

Expansion of Hong Kong International Airport into a Three-Runway System

Post-Translocation Coral Monitoring Report

December 2018

Mott MacDonald
3/F Mapletree Bay Point
348 Kwun Tong Road
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.hk

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This Post-Translocation Coral Monitoring Report has been reviewed and certified by the Environmental Team Leader (ETL) in accordance with the Coral Translocation Plan.

Certified by:

A handwritten signature in black ink, appearing to read 'Terence Kong', written in a cursive style.

Terence Kong
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date 15 January 2019

Our Ref : 60440482/C/JCHL190116

By Email

Airport Authority Hong Kong
HKIA Tower, 1 Sky Plaza Road
Hong Kong International Airport
Lantau, Hong Kong

Attn: Mr. Lawrence Tsui, Principal Manager

16 January 2019

Dear Sir,

Contract No. 3102
3RS Independent Environmental Checker Consultancy Services

Post-Translocation Coral Monitoring Report

Reference is made to the Environmental Team's submission of Post-Translocation Coral Monitoring Report following the requirement set out in section 4.3 of the Coral Translocation Plan.

We have no adverse comment and verify the captioned submission.

Should you have any query, please feel free to contact the undersigned at 3922 9376.

Yours faithfully,
AECOM Asia Co. Ltd.



Jackel Law
Independent Environmental Checker

Contents

1	Introduction	0
1.1	Background	0
1.2	Purpose of the Report	1
2	Post-translocation Monitoring Methodology	2
3	Summary of Post-translocation Monitoring Surveys	5
3.1	Results of Post-translocation Monitoring Surveys	5
3.1.1	January & February 2017	7
3.1.2	March 2017	7
3.1.3	April 2017	8
3.1.4	Investigation and Ad-hoc Monitoring Surveys	8
3.1.5	October 2017	11
3.1.6	April 2018	12
3.2	Summary of Action / Limit Level	13
4	Conclusion	14
	Appendices	15
Appendix A	Post-translocation Monitoring Survey Data from January 2017 to April 2018	
Appendix B	Photos of Control Corals (Tagged) at Recipient Site	
Appendix C	Photos of Translocated Corals (Tagged) at Recipient Site	

1 Introduction

1.1 Background

On 7 November 2014, the Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-185/2014) for the “Expansion of Hong Kong International Airport into a Three-Runway System” (the Project) was approved and an Environmental Permit (EP) (Permit No.: EP-489/2014) was issued for the construction and operation of the Project.

The Project covers the expansion of the existing airport into a three-runway system (3RS) with key project components comprising land formation of about 650ha and all associated facilities and infrastructure which primarily include:

- New third runway with associated taxiways, aprons and aircraft stands;
- New passenger concourse building;
- Expansion of the existing Terminal 2 (T2) building; and
- Related airside and landside works, and associated ancillary and supporting facilities.

The EIA predicted that the Project will have direct impact on the coral communities along the northern seawall of the airport island. Pursuant to Condition 2.12 of the EP, a Coral Translocation Plan (CTP) was submitted in May 2016 which reported the findings of baseline coral dive survey and provided recommendations on recipient sites, translocation methodology and a proposed monitoring programme for the translocated corals. As set out in the Section 3.6 of the CTP, a Detailed Coral Translocation Report (DCTR) was submitted in June 2017 reporting results of pre-translocation survey at the donor sites and recipient sites, coral translocation, preliminary post-translocation surveys and the tagged coral colony surveys.

As reported in the DCTR, the translocation of 384 gorgonian coral colonies from the donor site along the north-eastern part of the airport island and the northern seawall to the recipient site (RT2) at Yam Tsai Wan (YTW) was completed by December 2016. The location of RT2 is shown in **Figure 1**. To enable comprehensive monitoring of the translocated corals, a total of 85 translocated corals and 20 control corals (natural corals at RT2) were selected and tagged in December 2016 and January 2017.

Figure 1: Location of Recipient Site (RT2)



1.2 Purpose of the Report

In accordance with the CTP, a Post-Translocation Coral Monitoring Report will be submitted to Environmental Protection Department (EPD) and Agriculture, Fisheries and Conservation Department (AFCD) after the completion of the monitoring works to review results from the post-translocation monitoring surveys by checking against the baseline conditions that were gathered during the tagged coral survey just after completion of the translocation. This report is to document the post-translocation monitoring in the 15 months period between January 2017 and April 2018 to fulfil the CTP requirement.

There are two extra monitoring surveys scheduled in October 2018 and April 2019 as proposed in the DTCR. The results will be reported in respective Quarterly EM&A Reports but not form part of this report.

2 Post-translocation Monitoring Methodology

The post-translocation monitoring was conducted according to the methodology, schedule, Action/Limit Levels, and event/action plan set out in the DCTR. As scheduled, the post-translocation monitoring began in January 2017 and a total of six rounds have been completed by April 2018 (**Table 1**).

Table 1: Post-translocation Monitoring Programme and Monitoring Dates

Post-Translocation Monitoring Survey	Timing after Completion of Translocation	Monitoring Survey Date
1 st Monitoring Survey	15 days	20, 21 January 2017
2 nd Monitoring Survey	30 days	4, 5 February 2017
3 rd Monitoring Survey	2 Months	3, 4 March 2017
4 th Monitoring Survey	3 Months	5 April 2017
5 th Monitoring Survey	9 Months	25, 26 October 2017
6 th Monitoring Survey	15 Months	2, 3 April 2018

Each tagged coral colony (tagged translocated corals and tagged natural corals) was monitored by trained divers. The coral colonies were photographed, and monitoring data were recorded on waterproof paper. The results of each monitoring survey were compared against the baseline results from the tagged coral survey.

The following information were collected for each tagged coral:

- Size (cm)
- Partial Mortality
- General health condition of the coral
- Sediment

The change in partial mortality (PM) was calculated using the following formula:

$$PM_b - PM_m = \% \text{ change in partial mortality}$$

Where PM_b = partial mortality during baseline survey (tagged coral survey after completion of translocation) and PM_m = partial mortality during post-translocation monitoring survey.

Coral health was measured on an ordinal scale of 0 to 5 with 0 being dead and 5 being very healthy. Photographic records of the translocated and indigenous coral colonies were taken while maintaining as close as possible to the same aspect and orientation as photographs taken during the tagged coral survey.

The results of the post-translocation monitoring were reviewed and compared with reference to the results of the tagged coral survey (recorded corals having same condition as in the pre-translocation stage), as this was carried out immediately after translocation works and thus represents a good baseline for comparison.

If observations of any die-off / abnormal conditions of the translocated corals are made during the post-translocation monitoring, the ET shall inform the AAHK, Independent Environmental Checker

(IEC), and AFCD, and liaise with AFCD to investigate any mitigation measures needed. The ET would identify the source of impact causing die-off / abnormal conditions of the translocated corals and if it was related to the 3RS Project, the ET would discuss with the relevant 3RS Contractor(s) that caused impacts to the translocated corals and the AAHK on any action to be taken by the Contractor(s).

Post-translocation monitoring results were evaluated against the Action and Limit Levels defined in CTP (**Table 2**). Evaluation was based on recorded changes in percentage of partial mortality of the corals.

Table 2: Action and Limit Levels for Post-Translocation Coral Monitoring

Parameter	Action Level Definition	Limit Level Definition
Mortality	If during Impact Monitoring a 15% increase in the percentage of partial mortality on the corals occurs at more than 20% of the translocated coral colonies that is not recorded on the original corals at the recipient site, then the Action Level is exceeded.	If during the Impact Monitoring a 25% increase in the percentage of partial mortality at more than 20% of the translocated coral colonies occurs that is not recorded at the original corals at the recipient site, then the Limit Level is exceeded.

Notes: The percentage change in partial mortality of the tagged translocated and control corals are both determined by comparing the partial mortality recorded during each post-translocation monitoring with reference to the partial mortality observed during the baseline conditions, as represented by the tagged coral survey results.

If the defined Action Level or Limit Level for coral monitoring was exceeded, the actions as set out in **Table 3** would be implemented.

