

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

Co-ordinated by:	NIWA																																
Report Number	#006																																
Date and time	24 July 2023																																
Period covered	23 July 07:00-19:00																																
Summary of day's activities	<ul style="list-style-type: none"> - 0700-0730 Breakfast at Broken Islands toolbox meeting and clean anchor prior to transit to Port Fitzroy (Figure 1). - 0730-1030 Six fifteen-minute dive transects completed from Broken Islands north toward Port Fitzroy (BRO140, 141, 143, 144, 148) to meet Jeff Cleave from Ngati Rehua) Exotic Caulerpa was found at all sites apart from BRO140 (Table 1, Figure 2). - 1030-1140 Pick up Jeff Cleave at Port Fitzroy and refuel and refill freshwater. - 1140-1420 Five fifteen-minute dive transect searches in the Port Fitzroy area (FITZ149- 151, FITZ154-155) Exotic Caulerpa found at FITZ151 (Table 1, Figure 2). - 1445-1630 Three fifteen-minute dive transect searches in the Port Abercrombie area (ABC152, 153, 157, Table 2, Figure 1). No exotic Caulerpa detected. - 1630-1740 Transit back to Port Fitzroy wharf to drop Jeff back and anchor in Port Fitzroy for the night. - 1745-1800 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. <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 style="text-align: left;">Site</th> <th style="text-align: left;">X</th> <th style="text-align: left;">Y</th> <th style="text-align: left;">Caulerpa found</th> </tr> </thead> <tbody> <tr> <td>BRO143</td> <td>175.3107595</td> <td>-36.20733423</td> <td>100% cover for the first 10 minutes of the dive, a lot of fragments, density was reduced at 7m. Average overall cover 25-50% across the transect.</td> </tr> <tr> <td>BRO146</td> <td>175.3010451</td> <td>-36.21826111</td> <td>Over 95% cover across the transect.</td> </tr> <tr> <td>BRO140</td> <td>175.3106181</td> <td>-36.19173449</td> <td>6 patches smaller than 5cm, 3 patches between 5-20cm, 12 patches 20-50cm.</td> </tr> <tr> <td>BRO141</td> <td>175.3187729</td> <td>-36.18535238</td> <td>24 patches smaller than 5cm, 10 patches between 5-20cm, 1 patch 75-100cm</td> </tr> <tr> <td>BRO148</td> <td>175.3181316</td> <td>-36.19147288</td> <td>17 patches smaller than 5cm, 6 patches between 5-20cm, 2 patches 20-50cm, 1 patch 50-75cm</td> </tr> <tr> <td>BRO144</td> <td>175.3307227</td> <td>-36.1898289</td> <td>5 patches smaller than 5cm, 3 patches between 5-20cm, 1 patch 50-75cm, 1 patch 150-200cm</td> </tr> <tr> <td>-</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Site	X	Y	Caulerpa found	BRO143	175.3107595	-36.20733423	100% cover for the first 10 minutes of the dive, a lot of fragments, density was reduced at 7m. Average overall cover 25-50% across the transect.	BRO146	175.3010451	-36.21826111	Over 95% cover across the transect.	BRO140	175.3106181	-36.19173449	6 patches smaller than 5cm, 3 patches between 5-20cm, 12 patches 20-50cm.	BRO141	175.3187729	-36.18535238	24 patches smaller than 5cm, 10 patches between 5-20cm, 1 patch 75-100cm	BRO148	175.3181316	-36.19147288	17 patches smaller than 5cm, 6 patches between 5-20cm, 2 patches 20-50cm, 1 patch 50-75cm	BRO144	175.3307227	-36.1898289	5 patches smaller than 5cm, 3 patches between 5-20cm, 1 patch 50-75cm, 1 patch 150-200cm	-			
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Actions carried out	<ul style="list-style-type: none"> • 14 dive transects around the Port Fitzroy area. • Data collation, mapping, and SitRep. 																																
Plan for tomorrow	<ul style="list-style-type: none"> • Complete 10 fifteen-minute dive searches in Port Abercrombie and Motairehe Bay. 																																

