



PAPA HĀNAUMOKUĀKEA
Marine National Monument

A World Heritage Site

HA-17-04
PMNM RAMP CRUISE

10/12/2017

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PMNM RAMP CRUISE SUMMARY

- September 6 – 30, 2017 (18 dive ops days)
- Ni'ihau, FFS, Laysan, Lisianski, PHA, Midway, Kure
- 18 scientists
 - NOAA
 - University of Hawaii
 - Australian Institute of Marine Science
- Projects
 - Fish and benthic Rapid Ecological Assessments (REA), long-term RAMP surveys
 - Open-circuit SCUBA – Closed-circuit rebreather comparison (OC-CCR)
 - Coral health surveys
 - Baited Remote Underwater Video Stations (BRUVS)

FISH AND BENTHIC REA TEAM

- Performed fish stationary point count (SPC) surveys to identify, count and size fishes or benthic transect surveys to identify and size coral colonies and record diseases.



Photo Credit: Stephen Matadobra

	Fish	Benthic
FFS	28	11
Laysan	11	7
Lisianski	17	11
PHA	12	7
Midway	10	6
Kure	6	4
Total	84 sites	46 sites

OC-CCR COMPARISON TEAM

- Performed the fish SPC surveys, using open-circuit SCUBA and closed-circuit rebreather, to examine the effects of “bubbles” on fish behavior/surveys.
- Extended a previous study of OC-CCR comparison done in the MHI, allowing for comparison between the populated MHI and the protected NWHI.



Photo Credit: Andrew Gray

FFS	11
Laysan	6
Lisianski	9
PHA	5
Midway	2
Kure	4
Total	37 sites

CORAL HEALTH TEAM

- Performed coral surveys similar to benthic REA surveys.
- Revisited permanent “pin” sites throughout the Monument.
- Revisited the 2014 Lisianski bleaching site.
- Used SfM photogrammetry to document changes in 3D habitat structure of the reefs.
- Used SfM photogrammetry to 3D map several maritime archeology sites and recorded interactive 360-video panoramics to be used for Virtual Reality exhibits.



BRUVS TEAM

- Surveyed sharks, rays and other types of marine life on coral reefs.
- Performed 36 camera drops each at FFS and Midway.
- focused on shallow water reef habitat (<100 ft) for the first time, as part of a worldwide effort (Global FinPrint).



