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Protocol status: Working
We use this protocol and it's working

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dead or alive

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ABSTRACT

Objective: Identifying and quantifying the effect of live & dead corals on species diversity.

MATERIALS

clove oil
5 gallon bucket
cooler
21 labeled small buckets
pipet
flow table
aerator
underwater camera
PVC plates
Concrete slabs
zip ties
filter
small nets taking out fish
fish identification books
google to identify names of organisms

SAFETY WARNINGS

Swimming & snorkeling skills required.

ETHICS STATEMENT

Organisms will have adverse reactions to clove solution.

BEFORE START INSTRUCTIONS

Bring your swim gear. Wear sunscreen.

Coral Head Colonization Protocol

1 Take boat out to experiment site (there are two).

At each site there is a plot of 10 coral heads, 5 unhealthy (bleached) and 5 healthy (unbleached). These coral heads are zip-tied to PVC plates that can be secured to 10 concrete blocks that are placed at the bottom of the lagoon. The coral heads and corresponding placement blocks are numbered 1-10 at the first site and 11-20 at the second site.

2 Starting with lowest number, use underwater camera to photograph coral head next to size reference instrument. Photographs are later used to measure size of coral heads.

3 Remove coral head from placement block by detaching the PVC plate with the coral head, then immediately place it into a large bucket underwater. Bring to the surface and bring back to the boat without letting new water enter the bucket or releasing any organisms.

4 Once on the boat, the coral head is shaken and repeatedly dunked in the large bucket (full of saltwater) to dislodge fish and other organisms.

5 Add 3 pipettes of clove oil into a separate bucket of saltwater and transfer solution to large white cooler.

6 Place coral head into white cooler with clove solution for 1 minute to anesthetize any remaining specimens, then shake and dunk the coral head in the large bucket (full of saltwater) to dislodge anesthetized specimens.

*Immediately check clove oil solution to see if any specimens are present in the white cooler. If so, immediately transfer to the large bucket (full of saltwater) using hands and/or net. Do this quickly to avoid harming organisms.

7 Carefully visually inspect coral head to make sure all specimens are collected in the large bucket (full of saltwater). Dislodge and collect any remaining specimens.

8 Transfer all organisms from the large saltwater bucket into separate small saltwater bucket (with

numbered lid corresponding to the coral head sample) using a small net and by pouring the water from the large bucket through a small metal sieve, then using hands to pick up specimens and place in small bucket. Corresponding numbered lid is then put on small bucket, which is then placed in a cooler filled with cool water for later identification.

9 Repeat steps #2-8 with remaining coral heads in ascending numerical order, keeping track of which coral heads are healthy (unbleached) and unhealthy (bleached).

10 Transport cooler back to Gump Station by boat. Upon return from boat excursion, place all specimen buckets with lids removed on circulating water table and insert aerators as needed to keep water oxygenated.

11 Identify organisms to the species level using identification books (or Google) and count number of individuals of each species. Record and compile data in spreadsheet. Each column will be a coral specimen number and each row is a different species in the spreadsheet.