

Situation Report: Aotea and Ahuahu Island exotic Caulerpa Delimitation (MPI Response Panel Contract)

Co-ordinated by:	NIWA																												
Report Number	#005																												
Date and time	23 July 2023																												
Period covered	22 July 07:00-19:00																												
Summary of day's activities	<ul style="list-style-type: none"> - 700-0730 Breakfast at Mercury Cove, trialled Boxfish ROV again and captured limited footage, toolbox meeting and clean anchor prior to transit to Aotea/Great Barrier Island (Figure 1). - 0745- 1000 Transit from Mercury Cove to Tryphena Harbour to meet Jeff Cleave from Ngati Rehua. - 1000-1100 Karakia at Tryphena harbour, attempted to use the Boxfish to dive the deepwater fishing sites off Schooner Bay (ROV134, 135 and 136, Figure 2) but the weather made sea conditions too rough. When trialling the third site ROV deployment it stopped working. - 1100-1200 transit to Bowling Alley Bay to get protection from the wind and swell. - 1200-1250 Two fifteen-minute dive transect searches in Bowling Alley Bay, extensive exotic Caulerpa found, and decision made to search further north rather than within the Bay (BOW142, BOW147) Exotic Caulerpa found at both sites (Table 1, Figure 2). - 1300-1415 Two fifteen-minute dive transect searches in the Southern Broken Islands (BRO138-139), extensive exotic Caulerpa was found and decision made to return to the ROV transects on the way to dropping Jeff back off to Tryphena. Exotic Caulerpa found at both sites (Table 1, Figure 2). - 1430-1515 Transit from the Broken Islands Back to the ROV sites north of Tryphena Harbour. - 1520-1600 Two fifteen-minute dive transect searches at the ROV sites near Schooner Bay (ROV137-138). Exotic Caulerpa found at both sites (Table 1, Figure 2). - 1600-1730 Dropped Jeff back to Tryphena Harbour and returned north to the Broken Islands to anchor for the night. <p style="text-align: center;">Table 1: Summary of exotic Caulerpa findings</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Site</th> <th>X</th> <th>Y</th> <th>Caulerpa found</th> </tr> </thead> <tbody> <tr> <td>BOW142</td> <td>175.3258644</td> <td>-36.2251366</td> <td>90% cover deeper than 20m and between 10-25% cover shallower areas across the transect</td> </tr> <tr> <td>BOW147</td> <td>175.32241</td> <td>-36.22333643</td> <td>60% cover deeper than 10m and 5-10% cover shallower areas across the rest of the transect</td> </tr> <tr> <td>BRO145</td> <td>175.306807</td> <td>-36.23068361</td> <td>19-11m depth 100% cover, shallower than 11m 70% cover.</td> </tr> <tr> <td>BRO139</td> <td>175.3144517</td> <td>-36.22804687</td> <td>Over 10m 75% cover and 5-10% cover in shallower areas across the rest of the transect</td> </tr> <tr> <td>ROV138</td> <td>175.43154</td> <td>-36.30878981</td> <td>25-50% cover across the transect, with higher density in deeper water.</td> </tr> <tr> <td>ROV137</td> <td>175.4345606</td> <td>-36.311325</td> <td>25-50% cover across the transect, with higher density in deeper water. Vertical walls with sponge gardens covered in Caulerpa</td> </tr> </tbody> </table> <ul style="list-style-type: none"> - 1730-1800 The dive team updated the project manager of the daily activities and sent the data through for SitRep - 1800 to 1900 Complete SitRep and collate data. 	Site	X	Y	Caulerpa found	BOW142	175.3258644	-36.2251366	90% cover deeper than 20m and between 10-25% cover shallower areas across the transect	BOW147	175.32241	-36.22333643	60% cover deeper than 10m and 5-10% cover shallower areas across the rest of the transect	BRO145	175.306807	-36.23068361	19-11m depth 100% cover, shallower than 11m 70% cover.	BRO139	175.3144517	-36.22804687	Over 10m 75% cover and 5-10% cover in shallower areas across the rest of the transect	ROV138	175.43154	-36.30878981	25-50% cover across the transect, with higher density in deeper water.	ROV137	175.4345606	-36.311325	25-50% cover across the transect, with higher density in deeper water. Vertical walls with sponge gardens covered in Caulerpa
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Actions carried out	<ul style="list-style-type: none"> • Transit from Ahuahu to Aotea • Karakia and pick up Ngati Rehua representative • Test dives with Boxfish ROV • 6 dive transects in Aotea • Data collation, mapping and SitRep. 																												
Plan for tomorrow	<ul style="list-style-type: none"> • Complete 10 fifteen-minute dive searches in Broken Islands, Port Fitzroy and Port Abercrombie area 																												

Table 2: Transect locations, substrate, depth and presence of exotic Caulerpa (in yellow) completed during the delimitation survey in July 2023 by NIWA divers