Table 2: Transect locations, substrate, depth and presence of exotic Caulerpa (in yellow) completed during the delimitation survey on 23 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							
BRO143	175.3107595	-36.20733423	175.3132171	-36.20777932	M	14	9.7	8	7-8	8	Y
BRO146	175.3010451	-36.21826111	175.3028025	-36.21902926	D	14	19	8	3	8	Y
BRO140	175.3106181	-36.19173449	175.311252	-36.1922384	M	14	10	10	3-8	10	N
BRO141	175.3187729	-36.18535238	175.3204313	-36.18653962	D	14	18.9	8	3-8	8	Y
BRO148	175.3181316	-36.19147288	175.3183094	-36.19262216	D	14	14.4	4	2	3	Y
BRO144	175.3307227	-36.1898289	175.3297932	-36.18947275	D	14	14.4	8	3-8	8	Y
FITZ155	175.3608987	-36.16351523	175.3594502	-36.16488234	M	14	12	3	2	1.5	N
FITZ150	175.3595467	-36.18275781	175.3614145	-36.18165331	D	14	15.5	3	10	1.5	N
FITZ149	175.3484357	-36.20084925	175.3488023	-36.19947629	D	14	14.4	3	10-8	4	N
FITZ151	175.3363786	-36.1835511	175.3345745	-36.18236582	D	14	15.3	8	3-5	8	Y
FITZ154	175.336173	-36.1648574	175.3357643	-36.16648053	D	14	15.2	8	3-8	8	N
ABC152	175.3237217	-36.16826485	175.3247303	-36.1693576	D	15	14	8	3-8	8	N
ABC153	175.3015553	-36.16512971	175.3011968	-36.16408413	D	15	17	8	8-3	8	N
ABC157	175.3454585	-36.14849863	175.3472835	-36.14739287	D	15	13.2	5	3-5	6	N

