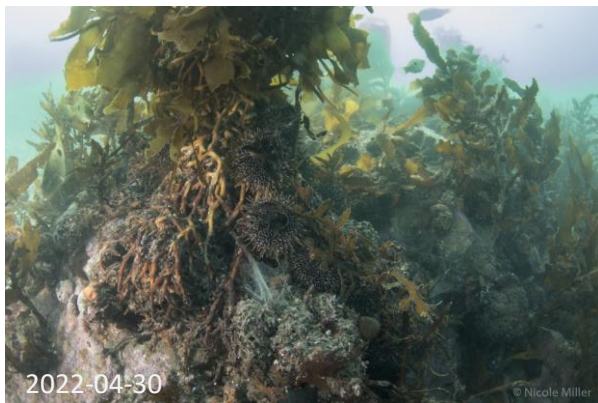


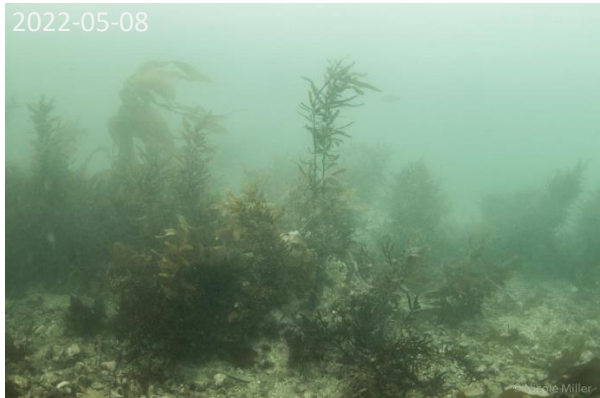


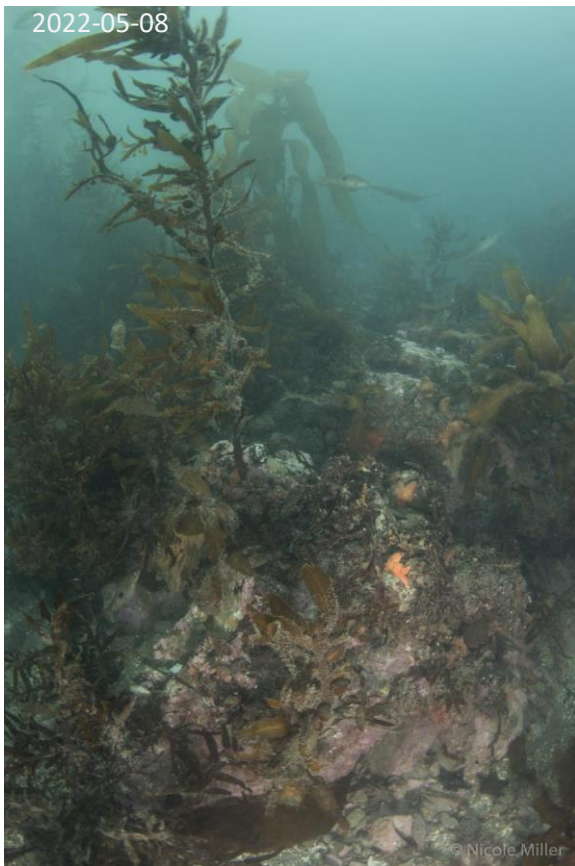




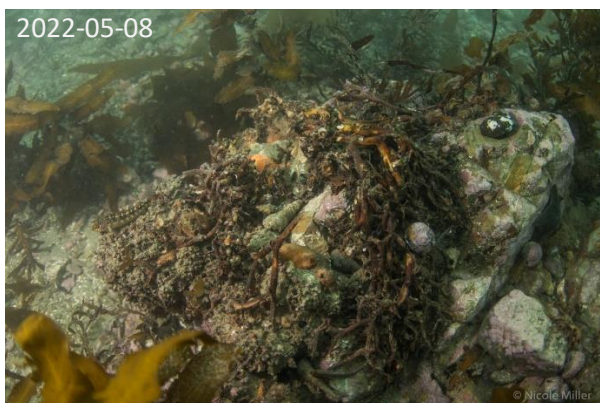
Macrocystis is floating in and out of the project area, when growing tall on rocks and getting buoyant. Examples can be seen in the image from 30 April 22.











Changes at the Shallow Marker

Note - small giant kelp next to the marker is growing on a large pebble and is not attached to the rocky substrate. Between 23rd and 31st March it moves out of the project area (swell or fishing line entanglement are possible causes).



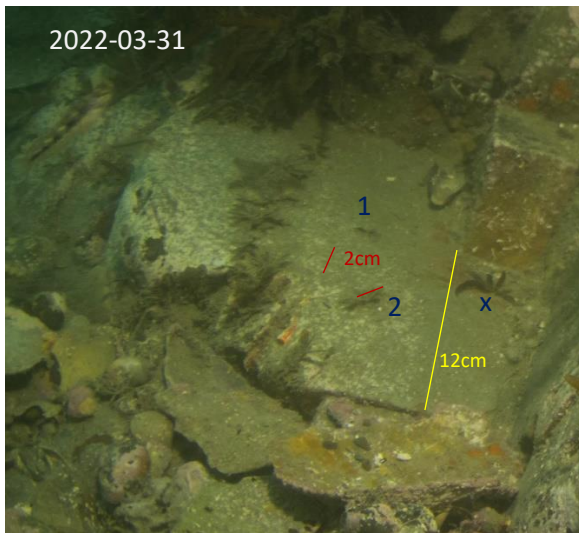
Shallow Marker #1



Shallow Marker #1



Growth of *Carpophyllum* and *Macrocystis* in the project site



Seaweed (*Carpophyllum*) growth next to the shallow marker #1 (area clean due to seaweed on rock moving).



Macrocystis growth in the KinaKam monitoring site.

