

Project Baseline Wellington Kelp Survey Report for Kelp Survey 01 June 2025

This data point stands out as an outlier in our time series. We didn't see a floating canopy at the site, but giant kelp was still growing below the surface. It's likely that strong wind gusts of more than 100 km/h around the monitoring date disrupted the canopy (see graph with wind speeds below).

Kau Bay Kelp Observation – D21 (01 June 2025)

Reference: KB D21

Date: **01 June 2025**

Time: 15.45 to 16.30 (low tide: 15.22, 0.6)

Route: From Kau Bay into Mahanga Bay

Surface snorkel observation

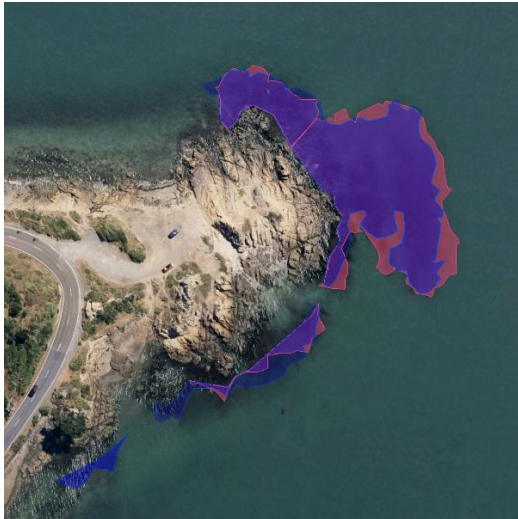
Snorkeler: Nicole Miller

Method: GPS tracking with Garmin etrex 22x in waterproof housing.

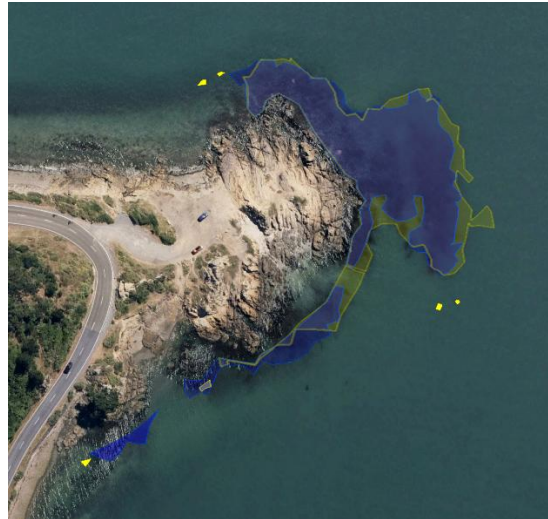
Visibility: 2m Kau Bay Side

Surface Temp: N/A

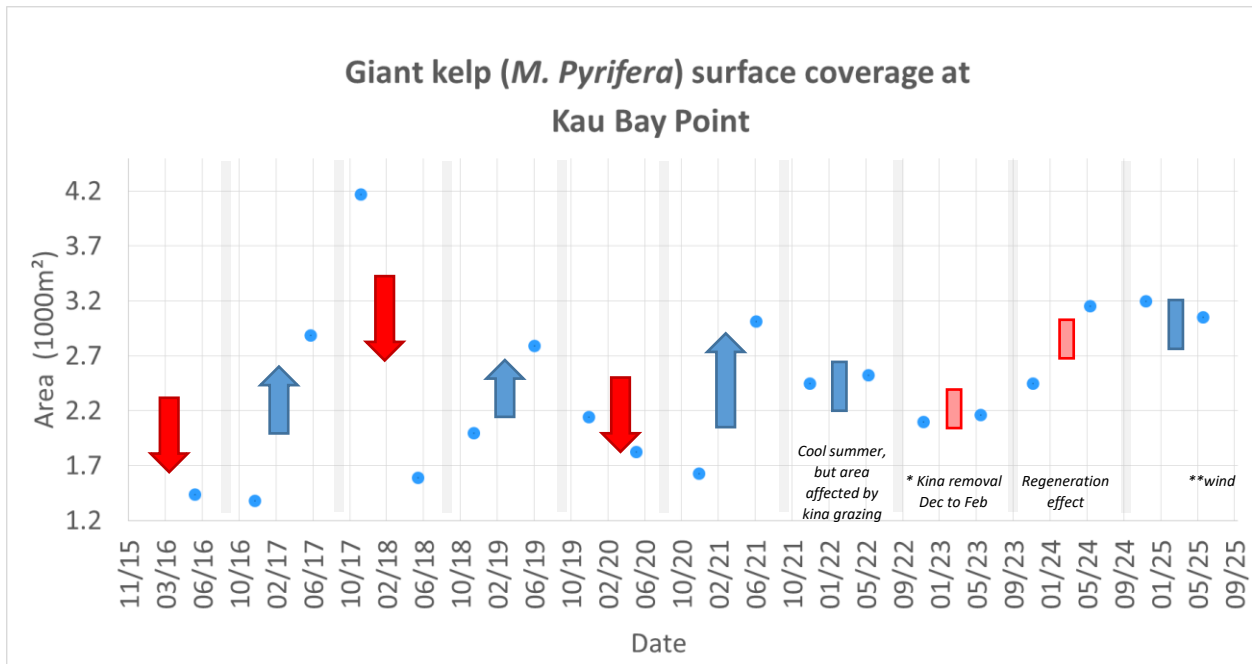
Kelp Bed Size: **area covered 3,048m²** (2,553m² plus 394m² plus 101m²)



June 2025 (blue, 3,048m²) & May 2024 (red, 3,150m²).

