CSI - Coral Sailors Initiative

Q & A

Everything you need to know about joining the fleet and bridging the data gap for coral reef conservation.

The Mission

What is the Coral Sailors Initiative (CSI)?

CSI is a citizen science project that bridges the 'data gap' in coral reef research and conservation. We mobilize recreational sailors—our 'vessels of opportunity'—to monitor coral reefs in remote locations. By collecting standardized video data, we help scientists track reef health, bleaching events, and biodiversity in isolated regions that are otherwise too expensive to monitor regularly.

Why are cruisers essential to this project?

Scientific expeditions to remote atolls are logistically difficult and expensive. Cruising sailors, however, are already there. You anchor in the precise locations where data is most scarce. Your mobility allows us to build a global, decentralized monitoring network with a significantly lower carbon footprint than dedicated research vessels.

Do I need to be a marine biologist?

Not at all. The protocol is designed specifically for non-scientists. If you are a competent swimmer or freediver capable of maintaining a steady pace and operating an action camera, you can contribute. No taxonomic training is required.

Gear & Requirements

What equipment do I need?

- **Imaging Device:** A waterproof action camera with image stabilisation capable of 4K recording (e.g., GoPro Hero10 or newer). A handle or selfie stick is helpful.
- **Geolocation:** A GPS unit (mobile phone in waterproof pouch, GPS watch, or handheld unit) to record a continuous track.
- **Accessories:** A swim buoy/drybag combination or simple drybag with tether for the GPS unit. The GPS needs to be above water at all times

Are there specific camera settings?

Yes, these settings are required for data validity:

- **Resolution:** 4K at 30fps is standard (2.7K minimum).
- **Lens Mode:** Please use the "Linear" zoom setting.
- **Why?** Wide-angle or fisheye views distort the image, making it hard to calculate the surface area of the reef later.
- **Time:** Make sure time and date are synchronized with GPS unit.

The Field Protocol

How do I perform a 'Video Transect'?

The survey is a timed swim approximating a 20-meter line:

1. Preparation: Sync camera & GPS time. Put GPS in waterproof bag and attach tether. Start GPS tracking *before* entering the water. Record the track of your complete in-water-session.

2. The Approach: Swim to your first start point at a 90° angle.

3. Recording Sequence:

- **00:00 (Surface):** Record horizon/landmarks for context.

- **00:02 (Subsurface):** Dip camera and record a slow 360° reef panorama.
- **00:30 (Metadata):** Show hand signals for depth (e.g., 3 fingers = 3m).
- **00:35 (The Swim):** If the depth exceeds 2 meters, dive to about 1.5m above the bottom. Swim straight for ~60 seconds (approx 20m). Keep camera 1m from bottom, facing down and slightly forward.
- **01:35 - 02:05 (Finish):** Ascend and record a final slow 360° view.

4. Egress: Swim away from the end point at a 90° angle to mark the GPS track.

Repeat as many times as you like.
Each clip / transect recording should be approximately 02:05 min long, plus-minus 10 seconds or so. During your snorkel session you can do as many transects at as many different spots as you like but make sure to approach and leave each new stretch at a right angle. If you don't want to dive down, you can still record sites to about 2 meters deep. At high tide you can also

Why the 90° angle approach?

We ask you to swim towards your start point and away from your end point at a 90° (perpendicular) angle. This geometric turn creates a clear 'corner' on your GPS track, allowing our software to pinpoint exactly where the scientific transect begins and ends without manual guessing.

Safety & Conservation

Please be careful not to touch any coral during the whole process. Make sure that none of your anchor gear can damage coral. Be safe and have fun!

Data Management & Submission

How should I organize my files?

Create a specific directory for each survey using this format:

```
YYYY-MM-DD [Location Name], [Vessel Name]
```

Place both the raw video files (**.MP4** or **.MOV**) and the complete GPS track (preferably **.GPX**) into this folder.

Create a .zip archive of this folder.

How do I submit the data?

During our pilot phase, please submit your data folder via a cloud storage link (Dropbox, Google Drive, WeTransfer, etc.) or direct email to the project coordinators. We are currently building a dedicated web interface for automated uploads and synchronization.

What if I don't want to send my videos?

If you prefer to host your own data, you can upload your videos to your personal channel (YouTube, Vimeo,...) and simply send us the links along with your GPX tracks. However, proper metadata is crucial. Please title each video using this exact format to ensure we can match it to the GPS data:

```
2025-11-21 FIJ Vanua N - Navadra S 01 1m
```

(Format: Date Country Region - Location TransectNumber Depth)

Ready to dive in?

Your next anchorage could be a critical data point for marine science.

Download Protocol **Explore the Map**

Sample Transects