WATER COLUMN TIME SERIES PROTOCOL
CTD SAMPLE COLLECTION AND DOWNLOAD
Moorea Coral Reef LTER

Get Together:
-Seabird 19plus CTD in stainless steel cage with attached Wet Labs fluormeter and turbidity meter (No oxygen meter is used)
-250 m line
- pliers, wrench or marlin spike
- put boom and winch on Safeboat

Doing a Cast in the Field

1. Securely fasten the CTD to the line- use a pliers or wrench to tighten shackle.
2. <u>Take off the fluorometer cap!</u>
3. Turn the CTD switch to "ON"
4. Put CTD over the side so that the intake tube near the top is below the surface. Let the CTD stay there for 45 seconds.
5. Lower the CTD slowly (about 10 m/minute at near shore stations, 20 m/minute offshore). Do not hit the bottom. If you do hit the bottom, immediately pull the CTD up off the bottom. Sample to the following depths:
   Offshore – 200m
   Fore reef – 15 m
   Cooks Bay – 30 m
   Cooks Bay Stream – 7 m
   Fringing Reef – 12 m
   Back reef- 2m (bottom)

6. Bring the CTD back up and on board quickly (the upcast is discarded).
7. Turn the switch to "OFF". Replace the Fluorometer cap.
8. Record all locations, times, and cast numbers

CLEAN-UP: Rinse the CTD well with fresh water. Flush the chamber with bottled or Nanopure water several times. If the CTD will not be used again for several months, flush it with 0.1% Triox detergent (in the dry lab water column monitoring cabinet and in the filing cabinet with the CTD instructions) and then many times with bottled or Nanopure water.

Downloading the CTD

1. The cable to download the CTD is stored in the filing cabinet in the Library in the second drawer up. It is in a plastic bag labeled CTD 19Plus with all the manuals and software.
2. Attach one end of the cable to the computer with CTD software on it.
3. Attach the other end to the CTD- lining up the bump and line on the cables so that the pins are correctly positioned.

4. One up SEATERM. Be sure Sea term is set for a 19plus CTD. (The general LTER computer is often set for a different instrument).
5. Click “Connect” on the Sea term menu. An >S should appear.
6. Click “Capture”. You will be prompted to give a name to the file. This File records the settings and files that are on the CTD. I usually give it a name that is the date plus “all files”. Then click on “Headers”. Once that is displayed, click on “ Coefficients”. Once that it displayed click “ Capture” again. This causes the file to stop collecting data and saves the file.
7. Click on “Upload”. You will be prompted as to what file (by number) you want to upload (If you are asked, never say you want to upload all the files. I find it better to upload them one at a time and name them as I go.).
8. Enter the cast number when prompted. Make comments if you want when prompted. Click “OK” on the comment prompt.
9. You will now be prompted to give the cast a name.
   File name structure: year-month-day-cast###, ie: “2011-01-15-001”
   Then click “ok”.
10. Wait for the upload to complete.
11. If you have more than one cast to download click “upload” again and enter the next cast until all have been uploaded one at a time.
12. Click ”disconnect” to disconnect from the CTD.
13. If you want to erase the CTD memory, click “ Int Log” and follow the prompts.
14. TO FIND YOUR FILES – go to “My computer> C Drive>Programs>SeaBird>Seaterm
15. Save .hex files to server (using SSH program when in Moorea) under: research\monitoring\water column\CTD\preprocessing\rawdata

Checking CTD Data using SeaSave (200m cast is a good one to check)

1. Open SeaSave Win 32 program
2. Click “Archive Data”, then “Start”
3. Select .hex file you want to open
4. Make sure it has the correct instrument configuration file (“4747”). If not, click on “Configure”, then “New Instrument Configuration”, then “Select Instrument Configuration.” The correct file is 4747.con, found in: Program Files\Sea-Bird\SeasaveWin32
5. Set up 2 screen displays of the plot by clicking “ScreenDisplay,” then “Add New Display Window”, then “Overlay Display”
6. 1 screen display is for CTD, 1 is for Turbidity. You must select the appropriate .DSO file to configure the axes. Click on “Screen Display,” then “ Edit Selected Display Window,” then “Select Display [.DSO] File.” Screen display files can be found in: C:\Program Files\Sea-Bird\Seasave-Win32 (they are also on the server)