

Mar 12, 2024

ISP Fish Biodiversity Survey

DOI

dx.doi.org/10.17504/protocols.io.36wgq32eylk5/v1



Stephanie Gay¹, Kylie Ren¹, Charlotte Wiggins¹

¹UC Berkeley

Island Sustainability Pro...



Stephanie Gay

UC Berkeley

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Protocol Citation: Stephanie Gay, Kylie Ren, Charlotte Wiggins 2024. ISP Fish Biodiversity Survey. **protocols.io**
<https://dx.doi.org/10.17504/protocols.io.36wgq32eylk5/v1>

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Protocol status: Working

We use this protocol and it's working

Created: March 11, 2024

Last Modified: March 12, 2024

Protocol Integer ID: 96518

Keywords: fish biodiversity survey, fish biodiversity survey this survey, marine biodiversity, scale ecosystems like tetiaroa, marine biodiversity present off the coast, biodiversity analysis, present fish species, observing present fish species, biodiversity, ecosystem, onetahi motu in tetiaroa, subsequent preservation of marine environment, structure of the ecosystem, marine environment, tetiaroa, overarching species, french polynesia, scale ecosystem, food web, species, larger environmental conservation movement, representative of the larger environmental conservation movement, onetahi motu

Abstract

This survey addresses the marine biodiversity present off the coast of the Onetahi motu in Tetiaroa, French Polynesia. Researchers conducted transects observing present fish species and their interactions in order to analyze the structure of the ecosystem's food web and overarching species richness. Biodiversity analysis is an integral contribution to the knowledge and subsequent preservation of marine environments, and research in small-scale ecosystems like Tetiaroa is representative of the larger environmental conservation movement.

Attachments



[IMG_1219.JPG](#)

2.3MB



[IMG_3729.JPG](#)

662KB

Guidelines

- Be safe! Wear sunscreen, watch out for sharp objects when swimming, and have fun :D

Materials

- Snorkel, Mask and Fins (Optional)
- 30m Transect Tape
- Olympus Tough Underwater Camera (TG-6)
- Laptop with Google Sheets or Microsoft Excel Software

Troubleshooting

Safety warnings

- ⚠ Be mindful of the marine environment. Don't damage coral, wear reef-safe sunscreen, and treat your surroundings with respect.

Ethics statement

No fish were harmed in the making of this survey. 🐟 🐟 🐟



Survey Site Selection

- 1 From north shore of the Onetahi Motu, aligned with ferry departure port, swim outwards towards the reef crest until reef substrate becomes primarily coral (as opposed to sand)

Belt Transect Survey

- 2 Split into teams of 2 (with additional team member(s) to assist with securing the transect tape)
- 3 Mark out a 30m transect section using transect tape
 - Secure one end of the tape using a rock/coral or team member to secure the tape
 - Assign one team member to swim out with the other end of the tape to mark the full 30m length - head in a fixed direction either with use of compass or by heading toward a fixed landmark visible at horizon level
- 4 For member of team performing the swimming survey task
 - Swim forward at a slow constant speed along the tape
 - Estimate a transect width of 2m on either side of the tape
 - Within the transect, use camera to document what is required (refer to step 5 and 6)
 - Avoid splashing and move slowly to avoid scaring fish away
 - Pause and wait if necessary along transect to allow fish to acclimatize to your presence

Species Identification

- 5 Photograph individuals of each unique species of fish sighted
- 6 Export photos from camera to laptop
- 7 Identify fish species
Compare each photo of fish obtained with the fish in guide book or <https://www.tetiarioasociety.org/island/fish>
- 8 Record the Genus and Species name for each species of fish identified into a spreadsheet

Species Interaction



- 9 Photograph distinct interactions between individuals of different species
- 10 Export photos from camera to laptop
- 11 Identify the species involved, and record description of these interactions in a spreadsheet marking them as trophic or non-trophic
- 12 Analyze relationships between species, record connections and hypothesized behavior behind interactions

Species Function

- 13 Photograph individuals performing functions for each unique species of fish sighted
- 14 Identify the species involved, and record description of the function performed