Table 3: Event and Action Plan for Coral Post-Translocation Monitoring

Event	ET Leader	IEC	AAHK	Relevant Contractor for the 3RS Project*
Action Level Exceedance	Check monitoring data; Identify the source(s) of impact and investigate if the exceedance is project-related; Inform the IEC, AAHK and Contractor* of the findings; Increase the monitoring to at least once a month to confirm findings; Liaise with AFCD to investigate any mitigation measures needed, and propose mitigation measures for consideration.	Discuss monitoring with the ET and the Contractor*; Review proposals for additional monitoring and any other measures submitted by the Contractor* and advise the AAHK accordingly.	Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; Make agreement on the measures to be implemented.	Inform the AAHK and ET and confirm notification of the non-compliance in writing; Discuss with the ET and the IEC and propose measures to the IEC and the AAHK; Implement the agreed measures.
Limit Level Exceedance	Undertake Steps 1-5 as in the Action Level Exceedance. If further exceedance of Limit Level is found project-related, suspend relevant construction works	Discuss monitoring with the ET and the Contractor*; Review proposals for additional monitoring and any other measures submitted by the Contractor*	Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; Make agreement on the measures to be implemented.	Inform the AAHK and ETL and confirm notification of the non-compliance in writing; Discuss with the ET and the IEC and propose measures to

until an effective solution is identified.	and advise the AAHK accordingly.	the IEC and the AAHK; Implement the agreed measures.
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*Note: "Contractor" in the table shall refer to relevant 3RS Contractor(s) that cause impacts to the translocated corals.

3 Summary of Post-translocation Monitoring Surveys

3.1 Results of Post-translocation Monitoring Surveys

A summary of post-translocation monitoring surveys from January 2017 to April 2018 is shown in **Table 4** and the full set of survey data is presented in **Appendix A**. Photographs of Control and Translocated Corals (tagged) throughout the monitoring period are shown in **Appendix B** and **Appendix C** respectively.

Table 4: Summary of the Post-Translocation Monitoring Surveys and Ad-hoc Surveys conducted from January 2017 to April 2018

	General Health Conditions ^(a)	% Change in Partial Mortality ^{(b)(c)}	Triggering of Action Level ^(d)	Triggering of Limit Level ^(e)
First Round of Survey (January 2017)				
Control gorgonian corals (tagged)	3-5 (Average: 4.3)	≤5% change for 10% of the tagged corals (Average PM: 9.0%)	No	No
Translocated gorgonian corals (tagged)	3-5 (Average: 4.0)	≤10% change for 18.8% of the tagged corals (Average PM: 9.4%)		
Second Round of Survey (February 2017)				
Control gorgonian corals (tagged)	3-5 (Average: 4.0)	≤5% change for 10% of the tagged corals (Average PM: 9.0%)	No	No
Translocated gorgonian corals (tagged)	3-5 (Average: 3.5)	≤10% change for 18.8% of the tagged corals (Average PM: 9.4%)		
Third Round of Survey (March 2017)				
Control gorgonian corals (tagged)	4-5 (Average: 4.1)	<15% change for 70% of the tagged corals and ≥15% change for 30% of the tagged corals (Average PM: 19.3%)	No	No
Translocated gorgonian corals (tagged)	2-4 (Average: 3.5)	<15% change for 85.9% of the tagged corals and ≥15% change for 10.6% of the tagged corals (Average PM: 16.0%)		
Fourth Round of Survey (April 2017)				
Control gorgonian corals (tagged)	0-3 (Average: 1.9)	<25% change for 5% of the tagged corals and ≥25% change for 95% of the tagged corals (Average PM: 73.0%)	No	No
Translocated gorgonian corals (tagged)	1-4 (Average: 2.0)	<25% change for 4.7% of the tagged corals		

	General Health Conditions ^(a)	% Change in Partial Mortality ^{(b)(c)}	Triggering of Action Level ^(d)	Triggering of Limit Level ^(e)
		and $\geq 25\%$ for 94.1% of tagged corals (Average PM: 73.0%)		
Ad-hoc Survey in June 2017				
Control gorgonian corals (tagged)	0-4 (Average: 2.1)	<25% change for 5% of the tagged corals and $\geq 25\%$ change for 95% of the tagged corals (Average PM: 73.5%)	No	No
Translocated gorgonian corals (tagged)	0-4 (Average: 2.0)	<25% change for 5.9% of the tagged corals and $\geq 25\%$ change for 94.1% of the tagged corals (Average PM: 73.8%)		
Ad-hoc Survey in July 2017				
Control gorgonian corals (tagged)	0-5 (Average: 2.9)	<25% change for 10% of the tagged corals and $\geq 25\%$ change for 90% of the tagged corals (Average PM: 68.8%)	No	No
Translocated gorgonian corals (tagged)	0-5 (Average: 3.0)	<25% change for 5.9% of the tagged corals and $\geq 25\%$ change for 94.1% of the tagged corals (Average PM: 72.7%)		
Ad-hoc Survey in September 2017				
Control gorgonian corals (tagged)	0-5 (Average: 2.7)	<25% change for 10% of the tagged corals and $\geq 25\%$ change for 90% of the tagged corals (Average PM: 67.8%)	No	No
Translocated gorgonian corals (tagged)	0-4 (Average: 2.3)	<25% change for 5.9% of the tagged corals and $\geq 25\%$ change for 94.1% of the tagged corals (Average PM: 76.9%)		
Fifth Round of Survey in October 2017				
Control gorgonian corals (tagged)	0-5 (Average: 2.4)	<25% change for 10% of the tagged corals and $\geq 25\%$ for 90% of the tagged corals (Average PM: 67.3%)	No	No
Translocated gorgonian corals (tagged)	0-4 (Average: 2.5)	<25% change for 5.9% of the tagged corals and $\geq 25\%$ for 94.1% of the tagged corals (Average PM: 74.6%)		
Sixth Round of Survey in April 2018				
Control gorgonian corals (tagged)	0-3 (Average: 2.1)	<25% change for 0% of the tagged corals	No	No

	General Health Conditions ^(a)	% Change in Partial Mortality ^{(b)(c)}	Triggering of Action Level ^(d)	Triggering of Limit Level ^(e)
		and $\geq 25\%$ for 100% of the tagged corals (Average PM: 74.0%)		
Translocated gorgonian corals (tagged)	0-4 (Average: 2.4)	<25% change for 5.9% of the tagged corals and $\geq 25\%$ for 94.1% of the tagged corals (Average PM: 76.4%)		

Notes:

- (a) General health conditions of coral were measured on an ordinal scale of 0 to 5 (0=dead, 5=very healthy).
- (b) The percentage change in partial mortality of the tagged translocated and control corals are both determined by comparing the partial mortality recorded during each post-translocation monitoring with reference to the partial mortality observed during the baseline conditions, as represented by the tagged coral survey results.
- (c) Coral showing no change in partial mortality is not presented in this account.
- (d) As defined in the approved CTP, the Action Level is triggered if during monitoring a 15% increase in the percentage of partial mortality occurs at more than 20% of the translocated coral colonies that is not recorded on the original (control) corals at the recipient site.
- (e) As defined in the approved CTP, the Limit Level is triggered if during monitoring a 25% increase in the percentage of partial mortality occurs at more than 20% of the translocated coral colonies that is not recorded on the original (control) corals at the recipient site.

3.1.1 January & February 2017

The survey results in January and February 2017 were very similar, 18 of the 20 control colonies showed no change in PM. In both surveys, 69 of 85 translocated colonies showed no change in PM. Based on **Table 4** which summarizes the post-translocation monitoring survey results from January 2017 to April 2018, $\leq 5\%$ change was recorded on 10% of the tagged control corals and $\leq 10\%$ change was recorded on 18.8% of tagged translocated corals. As none of the control corals and translocated corals recorded a 15% or 25% increase in the percentage change in PM, the Action/Limit Level was not triggered.

The average PM of control and translocated corals was 9.0% and 9.4% respectively in both surveys. The average health of both control and translocated corals ranged from 3 to 5 which is the same as the range recorded during the tagged coral survey.

3.1.2 March 2017

Based on the results from the third round of post-translocation monitoring, <15% change was recorded on 70% of the control (14 out of 20 tagged control colony) and 85.9% of translocated corals (73 out of 85 tagged translocated coral colony) and $\geq 15\%$ change was also recorded on 30% of the control (6 out of 20 tagged control colony) and 10.6% of translocated corals (9 out of 85 tagged translocated colony). As a 15% and 25% increase in PM were recorded in less than 20% of translocated coral colony, the Action Level and Limit Level were not triggered.

The average PM for control and translocated corals was 19.3% and 16.0% respectively. The average general health condition for this round ranged from 4 to 5 for control corals and 2 to 4 for translocated corals.