Site ID (i.e. Dive01/Rov 01)	Start Coordinates		End Coordinates		Depth category ¹	Water temp	Max depth	Transect width	Substrate ²	Approx. Visibility (m)	Caulerpa (Y/N)
	Lat	Long	Lat	Long							
BOW142	175.3258644	-36.2251366	175.3243642	-36.22525513	D	15	18.5	8	5	8	Y
BOW147	175.32241	-36.22333643	175.3218931	-36.22184785	D	14	11.5	8	3-9	6	Y
BRO139	175.306807	-36.23068361	175.3062822	-36.22984209	D	15	17.8	8	3-8	10	Y
BRO145	175.3144517	-36.22804687	175.3157784	-36.22675809	D	15	19	8	3-5	10	Y
ROV138	175.43154	-36.30878981	175.4318211	-36.30775007	D	15	14.4	8	8	8	Y
ROV137	175.4345606	-36.311325	175.4356341	-36.31059255	D	15	21	8	8	10	Y

1Depth Category codes (NS <2m, S 2-5m, M, 5-10m, D >10m)
 2Substrate codes: 1- Sandy mud, 2- Muddy sand, 3- Sand, 4- Sandy gravel, 5- Shelly gravel, 6- Sand fowl, 7- Sand reef, 8- Reef, 9- Other (Please state), 10 - Mud can have multiple codes ADD COMMENTS



Figure 1: Anchor chain disinfection and dive gear disinfection post-diving at the infected sites at Aotea.

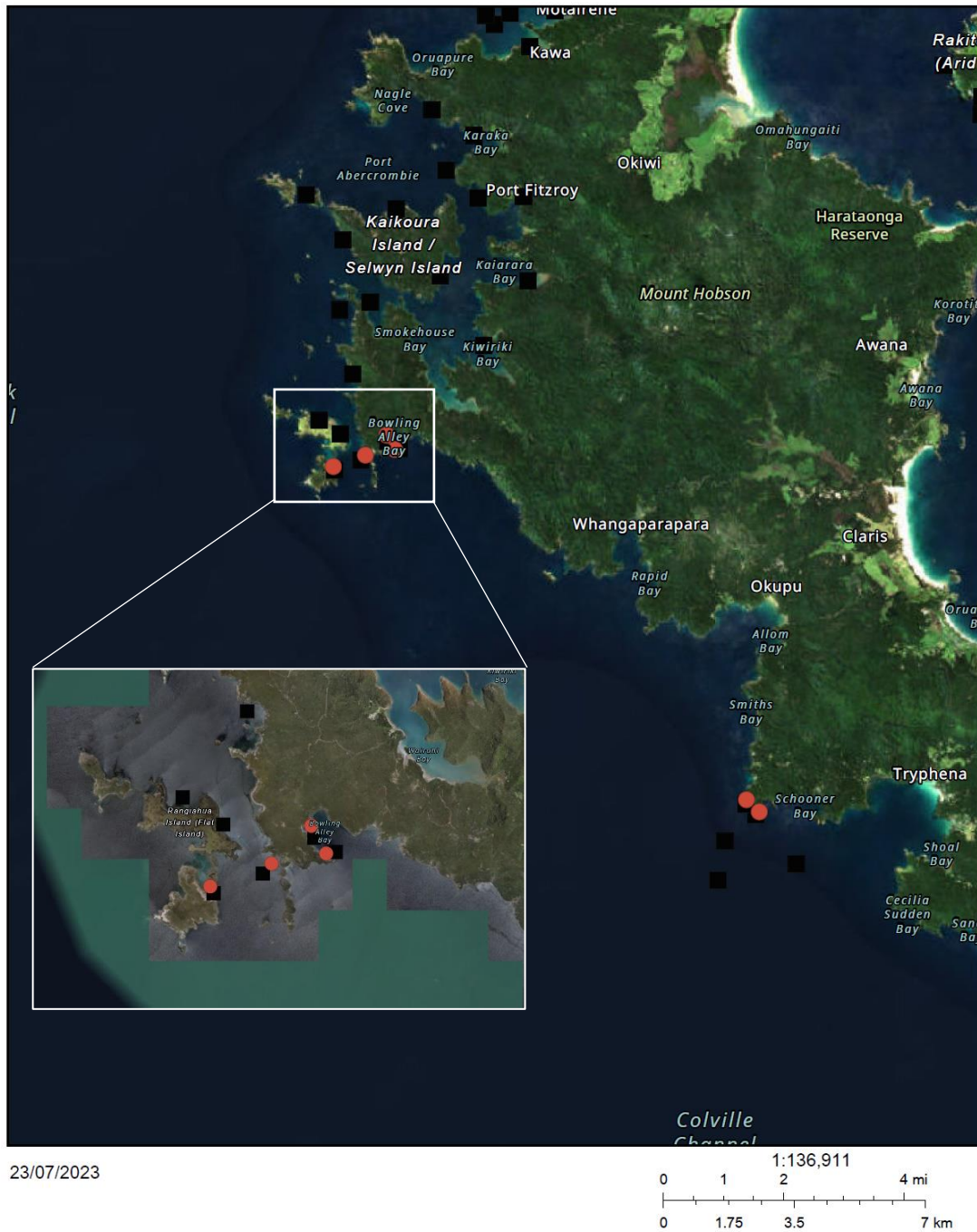


Figure 2: Start points without exotic *Caulerpa* (green circles), start points with exotic *Caulerpa* (red circles), and end (black squares) points for the dive searches completed around Aotea/Great Barrier Island 22 July 2023. Inset depicts close up of the Bowling Alley Bay and Broken Island sites.