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

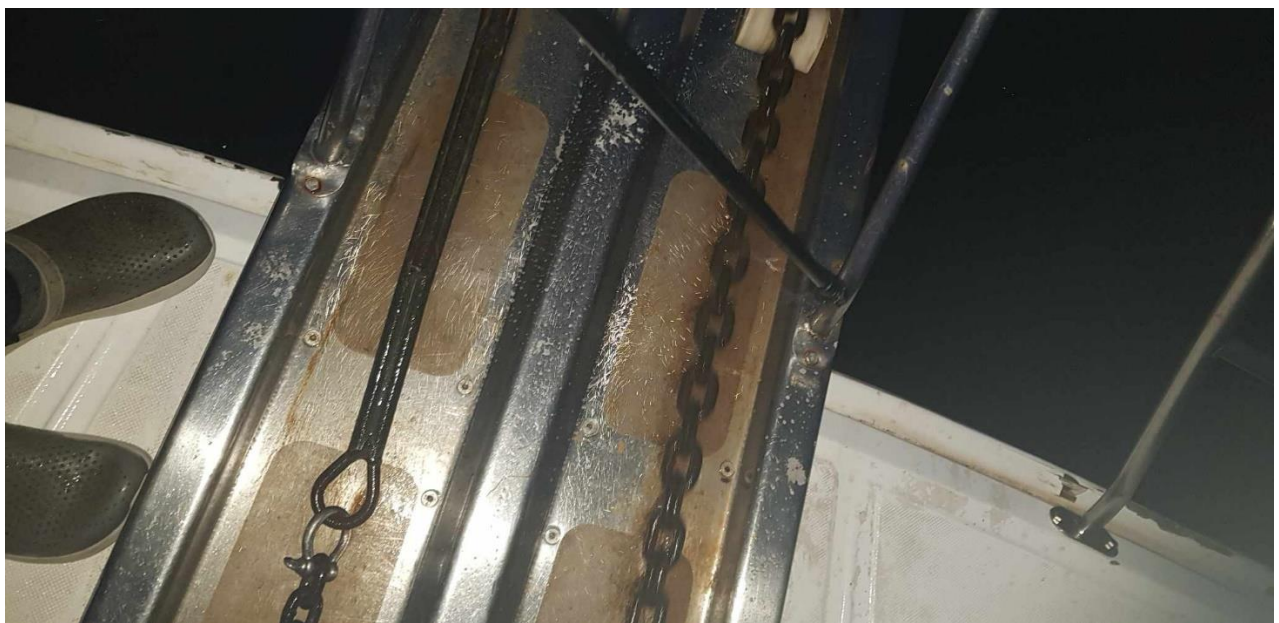
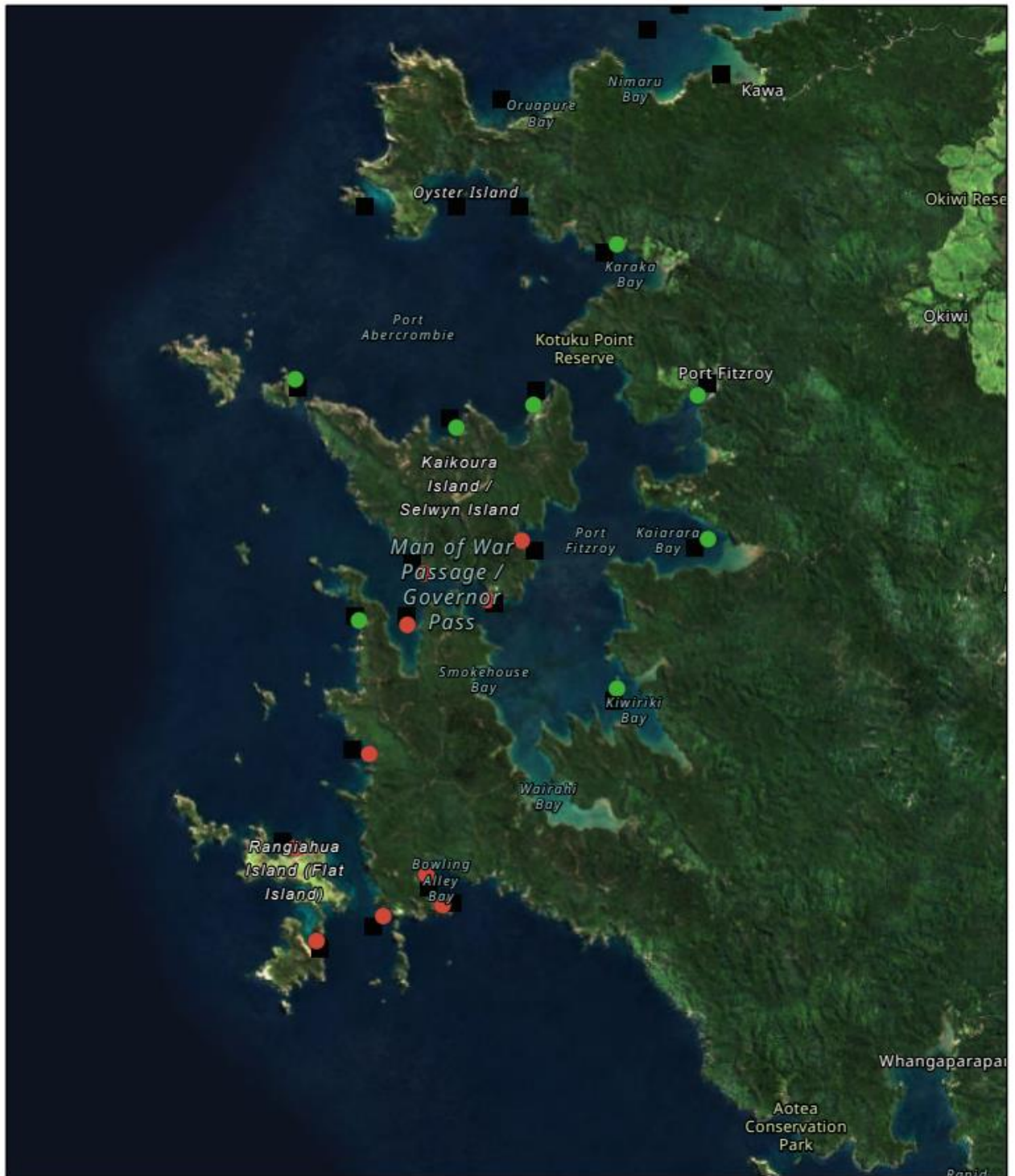


Figure 1: Anchor chain disinfection and dive gear disinfection post-diving at the infected sites at Aotea.



24/07/2023

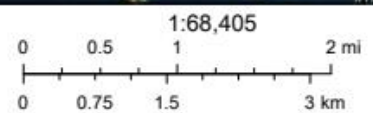


Figure 2: Start points without exotic *Caulerpa* (green circles), start points with exotic *Caulerpa* (red circles), and end (black squares) points for the dive searches completed around Aotea/Great Barrier Island 23 July 2023. Inset depicts close up of the Bowling Alley Bay and Broken Island sites.