Compared with the first two rounds of monitoring, an increase in percentage change in PM was observed on both control and translocated corals in March. The percentage change in PM remained the same in both first to second surveys but experienced small increase in the third survey in March.

3.1.3 April 2017

Low PM and good general health conditions were recorded in both tagged control and translocated corals from January to March 2017. However, significant increase in PM and deterioration in health was recorded in both tagged translocated and control corals in the April 2017 monitoring. All control colonies showed change in PM which ranged from 20% to 90%. For the translocated corals, 84 out of 85 corals show 10% to 95% change in PM. One translocated coral showed no change in PM. Based on the results of the fourth post-translocation monitoring, <25% change was recorded on 5% of the control corals and $\geq 25\%$ change was recorded on 95% of the control corals. Similarly, for translocated corals, <25% change was recorded on 4.7% of the tagged corals and $\geq 25\%$ change was recorded on 94.1% of tagged corals. The average PM for both control and translocated corals are 73% and the average coral health for the control and translocated corals was 1.9 and 2.0 respectively. The general health condition ranged from 0 to 3 for controls and 1 to 4 for translocated corals.

Although a significant increase in PM was recorded in the fourth round of monitoring, the changes in PM were found at both the tagged translocated and control corals, the Action and Limit Levels as defined in the CTP were not triggered. Nonetheless, the CTP stipulates that if observations of any die-off / abnormal conditions of the translocated corals are made during post-translocation monitoring, the ET shall inform AAHK, IEC and AFCD and liaise with AFCD to investigate any mitigation measures needed. The ET is also required to identify the source of the impact causing die-off / abnormal conditions of the translocated corals and if it is related to the Project. To this end, the ET investigated the significant change in PM identified from the monitoring in April 2017 and had a meeting with AFCD and EPD in June 2017 to discuss the issue and the planned follow-up actions.

3.1.4 Investigation and Ad-hoc Monitoring Surveys

A set of investigation actions and *ad-hoc* surveys on top of the CTP's requirements were conducted after high mortality rate was recorded in April 2017. The investigation works completed by the ET include:

- Review of weather conditions, red tide, water quality monitoring data;
- Substrate check and review of sediment deposition;
- Review of other projects and their translocated corals;
- *Ad-hoc* monthly monitoring of all translocated and control corals;
- *Ad-hoc* dive check of natural corals in YTW, Tai Mo To (TMT), and Sham Shui Kok (SSK); and
- *Ad-hoc* water quality monitoring (WQM)

Aside from investigating the potential cause(s) of the significant change in PM and health in April 2017, whether the high mortality is related to the 3RS construction works was also investigated. This investigation was conducted through the review of WQM data, and dive check of natural corals in adjacent areas, including other sites outside RT2 in YTW. Investigation works looking at the potential causes of the significant change in PM were undertaken with the findings summarized below.

***Ad-hoc* Monitoring of All Translocated and Control Corals at the Recipient Site**

Three rounds of *ad-hoc* coral dive surveys were conducted for both translocated corals (tagged and untagged) and control corals (tagged) at RT2 in June, July and September 2017. Key results of the *ad-hoc* monitoring are shown in **Table 4** which shows that the health conditions and

changes in PM of the tagged translocated corals are largely stabilized as mentioned in **Section 3.1.6**.

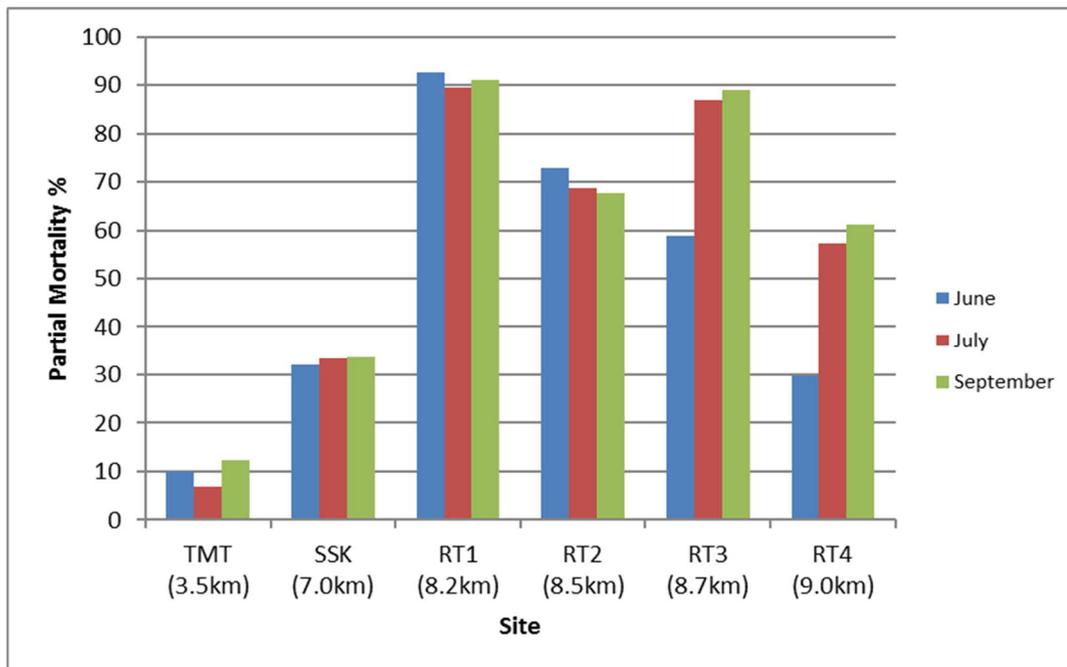
Ad-hoc Dive Surveys of Natural Corals at Yam Tsai Wan, Sham Shui Kok and Tai Mo To

Twenty randomly tagged natural gorgonian colonies were monitored at the four sites at YTW (RT1, RT2, RT3, RT4), TMT and SSK in June, July and September 2017. The locations of the six sites are illustrated in **Figure 2**. The monitoring results of the six sites were compared with the control (natural) corals at RT2, as presented in **Graph 1**. The results identified that while TMT and SSK are closer to the 3RS Project Site, the average PM levels of natural corals at TMT and SSK were generally lower than the natural colonies at YTW. This suggests that the relatively high PM levels at YTW are unlikely to be related to the 3RS marine works activities, but rather, seem to have been a discrete incident.

Figure 2. Locations of Six Coral Dive Survey Sites and Sediment Trap Deployment



Graph 1. Comparison of Average Partial Mortality of Tagged Natural Corals at Six Survey Sites

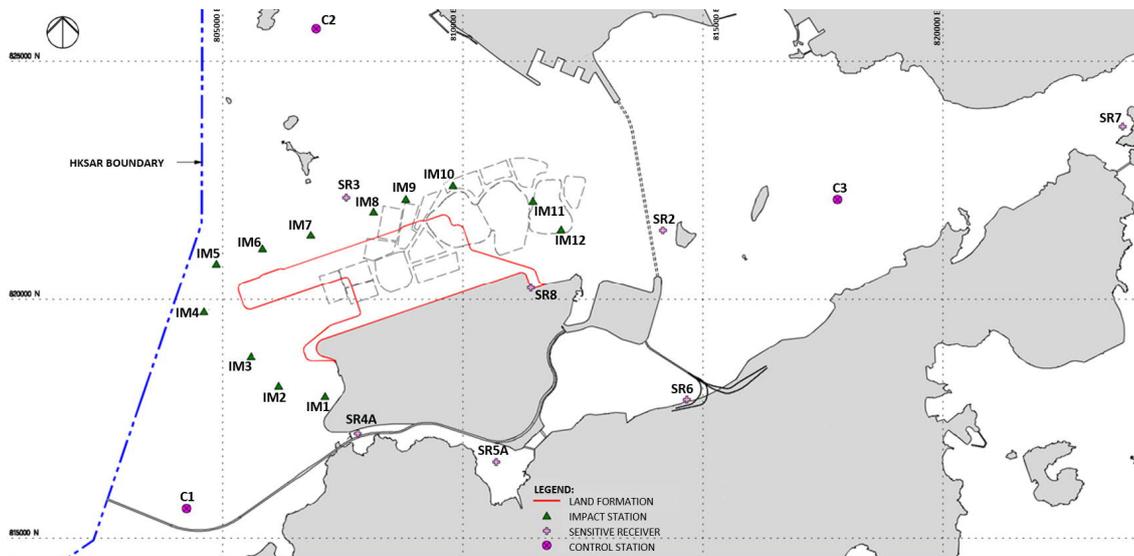


Note: The distances in brackets denote the distance of the survey locations from the 3RS Project Site boundary.