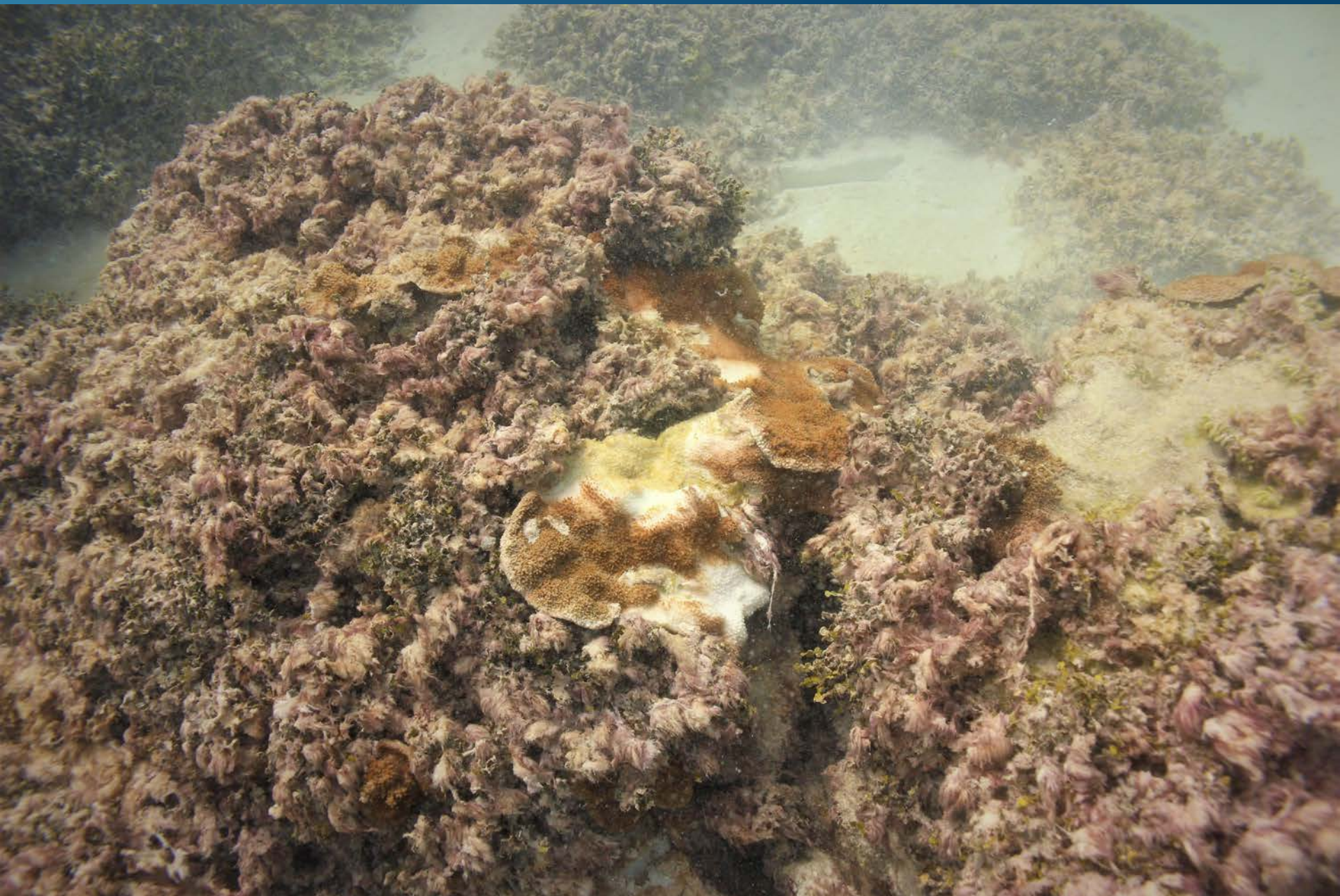
Photo Credit: Audrey Schlaff

LISIANSKI UPDATE



Photo credit: John Burns, 9/14/2017





Lisianski, east side (10-20 ft)

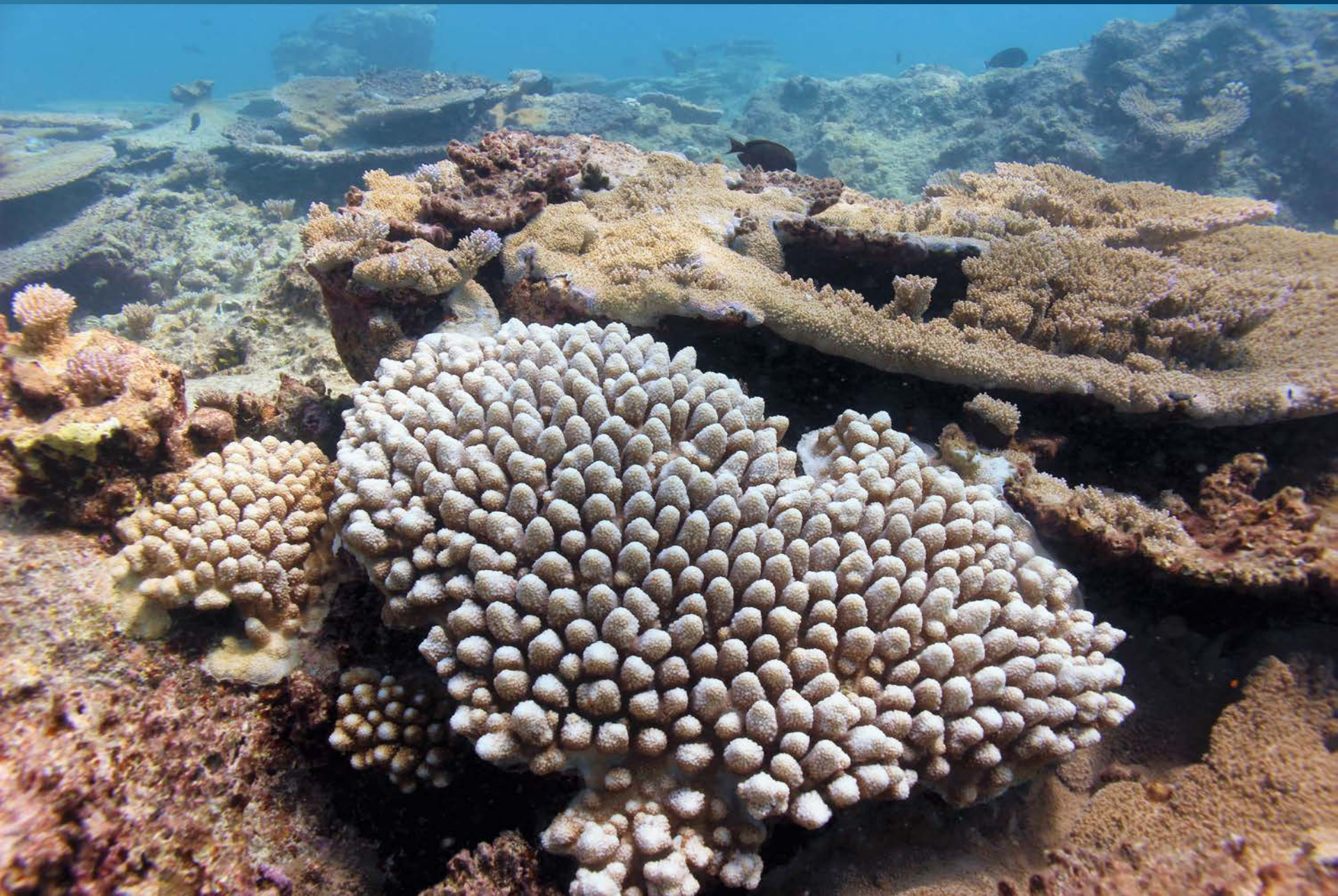


Lisianski, south side (30-45 ft)

RAMP HIGHLIGHTS

- Fish and corals in the Monument seemed to be mostly healthy.
- Water was warm, 80-84 F up to Lisianski, 78-79 F at the three northern atolls.
- There was some coral bleaching, somewhat species specific (*Montipora*, *P. damicornis*, *A. humilis*), but no mass bleaching was observed.





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- For the first time, the fish REA team collected overlapping benthic imagery at each survey site for 3D models.
 - Benthic cover – habitat complexity study
 - Fish – habitat study
- Videos

QUESTIONS?

