

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

Co-ordinated by:	NIWA																											
Report Number	#004																											
Date and time	22 July 2023																											
Period covered	21 July 07:00-19:00																											
Summary of day's activities	<ul style="list-style-type: none"> - 700-0730 Breakfast at Mercury Cove, toolbox meeting set up gear and move onto site for the first dive in the bay. - 0745- 1230 Ten fifteen-minute dive transect searches in the Mercury Cove area (MCC128, MCC128/2, MCC174-179, MCC182 and MCCex1). Exotic Caulerpa found at MCC174, MCC182 and MCCex1 (Table 1, Figure 2). <p>Table 1: Summary of exotic Caulerpa findings</p> <table border="1"> <thead> <tr> <th>Site</th> <th>X</th> <th>Y</th> <th>Caulerpa found</th> </tr> </thead> <tbody> <tr> <td rowspan="7">MCC174</td> <td rowspan="7">175.7857944</td> <td rowspan="7">-36.62300142</td> <td>30 x 5cm patches</td> </tr> <tr> <td>16 x 20cm patch</td> </tr> <tr> <td>45 x 50cm patch</td> </tr> <tr> <td>35 x 100cm patches</td> </tr> <tr> <td>16 x 300cm patch</td> </tr> <tr> <td>20 x <500cm patch</td> </tr> <tr> <td>3% cover across the rest of transect</td> </tr> <tr> <td rowspan="3">MCC182</td> <td rowspan="3">175.7801763</td> <td rowspan="3">-36.62935025</td> <td>4 x 75cm patch</td> </tr> <tr> <td>5 x 100cm patch</td> </tr> <tr> <td>1% cover across rest of transect</td> </tr> <tr> <td rowspan="4">MCCex1</td> <td rowspan="4">174.8375283</td> <td rowspan="4">-36.3946487</td> <td>25 x 20cm patch</td> </tr> <tr> <td>20 x 100cm patch</td> </tr> <tr> <td>20 x 200cm patch</td> </tr> <tr> <td>1% cover across rest of transect</td> </tr> </tbody> </table> <ul style="list-style-type: none"> - 1230-1730 Clean and disinfect anchor, test and problem shoot Boxfish ROV (Figure 1), unfortunately the ROV had a fault that could not be repaired in the field. The team will dive the shallower ROV sites instead. Field team leader also contacted Ngati rehua representatives to update them of the arrival at Aotea tomorrow. - 1730-1800 Anchor at Mercury Cove for the night. 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	MCC174	175.7857944	-36.62300142	30 x 5cm patches	16 x 20cm patch	45 x 50cm patch	35 x 100cm patches	16 x 300cm patch	20 x <500cm patch	3% cover across the rest of transect	MCC182	175.7801763	-36.62935025	4 x 75cm patch	5 x 100cm patch	1% cover across rest of transect	MCCex1	174.8375283	-36.3946487	25 x 20cm patch	20 x 100cm patch	20 x 200cm patch	1% cover across rest of transect
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Actions carried out	<ul style="list-style-type: none"> • 11 dives around Ahuahu/Great Mercury Island. • Field test and problem solve issues with Boxfish ROV. • Data collation, mapping and SitRep. 																											
Plan for tomorrow	<ul style="list-style-type: none"> • Transit to Aotea if weather conditions allow (it is forecast to be high winds tomorrow) • Complete 10 fifteen-minute dive searches in Broken Islands, Bowling Alley Bay and Tryphena area. 																											