Review of Environmental Conditions

- **Review of weather conditions:** Relevant information available from the Hong Kong Observatory was reviewed. There were no strong monsoon signal, typhoon and cold weather that could have potentially affected coral health conditions from January to April 2017, before the significant change of PM was identified.
- **Review of any reported red tides / algal blooms that may have affected Yam Tsai Wan:** According to information available from AFCD, no red tides were reported from January to April 2017, before the change in PM. However, a University of Hong Kong coral specialist consulted by the ET reported that algal bloom incidents were observed at Kap Shui Mun, Sham Wat and Tai O in January 2017. The bloom resembles *Microcystis* sp. known to produce hepatoxins that have chronic harmful effects on fish and shellfish. Harmful algal blooms with some potential for residual effects may have occurred in north Lantau waters near YTW, thus these blooms may have been associated with the significant change of PM at RT2.
- **Review of water quality:** pH, DO, temperature, salinity and total alkalinity were measured at the six *ad-hoc* survey sites in June, July and September 2017. Most of the parameters generally fell within natural fluctuations at Station C3 (3RS WQM programme control station near YTW) between January and September 2017. Results indicated that the rate of salinity drop was higher in 2017 as compared to 2016 in the area surrounding RT2, and higher water temperature was recorded in 2017 than 2016. There was also a decrease in DO during the wet season. Hence the corals might have been exposed to an interplay of environmental stresses, including salinity, DO and thermal stresses, leading to unfavourable water quality conditions before April 2017.

Figure 3. Locations of 3RS Water Quality Monitoring Stations



- **Review of sediment deposition:** The Sediment trap results retrieved from RT2, RT4 and TMT in late September revealed that relatively high sedimentation at RT2 was recorded compared to the other monitored site at YTW. The relationship between sedimentation rate and coral mortality is not clearly known because even though the corals at TMT have the lowest PM among the three sites, the sedimentation rate at TMT is not the lowest. Similarly, even though the deposition rate at RT2 was higher than TMT and RT4 during the period of sediment trap deployment, there is no clear relationship between deposition rate and partial mortality. Although no apparent relationship was evident between high sedimentation and the high PM, a possible detrimental effect from sedimentation on the translocated corals at RT2 cannot be ruled out.

Conclusion of the Investigation and *Ad-hoc* Monitoring Surveys

The *ad-hoc* survey results of natural corals closer to the 3RS Project Site indicated that the relatively high PM levels identified in control and translocated corals at YTW in April 2017 were unlikely to be related to 3RS marine works activities, but rather, seem to have been a discrete incident. Other potential causes of high PM were evaluated, however it is not possible to single out one specific cause of the high coral PM in the YTW area. Based on the results of the investigation works undertaken, the relatively high PM levels identified in April 2017 are most likely to have been caused by an interplay of various environmental factors, rather than one single factor.

3.1.5 October 2017

The fifth round of monitoring survey was resumed and conducted as scheduled in October 2017. All control and translocated coral colonies showed changes in PM which ranged from 15 to 90% for controls and 10 to 95% for translocated corals. Based on the results of the fifth post-translocation monitoring, $\geq 25\%$ change was recorded on 80 out of 85 translocated corals (94.1% of the tagged translocated coral colony). Similarly, $\geq 25\%$ change was recorded on 18 out of 20 control corals (90% of the tagged control coral colony). The average PM of control and translocated corals was 67.3% and 74.6% respectively. The average health condition ranged from 0 to 5 for control corals and 0 to 4 for translocated corals. Since the changes in PM of the

translocated corals were also recorded on the control colonies, the Action and Limit Levels were not triggered.

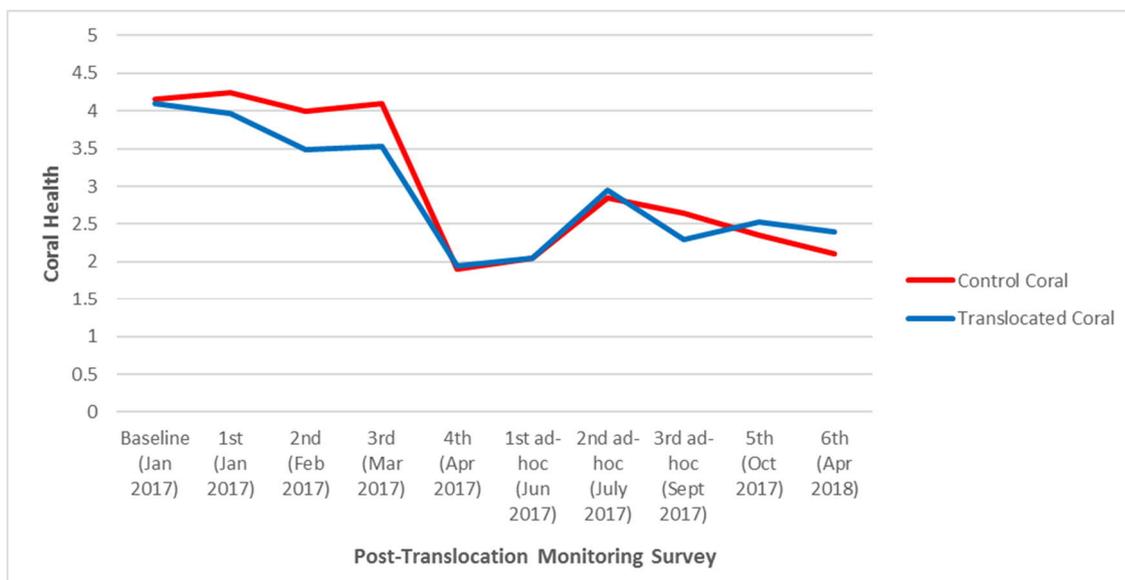
The translocated and control corals were largely stabilized in October 2017 after the $\geq 25\%$ change in PM maintained at the level of 94.1% for translocated corals from April to October 2017 and $\geq 25\%$ change in PM maintained at the range 90%-95% for control corals through the same period. As the variation in PM was limited during this long period extending from the high PM incident in April to the monitoring survey following the last *ad-hoc* monitoring survey (a span of seven months), the stabilization condition of control and translocated corals is supported.

3.1.6 April 2018

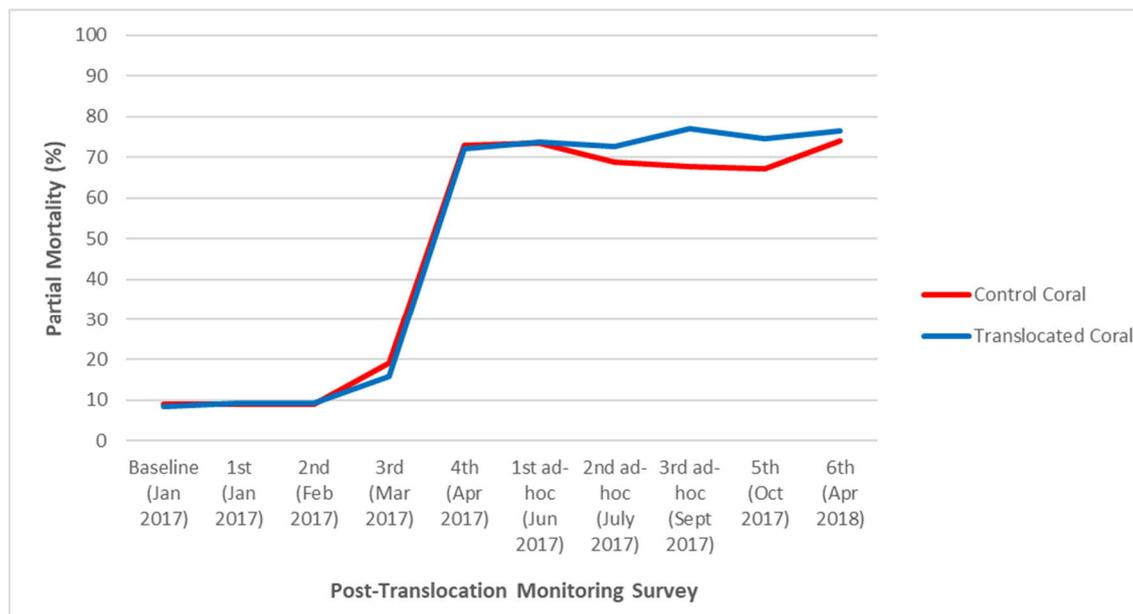
The results in April 2018 were similar to those in October 2017 in terms of the change in PM for translocated corals. As shown in **Table 4**, $\geq 25\%$ change in PM in translocated corals remained at 94.1 from October 2017 to April 2018, while the average PM increased from 74.6% to 76.4% in the same period. For control corals, $\geq 25\%$ change in PM increased from 90% to 100% from October 2017 to April 2018. The general health condition remained between the range of 2.0 and 3.0. The Action and Limit Levels were not triggered during this round of monitoring. The similarity of the results between October 2017 and April 2018 suggested the condition of the corals have stabilized.