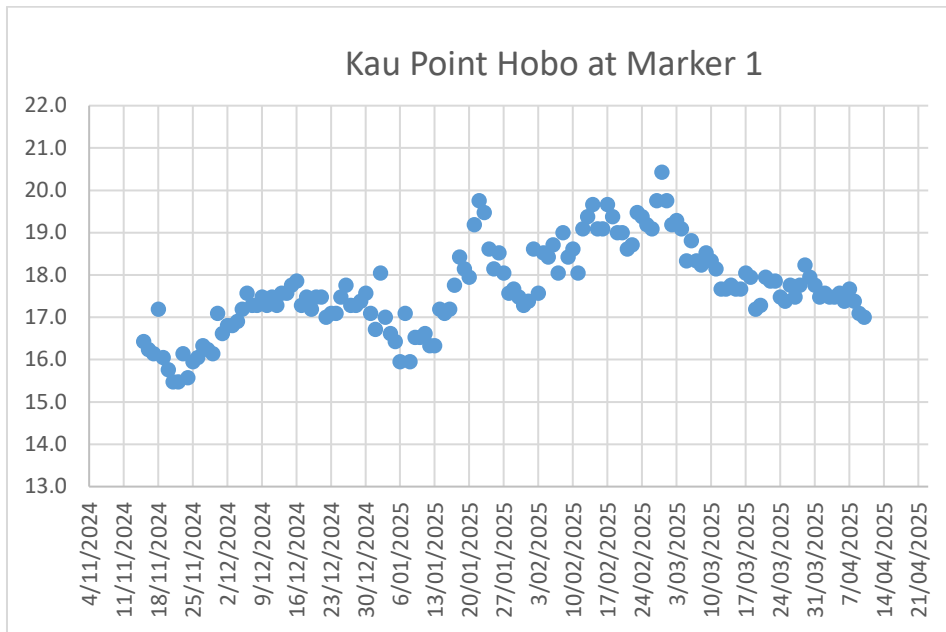


June 2025 (blue, 3,048m²) & Nov 2024 (yellow, 3,196m²).



*Kina removal event Dec 2022 to Feb 2023, regeneration visible close to existing kelp forest in May 2023, for regeneration progress as of May 2024 visit www.kinaowhanganuiatara.nz.

**high wind speeds around the monitoring date, no surface coverage, monitored giant kelp just under the surface.



Daily maximum temperature using Excel Pivot Tables

Hobo data was analysed using the Excel Pivot Table function and maximum daily temperature automatically displayed from date and temperature columns.

While downloading Hobo data (date, time and temperature) not all cells containing dates were imported formatted as date and instead were formatted as numeric text. First step was converting the numeric text back to dates. From date and temperature values a pivot table could be created and analysed by maximum value each day.

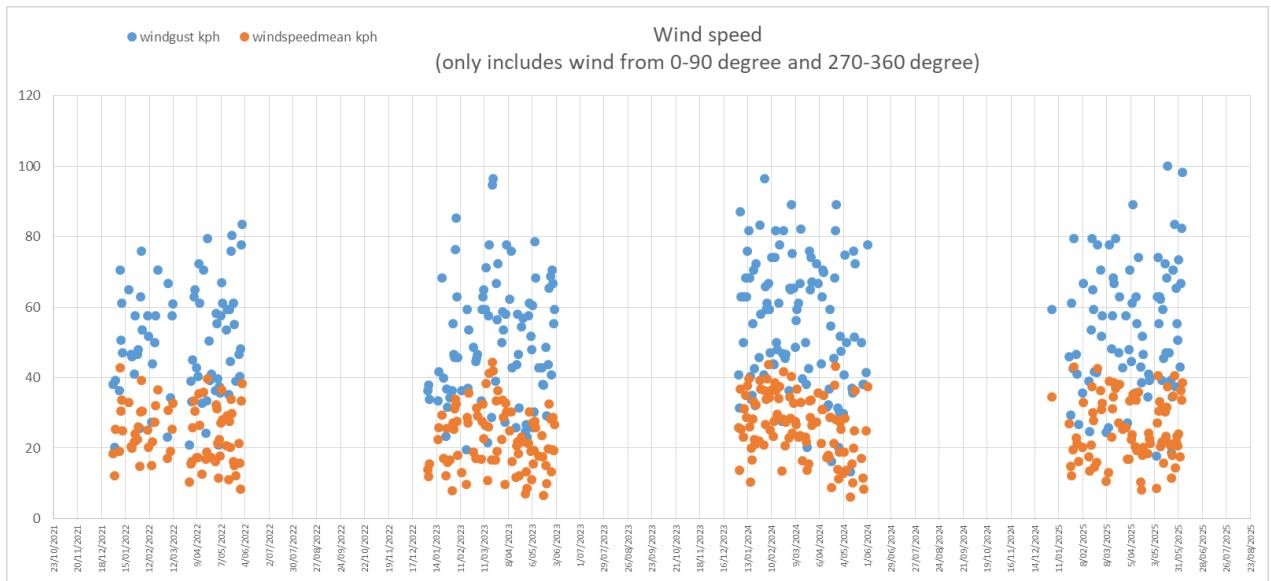
Pivot tables will be used to select maximum temperature values each day from 28 April 2024.



