

Requirements:

Turner Designs C3 Submersible Fluorometer with extender cable (boosters required for cable lengths >10M)
ArcGIS® Version 10
PC with two com (RS232 serial) ports or PCMCIA slot
GPS with com port (RS232) set to output NMEA and GPS serial cable
ArcMap C3 Extension

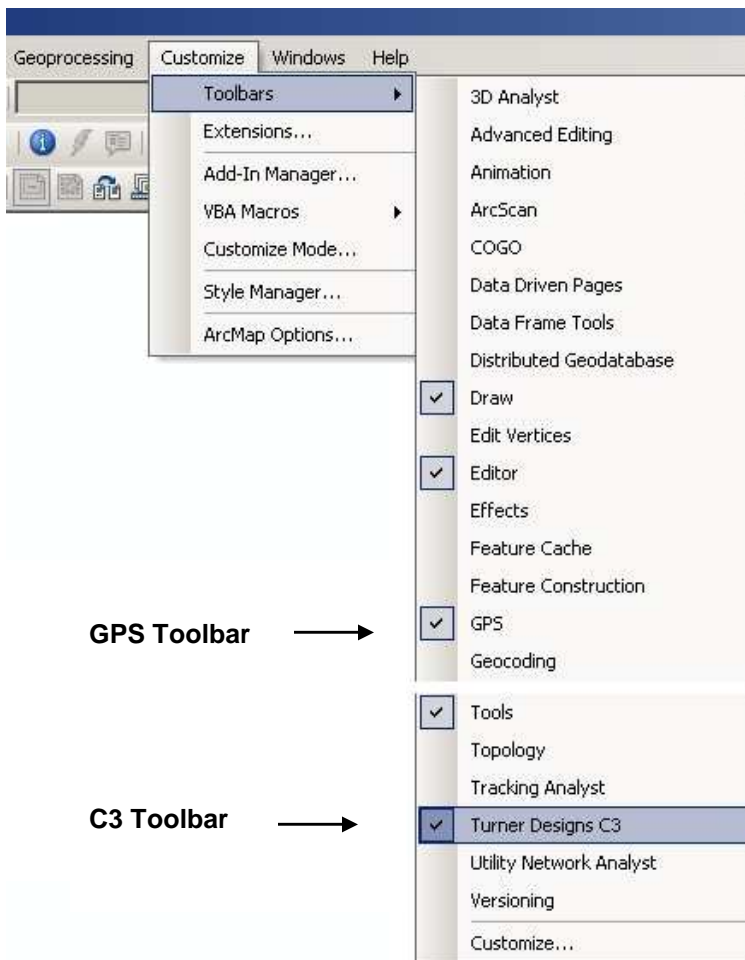
Steps:

Prepare C3 Fluorometer

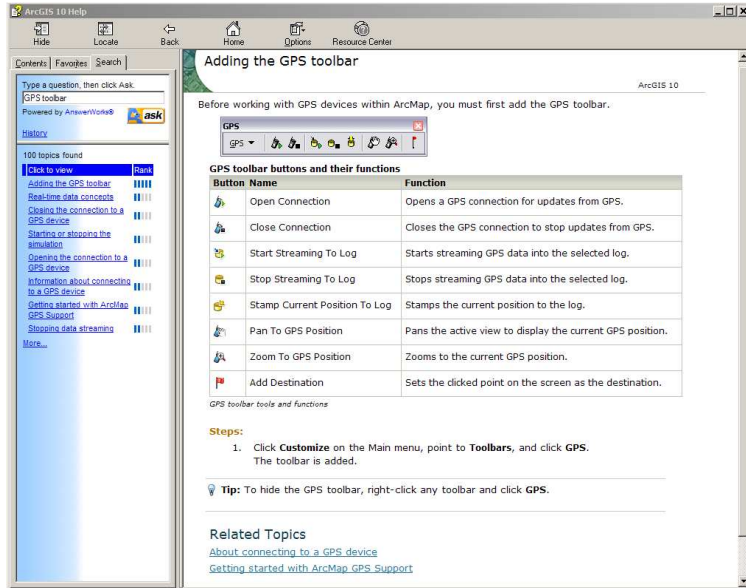
Run C-Soft and set up C3 for log sampling interval of 1 second (see Log Setup Section 3.4 of C3 Manual)
Initiate datalog session as per instructions in Section 3.4 of manual. (C-Soft will automatically shut down)
Power down and power up C3, it will take 90 seconds for data to start streaming