The trend of coral health and PM in the six pre-determined monitoring surveys and the three *ad-hoc* surveys conducted between January 2017 and April 2018 are shown in **Graphs 2 and 3**.

Graph 2. Changes in Average Coral Health from January 2017 to April 2018



Graph 3. Changes in Average Partial Mortality from January 2017 to April 2018



3.2 Summary of Action / Limit Level

The Action and Limit Levels stipulated in the CTP were not triggered throughout the 15-month monitoring period. As mentioned in **Table 2**, the Action Level for mortality is triggered “if during impact monitoring a 15% increase in the percentage of PM on the corals occurs at more than 20% of the translocated coral colonies that is not recorded on the original corals at the recipient site”. Similarly, the Limit Level is triggered if “a 25% increase in the percentage of PM at more than 20% of the translocated coral colonies occurs that is not recorded at the original corals at the recipient site”. Based on the results of the six post-translocation monitoring surveys and the three ad-hoc surveys, no Action or Limit Level was triggered because the condition listed above was not met.

4 Conclusion

Coral post-translocation monitoring was conducted as planned in the Detailed Coral Translocation Report (DCTR). Six monitoring surveys were completed between January 2017 and April 2018. The 85 tagged translocated corals and 20 control corals were revisited and monitored at the recipient site in Yam Tsai Wan (YTW) during each survey. Action and Limit Levels were not triggered throughout the monitoring period. Investigation actions and ad-hoc monitoring surveys were conducted after high partial mortality (PM) in both translocated and control corals was recorded in April 2017. Findings from the investigation and ad-hoc monitoring showed that the relatively high PM levels at YTW are unlikely to be related to the 3RS marine works activities, but rather, seem to have been a discrete incident. It seems that the relatively high PM levels were most likely caused by an interplay of environmental factors, rather than one single factor.

Despite the high PM incident that occurred in April 2017, the coral translocation from Airport Island to YTW is considered successful. All translocated corals were successfully moved and settled in the pre-determined recipient site and thereafter were found to be in reasonable condition for at least three months after translocation. Overall, the post-translocation monitoring effort has shown that translocated coral health and survivability has been similar to that of the naturally occurring control corals at the translocation recipient site.

Appendices

**Appendix A Post-translocation Monitoring
Survey Data from January 2017 to April 2018**

Partial Mortality and Coral Health Data for Control Corals from January 2017 to April 2018

Coral Tag No.	Baseline Colony Height (cm)	Partial Mortality (%)										Coral Health									
		Baseline	1st Survey (Jan 2017)	2nd Survey (Feb 2017)	3rd Survey (Mar 2017)	4th Survey (Apr 2017)	1st ad-hoc (Jun 2017)	2nd ad-hoc (July 2017)	3rd ad-hoc (Sep 2017)	5th Survey (Oct 2017)	6th Survey (Apr 2018)	Baseline	1st Survey (Jan 2017)	2nd Survey (Feb 2017)	3rd Survey (Mar 2017)	4th Survey (Apr 2017)	1st ad-hoc (Jun 2017)	2nd ad-hoc (July 2017)	3rd ad-hoc (Sep 2017)	5th Survey (Oct 2017)	6th Survey (Apr 2018)
C1	23	10	10	10	15	90	90	95	100	100	100	4	4	4	4	1	1	2	0	0	0
C2	24	10	10	10	15	50	50	40	40	40	45	4	4	4	4	3	2	3	3	3	3
C3	59	20	15	15	25	50	50	40	35	30	73	4	4	4	4	3	3	3	2	3	3
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C5	39	0	5	5	20	50	50	60	55	50	31	4	4	4	4	3	3	4	5	3	2
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C7	22	10	10	10	20	60	60	60	55	50	75	4	5	4	5	3	3	3	3	3	2
C8	10	10	10	10	25	100	100	100	100	100	100	4	4	4	4	0	0	0	0	0	0
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C10	12	0	0	0	10	80	80	70	70	70	83	5	5	4	4	1	2	3	5	5	3
C11	17	10	10	10	15	100	100	100	100	100	100	4	4	4	4	0	0	0	0	0	0
C12	24	5	5	5	15	90	90	80	80	75	80	4	5	4	4	1	1	3	3	4	3
C13	12	15	15	15	25	80	80	70	65	70	67	4	4	4	4	2	3	3	3	3	3
C14	23	5	5	5	20	90	90	80	80	80	86	4	4	3	4	1	1	3	2	2	2
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C16	17	10	10	10	25	90	90	80	85	80	93	5	5	4	4	1	1	3	5	3	3
C17	15	10	10	10	25	80	80	100	100	100	100	4	3	4	4	2	2	0	0	0	0
C18	7	10	10	10	20	70	80	70	70	70	65	4	4	4	4	2	3	3	3	3	2
C19	33	5	5	5	10	50	50	40	40	45	66	4	4	4	4	3	3	5	3	3	3
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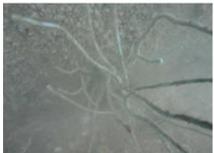
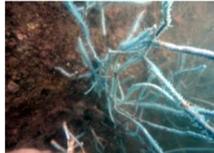
Partial Mortality and Coral Health Data for Translocated Corals from January 2017 to April 2018

