

Human Field Protocol

Timed swim to gather 5 samples along coastline.

1.5m (5 ft) and 3m (10 ft) samples. 5 samples each.

Participants dive down turn by turn. I go last and take a picture.

With big wave action, may need someone to pin down plant.

Image Gathering Protocol

Set 1:

Location: Spencer Beach

Date/Time: 11/2 16:45

Conditions: Overcast/Cloudy. Medium Wave Action. Low Visibility.

GoPro Hero 5 Black.

12MP Wide FOV

Color: Flat

WB: 6000K

ISO: 800

Shutter: Auto

EV Comp 0

Sharp: High

Protune:

Set 2:

Location(s): Kaloko Fish Pond (19.6865, -156.0328), Kahalu'u Beach (19.5789, -155.9673)

Date/Time: 11/15 12:00, 11/15 14:53

Conditions: Sunny Clear Skies High Wave Action, Sunny Slightly Cloudy Medium Wave Action

Olympus Tough TG-5 4K

4x Wide Optical Zoom 4.5-18.0 mm 1:2.0-4.9 F2.0

F2.0

LF 4000x3000 Underwater WB

Auto ISO (1600 Max)

Color: Natural

Set 3:

Location(s): Māhukona (20.1837, -155.9008), Spencer Beach(20.0239, -155.8226)

Date/Time: 12/10 9:00, 12/10 10:44

Conditions: Sunny, Windy at Māhukona. Sunny, Terrible water visibility at Spencer Beach.

Olympus Tough TG-5 4K

4x Wide Optical Zoom 4.5-18.0 mm 1:2.0-4.9 F2.0

F2.0

Underwater Snapshot Setting

Difficulties: Positioning card to avoid shadows, side facing coral (see purple boy at Mahukona Specimen #6). Camera however allows multiple analysis later on. Selection Criteria: Alive, Insight, Compact and Complete.

Mahukona Specimens 7,8,9 were side by side. Perhaps aids in more consistent comparison?

Spencer beach had terrible visibility and perhaps explains why data was terrible.

Appendix B

“Welcome to the Ko’a Card Citizen Science Program! This is a brief introduction into the tools we will be using today and how we’re going to gather data safely, accurately, and efficiently. Please feel free to ask questions at any time.”

[Handout Datasheets]

“The data sheet you have in your hands has two main sections - the metadata header above the gray line and the data collection space below it.

In the header section, you will enter full name, sex, and age in the entry boxes.

For sex, please write M for Male, F for Female, or O for Other if you wish to specify further, or leave blank if you prefer not to state.

For date, please follow the format stated on the page.

For sites, please follow the format stated on the note below the Sites line. For multiple sites, please also enter corresponding dates and time on the Date / Time entry box.

I will be providing site information before every excursion into the water

In the data collection boxes please note the Morphology encodings - just enter the bolded letter for each specimen entry. As a volunteer, you will be responsible for using your best judgement to determine the color rating, percent bleached, species, and morphology of each coral specimen we rate.”

[Show Hawaiian Ko’a Card]

“To help in your color rating, we will be using the Hawaiian Ko’a Card developed by Dr. Keisha Bahr from the Coral Reef Ecology Lab in Oahu. This card is a circle subdivided into 10 degree arcs colored in with a certain shade. You will be comparing the color of the coral specimen with the shades on the color card. You will write down the lightest and the darkest shade you see on the degree value on the datasheet. Again, you will be giving a range by specifying two values.”

[Show Common Hawaiian Corals Image]

“This is a picture of common Hawaiian corals that you may see while you are out there. Note the species name and the corresponding morphology.”

“Please fill in your header boxes now.”

[State Site Location, Coordinates, and GPS]

“We will be going to depths of approximately 5 and 10 feet or 1.5m and 3m respectively. I will identify a specimen to rate and we will take turns using the color card to *independently* rate the specimen. Please do not share ratings during this process as it is critical that these estimations are independent across individuals. When all individuals have finished rating a specimen, I will then dive down and take a picture with the color calibration card and Ko’a card. We will then proceed to the next specimen.”

“Please notify me if any of you all are experiencing difficulties in collecting data or more importantly, swimming. If you feel unsafe at any point, please notify me and we will go back to shore as quickly as possible - safety is a priority in the ocean.”