Prepare ArcMap

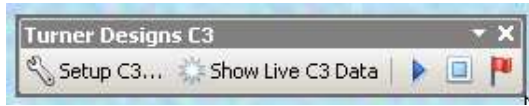
If not already installed, install C3 extension in ArcMap (double click TD_C3.esriAddIn)
Select both GPS Toolbar and Turner Designs C3 toolbar using *Customize/Toolbars*



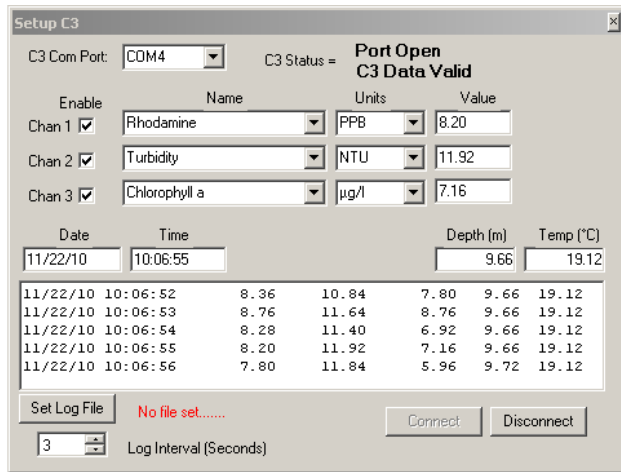
Connect to GPS on GPS toolbar (See ArcMap help for information on this)



Set up C3 Connection using C3 Toolbar (Setup C3)



Choose Com Port and Channel Settings then hit connect button. Data should start streaming in as shown below:



Choose Shapefile to log to using Set Log File Button (the form can now be closed).

Open Show Live C3 Data form which shows larger version of C3 data along with GPS data and Port/Logging Status.

Start/stop logging to file using toolbar buttons

Button	Name	Function
	Log Data To File	Starts Logging to file based on Log interval
	Stop/Pause Logging to File	Stops/Pauses logging
	Flag Data Point ¹	Adds Flag to current data point and gets user notes on flag (e.g. "Bad reading C3 out of water" or "Start Transect 3")

¹ Note that flag only commits point once the OK button is pressed on user input. Long delays in writing notes may influence location of flagged point.

Logged data has the following fields:

FieldName	Example	Notes
C3_Date	11/22/10	Current C3 Date
C3_Time	10:21:14	Current C3 Time
C3_DepthM	9.66	C3 Depth in Meters
C3_DegC	19.38	C3 Temperature in degrees Celsius
Chan1_Val	6.56	Channel 1 value
Chan1_Unit	PPB ²	Channel 1 Units (from C3 Setup Form. Not C-Soft)
Chan1_Type	Rhodamine	Channel 1 Name (from C3 Setup Form. Not C-Soft)
Chan2_Val	11.12	Channel 2 value
Chan2_Unit	NTU	Channel 2 Units (from C3 Setup Form. Not C-Soft)
Chan2_Type	Turbidity	Channel 2 Name (from C3 Setup Form. Not C-Soft)
Chan3_Val	7.68	Channel 3 value
Chan3_Unit	µg/l	Channel 3 Units (from C3 Setup Form. Not C-Soft)
Chan3_Type	Chlorophyll a	Channel 3 Name (from C3 Setup Form. Not C-Soft)
Lat_DD	-41.22914167	Latitude in Decimal degrees (Southern Latitudes negative)
Long_DD	173.0817033	Longitude in Degrees (Western Longitudes negative)
COG_True	17.58	Course over ground in degrees true
SOG	5.5556	Speed over ground in GPS Display Options Speed Units
SOG_Unit	Meters/Sec	GPS Speed over Ground Units
UTC_Date	21/11/2010	GPS date (in UTC)
UTC_Time	21:19:16	GPS Time (in UTC)
Flag	-1	Flag value (0 = no flag ; -1 = Flagged)
Flag_Notes	Start Transect 1	Flag Notes

² Channel names and units are logged as per the C3 setup form and not C-soft. These can be changed during a logging session but it is not recommended.