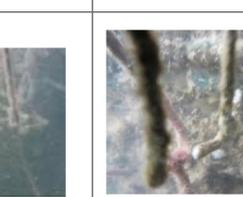
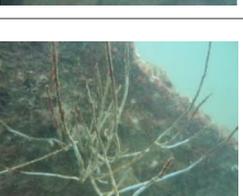
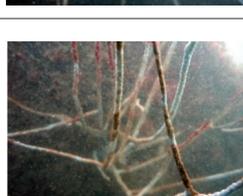
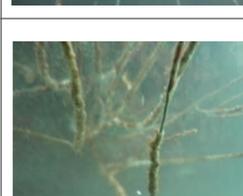
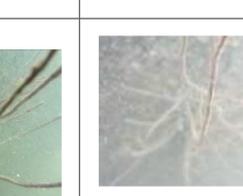
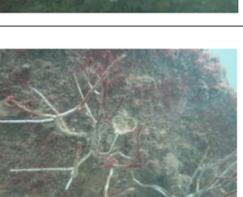
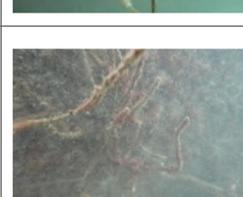
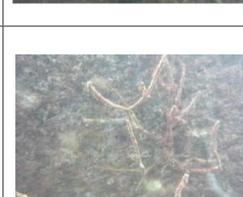
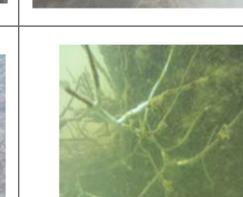
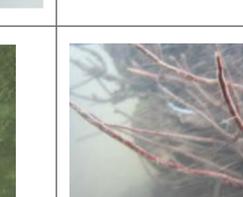
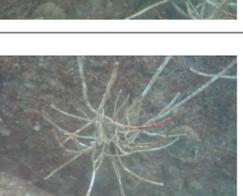
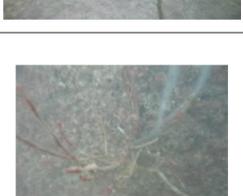
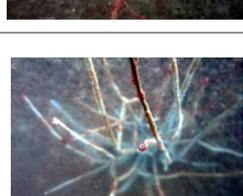
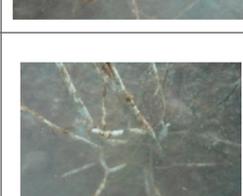
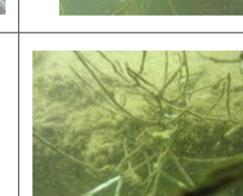
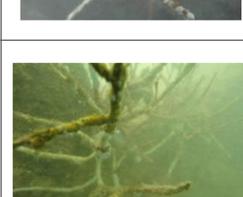
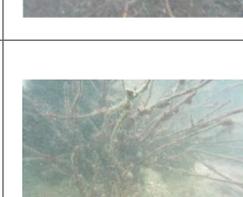
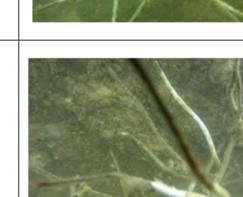
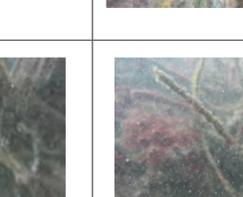
Coral Tag No.	Baseline Colony Height (cm)	Partial Mortality (%)										Coral Health									
		Baseline	1st Survey (Jan 2017)	2nd Survey (Feb 2017)	3rd Survey (Mar 2017)	4th Survey (Apr 2017)	1st ad-hoc (Jun 2017)	2nd ad-hoc (July 2017)	3rd ad-hoc (Sep 2017)	5th Survey (Oct 2017)	6th Survey (Apr 2018)	Baseline	1st Survey (Jan 2017)	2nd Survey (Feb 2017)	3rd Survey (Mar 2017)	4th Survey (Apr 2017)	1st ad-hoc (Jun 2017)	2nd ad-hoc (July 2017)	3rd ad-hoc (Sep 2017)	5th Survey (Oct 2017)	6th Survey (Apr 2018)
T1	22	10	10	10	15	35	20	20	25	20	23	4	4	3	3	1	1	4	2	2	3
T2	20	10	10	10	40	90	95	100	100	100	100	5	5	4	4	2	2	0	0	0	0
T3	17	0	5	0	10	90	80	70	75	70	72	4	4	3	3	1	2	3	2	2	3
T4	16	0	0	0	20	95	90	90	95	95	85	4	4	3	3	1	1	3	3	3	3
T5	15	5	10	5	10	95	90	90	95	95	95	4	4	3	3	1	1	3	4	3	3
T6	8	5	10	5	20	90	90	80	85	80	94	4	4	3	3	1	1	2	2	3	3
T7	25	10	5	10	20	90	90	100	100	100	100	4	4	3	3	1	1	0	0	0	0
T8	24	10	10	10	25	70	70	60	65	65	71	4	4	3	2	2	3	2	3	3	3
T9	12	10	10	10	15	80	80	80	85	85	99	4	4	4	4	2	2	4	2	2	3
T10	8	10	10	10	15	90	90	90	95	95	86	4	4	3	3	1	1	1	3	3	3
T11	15	10	10	10	20	90	90	90	95	95	77	4	3	3	4	1	1	1	3	3	3
T12	10	5	5	5	25	100	100	100	100	100	100	4	3	3	3	1	0	0	0	0	0
T13	10	5	5	5	10	80	80	80	85	85	97	5	4	4	3	1	1	1	2	2	2
T14	14	5	5	5	15	70	70	70	75	75	74	4	4	3	3	2	2	2	2	2	2
T15	15	10	10	10	20	80	80	80	85	85	75	4	4	4	3	1	1	2	3	3	2
T16	5	0	0	0	20	70	70	70	65	60	60	4	5	5	4	1	2	2	3	3	2
T17	7	0	0	0	5	70	70	70	75	75	54	4	4	5	4	1	1	2	2	2	2
T18	10	0	0	5	10	80	80	80	85	80	84	4	4	3	3	1	1	2	2	2	2
T19	8	5	5	5	15	90	90	90	95	95	92	4	4	4	4	1	1	3	2	3	2
T20	7	10	10	10	20	90	90	90	95	95	100	4	4	4	4	1	1	2	3	3	0
T21	24	10	10	10	15	90	90	80	85	85	86	5	5	4	4	1	1	3	3	3	3
T22	30	10	10	15	15	90	90	80	85	85	82	5	5	3	3	1	1	2	2	2	3
T23	5	10	10	10	20	80	90	80	85	85	95	5	5	4	4	2	2	3	2	2	2
T24	5	10	10	10	15	90	90	90	95	95	90	4	4	3	3	1	1	2	3	3	2
T25	10	10	10	5	15	90	90	90	90	90	84	4	4	3	3	1	1	2	3	3	2
T26	15	10	10	10	15	80	80	80	85	85	100	4	4	4	4	2	2	3	2	2	0
T27	10	10	10	10	20	90	90	90	95	90	91	4	4	3	3	1	1	2	3	3	2
T28	7	10	10	10	20	70	70	70	75	70	27	4	4	3	3	2	2	3	2	2	3
T29	10	10	10	10	20	70	70	60	65	60	78	4	4	3	3	4	3	5	3	2	3
T30	5	10	10	10	25	60	60	50	55	55	75	4	4	3	4	3	3	5	2	2	2

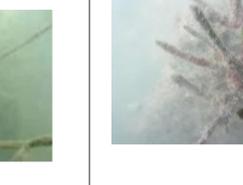
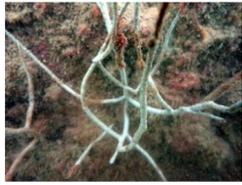
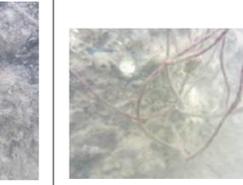
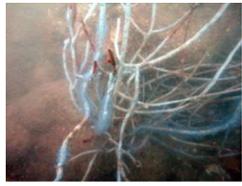
Coral Tag No.	Baseline Colony Height (cm)	Partial Mortality (%)										Coral Health									
		Baseline	1st Survey (Jan 2017)	2nd Survey (Feb 2017)	3rd Survey (Mar 2017)	4th Survey (Apr 2017)	1st ad-hoc (Jun 2017)	2nd ad-hoc (July 2017)	3rd ad-hoc (Sep 2017)	5th Survey (Oct 2017)	6th Survey (Apr 2018)	Baseline	1st Survey (Jan 2017)	2nd Survey (Feb 2017)	3rd Survey (Mar 2017)	4th Survey (Apr 2017)	1st ad-hoc (Jun 2017)	2nd ad-hoc (July 2017)	3rd ad-hoc (Sep 2017)	5th Survey (Oct 2017)	6th Survey (Apr 2018)
T31	39	20	20	25	25	70	70	70	75	75	90	4	3	3	3	3	3	3	3	4	3
T32	33	20	20	20	25	70	70	60	65	60	73	4	4	3	4	3	3	5	3	2	3
T33	31	10	10	10	20	60	60	60	65	60	72	4	3	3	3	3	4	3	2	2	3
T34	34	0	0	0	15	70	70	80	85	80	80	5	3	3	2	2	2	5	2	2	3
T35	7	0	5	0	10	60	60	60	65	65	42	4	4	4	4	2	2	1	3	3	2
T36	18	0	0	0	10	60	60	70	75	70	77	5	4	4	4	2	2	5	2	3	2
T37	8	20	20	25	25	90	90	90	95	95	92	4	4	3	3	2	2	1	1	3	2
T38	18	10	10	10	15	80	80	70	75	70	62	4	4	4	3	2	2	4	4	3	2
T39	5	0	5	5	15	80	80	80	85	90	95	4	4	4	4	1	1	1	3	2	3
T40	40	10	10	15	15	80	80	80	85	80	95	4	4	4	4	2	3	3	2	4	3
T41	15	10	5	10	15	80	90	90	95	95	94	4	4	4	4	2	2	2	1	3	3
T42	10	10	15	10	15	80	80	80	85	85	97	4	4	4	4	2	2	3	2	2	3
T43	24	10	10	10	15	80	80	80	85	85	94	4	4	4	4	2	2	3	3	3	2
T44	10	10	10	10	15	80	80	80	85	85	82	4	4	4	4	2	2	2	2	2	2
T45	25	10	15	15	15	80	80	80	85	85	95	4	4	4	4	2	2	4	3	3	3
T46	20	10	10	10	15	70	70	70	75	75	83	4	4	4	4	2	2	3	2	2	3
T47	12	10	10	10	15	80	80	80	85	80	87	4	4	3	4	2	2	2	2	2	1
T48	23	15	15	20	20	80	80	80	85	80	87	4	4	4	4	2	2	2	1	3	2
T49	10	10	10	10	15	80	80	80	85	80	65	4	4	3	3	2	2	5	2	2	3
T50	24	10	10	10	15	70	70	70	75	70	80	4	4	3	3	2	2	4	2	2	2
T51	10	0	10	10	5	80	80	80	85	80	76	4	3	3	4	1	1	4	1	3	2
T52	22	10	10	5	15	80	80	80	85	80	97	4	3	3	4	2	2	4	2	2	3
T53	21	10	10	15	15	70	70	70	75	80	95	4	4	4	4	2	2	5	2	1	2
T54	6	10	10	10	15	70	70	70	75	70	35	4	4	4	4	2	2	3	2	2	3
T55	9	10	10	20	15	80	80	80	85	80	77	4	3	3	3	2	2	4	3	3	2
T56	9	10	10	10	20	80	80	80	75	70	72	4	4	4	4	2	2	4	3	3	2
T57	30	10	15	10	15	70	70	70	75	70	78	4	4	3	3	2	2	4	2	2	3
T58	33	10	15	10	15	60	60	50	55	50	46	4	4	4	4	3	3	4	3	3	3
T59	5	10	10	10	15	40	90	90	95	90	77	5	4	4	4	3	4	3	3	3	3
T60	34	10	10	10	15	10	70	70	75	70	72	5	3	4	4	4	4	4	2	3	2
T61	32	10	10	10	15	70	70	70	75	70	75	4	4	3	3	2	2	4	2	2	3
T62	44	10	15	10	15	70	70	70	70	70	70	4	4	4	4	2	2	3	3	3	3