Temperature 19.1dC and higher 2022/23, 2023/24, 2024/25 Summer Seasons

> 19.5 °C			> 19.5 °C			> 19.5 °C		
19.5			19.5			19.5		
19.1-19.4			19.1-19.4			19.1-19.4		
Hobo Data - Nov 2022 to Mar 2023			Hobo Data - Nov 2023 to Mar 2024			Hobo Data - 18 Dec 2024 to 22 Jun 2025		
Hobo Data	Date	Max Daily Temp (d C)	Hobo Data	Date	Max Daily Temp (d C)	Hobo Data	Date	Max Daily Temp (d C)
Dec 2023	13/12/2022	19.8	Jan 2024	3/01/2024	19.4	Jan 2025	21/01/2025	19.2
	14/12/2022	19.3		7/01/2024	19.2		22/01/2025	19.8
	15/12/2022	19.3		10/01/2024	19.9		23/01/2025	19.5
	20/12/2022	19.1		11/01/2024	19.8	Feb 2025	13/02/2025	19.4
	24/12/2022	19.1		13/01/2024	19.2		14/02/2025	19.7
	26/12/2022	19.9		14/01/2024	19.2		17/02/2025	19.7
	27/12/2022	19.4		16/01/2024	20.1		18/02/2025	19.4
	28/12/2022	19.4		17/01/2024	19.5		23/02/2025	19.5
	29/12/2022	19.1		18/01/2024	19.5		24/02/2025	19.4
Jan 2023	2/01/2023	19.4		19/01/2024	19.7		25/02/2025	19.2
	3/01/2023	19.6		20/01/2024	19.7		27/02/2025	19.8
	4/01/2023	19.2		21/01/2024	19.7		28/02/2025	20.4
	5/01/2023	19.1		22/01/2024	19.9	Mar 2025	1/03/2025	19.8
	18/01/2023	19.5		23/01/2024	20.1		2/03/2025	19.2
	19/01/2023	20.0		24/01/2024	20.5		3/03/2025	19.3
	20/01/2023	19.6		25/01/2024	20.8			
	24/01/2023	19.3		26/01/2024	20.0			
	25/01/2023	19.4		27/01/2024	19.9			
	29/01/2023	19.4		28/01/2024	19.4			
	31/01/2023	19.2		30/01/2024	19.8			
Feb 2023	4/02/2023	19.4		31/01/2024	19.7			
	5/02/2023	19.3	Feb 2024	1/02/2024	20.7			
	6/02/2023	19.3		2/02/2024	19.2			
	7/02/2023	19.7		4/02/2024	19.0			
	8/02/2023	19.9		6/02/2024	19.2			
	9/02/2023	19.9		9/02/2024	19.5			
	10/02/2023	20.6		10/02/2024	19.4			
	11/02/2023	20.4						
	12/02/2023	20.3						
	13/02/2023	19.9						
	14/02/2023	19.3						
> 19.5 °C			> 19.5 °C			> 19.5 °C		
Hobo Data - Nov 2022 to Mar 2023			Hobo Data - Nov 2023 to Mar 2024			Hobo Data - 18 Dec 2024 to 22 Jun 25		
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	8/02/2023	19.9		22/01/2024	19.9			
	9/02/2023	19.9		23/01/2024	20.1			
	10/02/2023	20.6		24/01/2024	20.5			
	11/02/2023	20.4		25/01/2024	20.8			
	12/02/2023	20.3		26/01/2024	20.0			
	13/02/2023	19.9		27/01/2024	19.9			
				30/01/2024	19.8			
				31/01/2024	19.7			
			Feb 2024	1/02/2024	20.7			

Windspeeds



Date 1 Jan to 1 Jun 2022, 2023, 2024, 2025 – high wind gust speed just before the monitoring date 01 June 2025.

Data obtained from: <https://www.visualcrossing.com/>
Global Weather Data & API for Every Application. From free access to enterprise solutions for historical, forecast, current conditions, and industry-specific weather data.