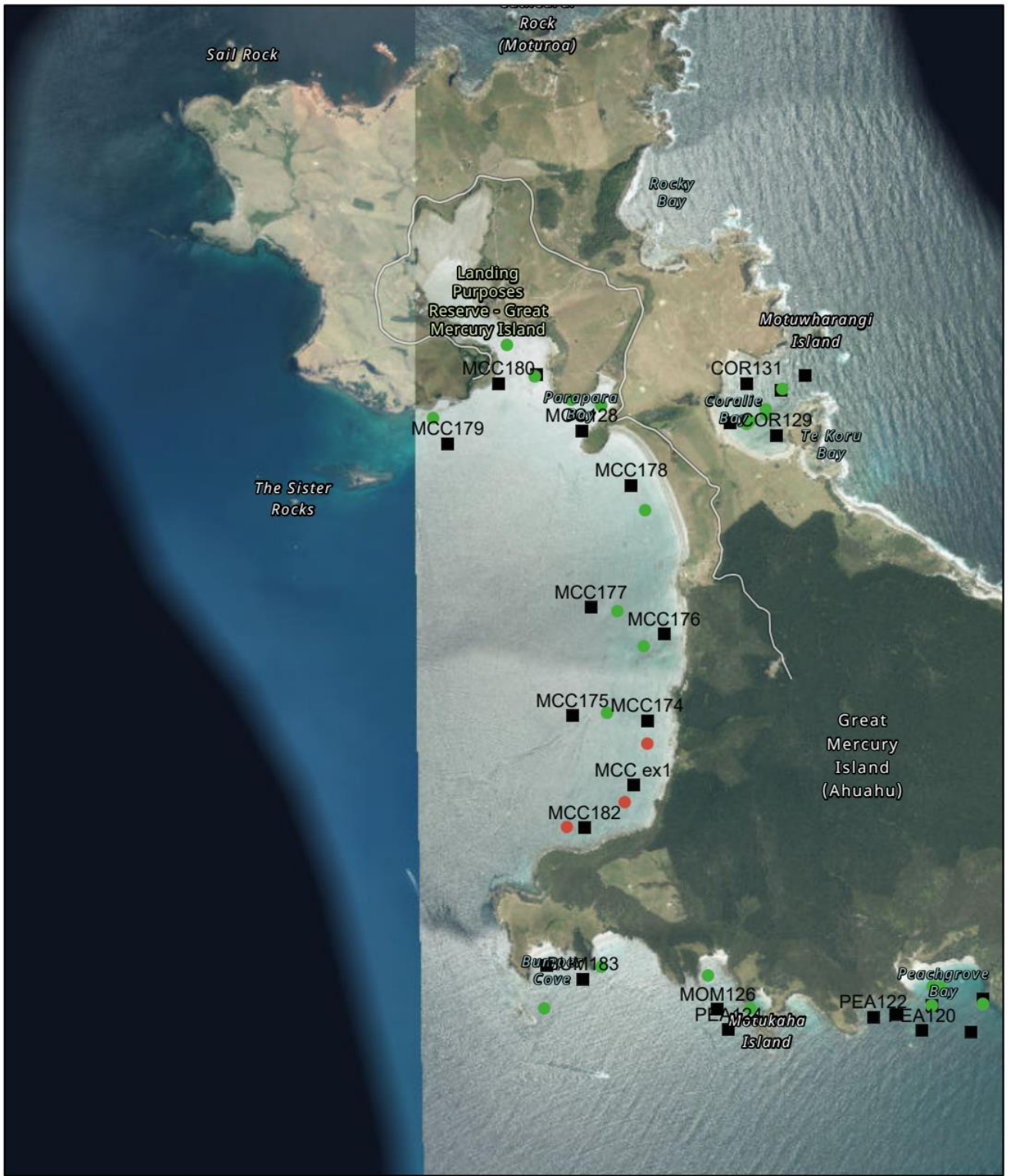
Table 2: Transect locations, substrate, depth and presence of exotic Caulerpa (in yellow) completed during the delimitation survey in July 2023 by NIWA divers

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							
MCC175	175.7803349	-36.62283481	175.7828286	-36.62259181	D	15	20.3	8	3	8	N
MCC177	175.7814441	-36.61644306	175.7833953	-36.61660472	D	14	16	8	3-2	10	N
MCC176	175.786834	-36.61788511	175.785374	-36.61862548	M	14	6	8	7-5	8	N
MCC179	175.7706643	-36.60706911	175.7695578	-36.60562091	D	14	18.5	8	3	7	N
MCC128	175.7804119	-36.60610503	175.7795711	-36.60430716	M	14	6.6	8	3	7	N
MCC128/2	175.7804119	-36.60610503	175.7817594	-36.6045829	S	14	4.5	6	3-8	5	N
MCC178	175.7841391	-36.60923243	175.7851614	-36.61064781	M	14	6.9	8	3-5	8	N
MCC174	175.7857944	-36.62300142	175.7858554	-36.62433946	M	14	6.4	8	3	8	Y
MCC182	175.7814505	-36.62940218	175.7801763	-36.62935025	D	15	10	8	3	8	Y
MCC ex1	175.7849117	-36.62682629	175.7842876	-36.6278201	M	14	7.2	8	3	8	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: Boxfish ROV problem solving (left) and anchor chain disinfection post diving at the infected sites MCC174, MCC182 & MCCex1 (right).



21/07/2023

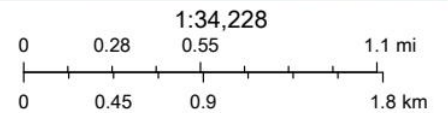


Figure 2: Start points without caulerpa (green circles), start points with caulerpa (red circles), and end (black squares) points for the dive searches completed around Ahuahu/Great Mercury Island on 21 July 2023.