Coral Tag No.	Baseline Colony Height (cm)	Partial Mortality (%)										Coral Health									
		Baseline	1st Survey (Jan 2017)	2nd Survey (Feb 2017)	3rd Survey (Mar 2017)	4th Survey (Apr 2017)	1st ad-hoc (Jun 2017)	2nd ad-hoc (July 2017)	3rd ad-hoc (Sep 2017)	5th Survey (Oct 2017)	6th Survey (Apr 2018)	Baseline	1st Survey (Jan 2017)	2nd Survey (Feb 2017)	3rd Survey (Mar 2017)	4th Survey (Apr 2017)	1st ad-hoc (Jun 2017)	2nd ad-hoc (July 2017)	3rd ad-hoc (Sep 2017)	5th Survey (Oct 2017)	6th Survey (Apr 2018)
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T64	34	10	10	10	20	60	60	60	65	60	92	4	4	3	2	3	3	3	2	4	3
T65	28	10	10	10	10	70	70	70	75	70	69	4	4	4	4	2	2	4	1	3	2
T66	15	10	10	10	15	70	70	70	75	70	54	4	3	3	3	2	2	3	2	2	3
T67	27	10	10	10	15	70	70	70	75	70	65	4	4	3	3	2	2	2	2	2	3
T68	21	10	10	10	10	70	70	70	70	70	60	4	4	4	4	2	2	2	3	3	2
T69	8	10	10	10	15	80	80	80	85	80	91	4	4	4	4	2	2	4	2	2	1
T70	10	10	20	10	15	70	70	70	75	80	44	4	4	3	3	2	2	4	3	3	3
T71	16	10	10	10	15	80	80	80	85	80	75	4	4	4	4	2	2	3	2	2	3
T72	5	10	10	10	15	70	70	60	65	60	79	4	4	4	4	2	3	5	3	3	2
T73	5	10	10	10	20	60	60	60	65	60	90	4	4	3	4	3	3	3	2	2	3
T74	10	10	10	10	15	80	80	70	75	75	75	4	4	4	4	2	2	5	2	2	3
T75	10	10	10	10	15	70	70	70	75	70	48	4	4	4	4	2	2	2	1	3	3
T76	10	10	10	20	15	60	60	60	65	60	79	4	4	3	3	3	3	2	3	3	2
T77	24	5	10	10	10	15	15	15	20	20	55	4	4	4	4	4	4	3	3	3	4
T78	17	0	5	0	5	15	15	15	20	20	21	3	4	3	3	3	4	2	3	3	2
T79	18	5	5	5	15	15	15	15	20	20	25	4	4	4	4	4	4	4	3	3	3
T80	30	5	5	5	15	15	15	15	20	20	76	4	4	3	3	4	4	5	2	2	3
T81	25	10	10	10	10	80	80	80	85	80	79	4	5	3	3	2	2	4	2	4	3
T82	18	10	10	10	15	80	80	80	80	80	97	4	5	3	4	2	2	4	3	3	2
T83	16	10	10	10	15	70	70	70	75	70	32	4	4	3	4	2	3	3	3	3	3
T84	31	10	10	10	15	80	80	80	80	80	93	4	4	4	4	2	2	2	3	3	2
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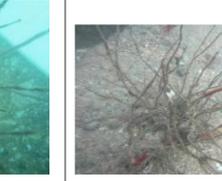
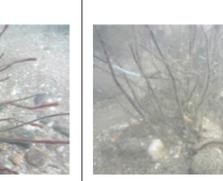
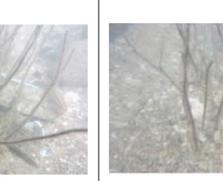
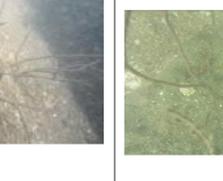
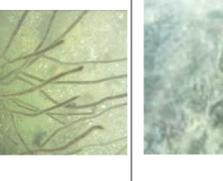
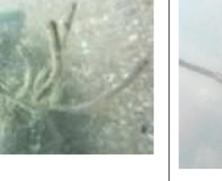
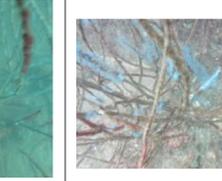
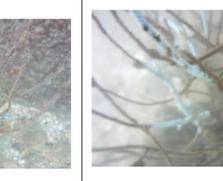
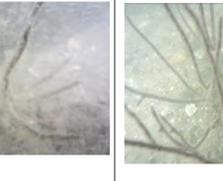
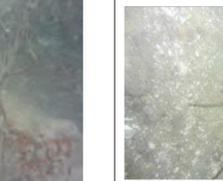
**Appendix B Photos of Control Corals
(Tagged) at Recipient Site RT2 during
Baseline, Post-translocation Coral
Monitoring Surveys, and Ad-hoc Coral
Monitoring Surveys**

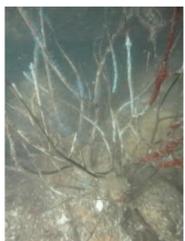
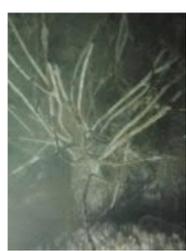
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
C1										
C2										
C3										
C4										
C5										
C6										
C7										

Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
C8										
C9										
C10										
C11										
C12										
C13										
C14										
C15										

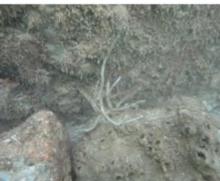
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
C16										
C17										
C18										
C19										
C20										

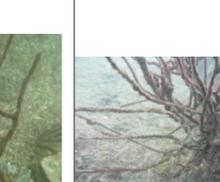
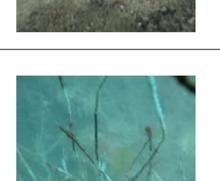
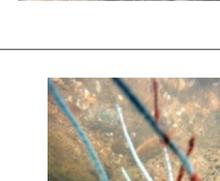
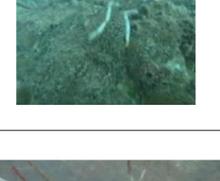
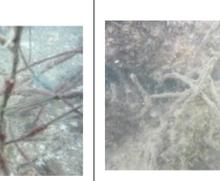
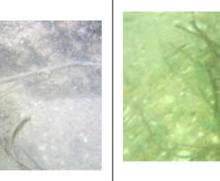
**Appendix C Photos of Translocated
Corals at Recipient Site RT2 (Tagged)
during Baseline, Post-translocation Coral
Monitoring Surveys, and Ad-hoc Coral
Monitoring Surveys**

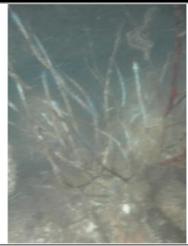
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T1										
T2										
T3										
T4										
T5										
T6										

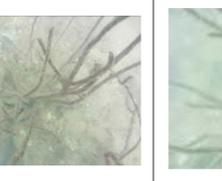
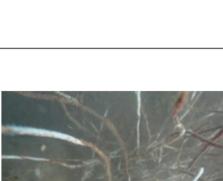
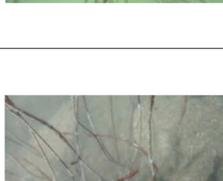
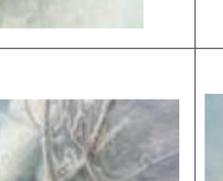
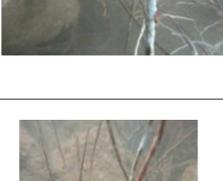
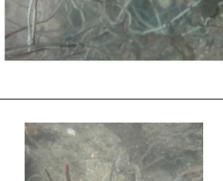
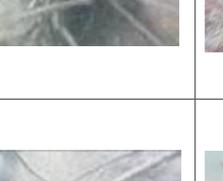
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T7										
T8										
T9										
T10										
T11										

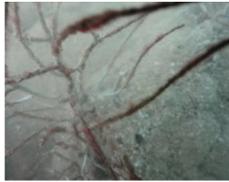
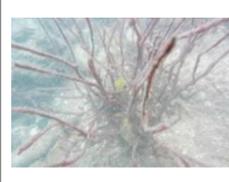
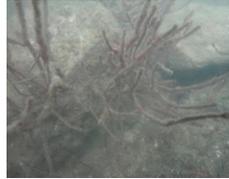
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T12										
T13										
T14										
T15										
T16										
T17										

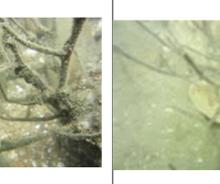
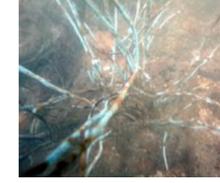
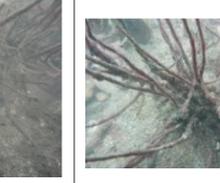
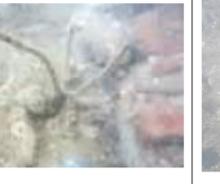
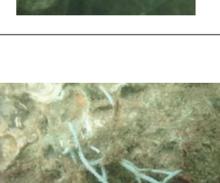
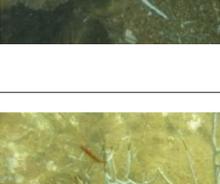
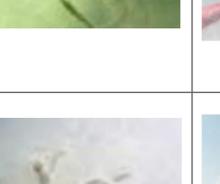
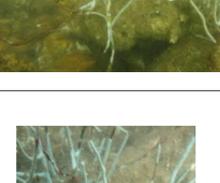
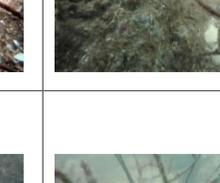
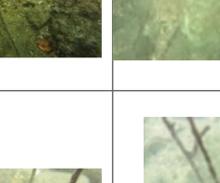
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T18										
T19										
T20										
T21										
T22										
T23										

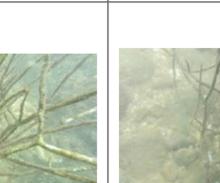
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T24										
T25										
T26										
T27										
T28										
T29										
T30										

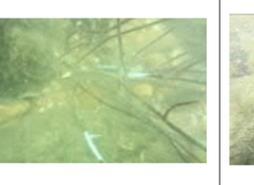
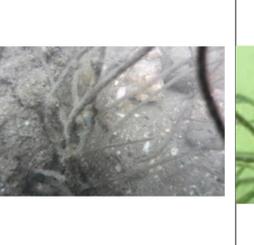
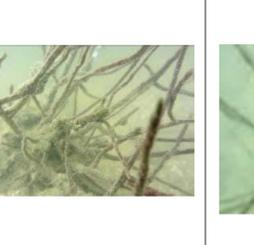
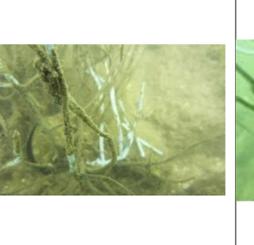
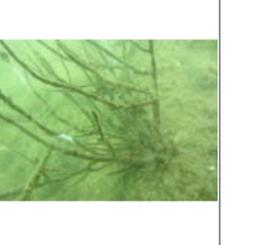
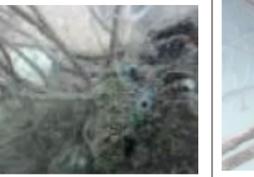
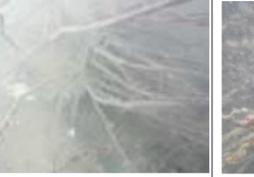
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T31										
T32										
T33										
T34										
T35										
T36										

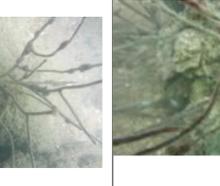
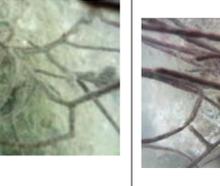
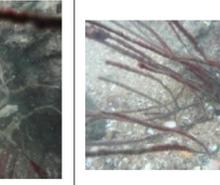
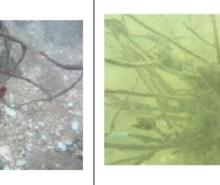
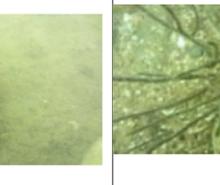
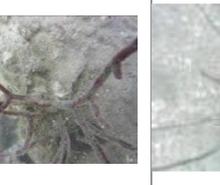
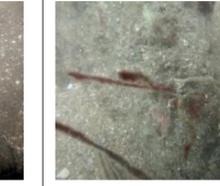
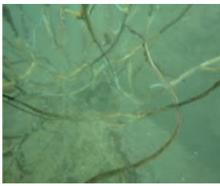
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T37										
T38										
T39										
T40										
T41										
T42										

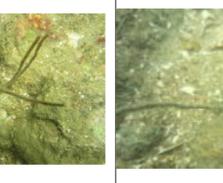
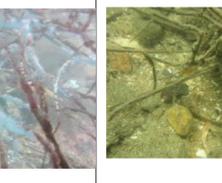
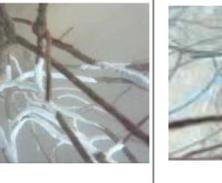
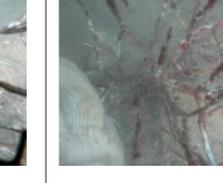
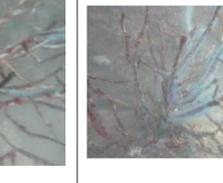
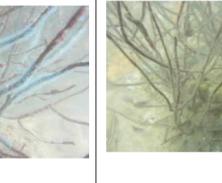
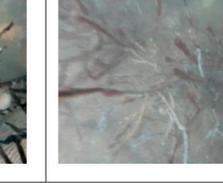
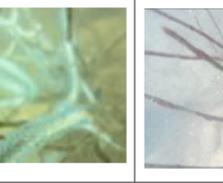
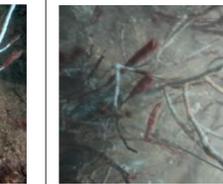
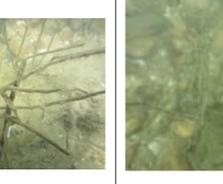
Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T43										
T44										
T45										
T46										
T47										
T48										
T49										

Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T50										
T51										
T52										
T53										
T54										
T55										
T56										

Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T57										
T58										
T59										
T60										
T61										
T62										
T63										

Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T64										
T65										
T66										
T67										
T68										
T69										

Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T70										
T71										
T72										
T73										
T74										
T75										

Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T76										
T77										
T78										
T79										
T80										
T81										

Coral Tag Number	Baseline	1 st Post-translocation Survey	2 nd Post-translocation Survey	3 rd Post-translocation Survey	4 th Post-translocation Survey	1 st Ad-hoc Survey	2 nd Ad-hoc Survey	3 rd Ad-hoc Survey	5 th Post-translocation Survey	6 th Post-translocation Survey
T82										
T83										
T84										
T85										

