

CSB on the Great Barrier Reef: Summary of Current Project

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Vessels

1. Argo 24 m based at Cairns
2. Aroona 22 m based at Cairns
3. Gundoo Spirit 14 m based at North Keppel Island
4. Sharpshooter 22 m based at Cairns
5. Zosteria 4.2 m based at Brisbane
6. Serrata 7.9 m based at Brisbane
7. Spoilsport 20 m based at Cairns
8. Flying Fish V 23 m based at Cairns
9. Charlie1 4.2 m based at Cairns

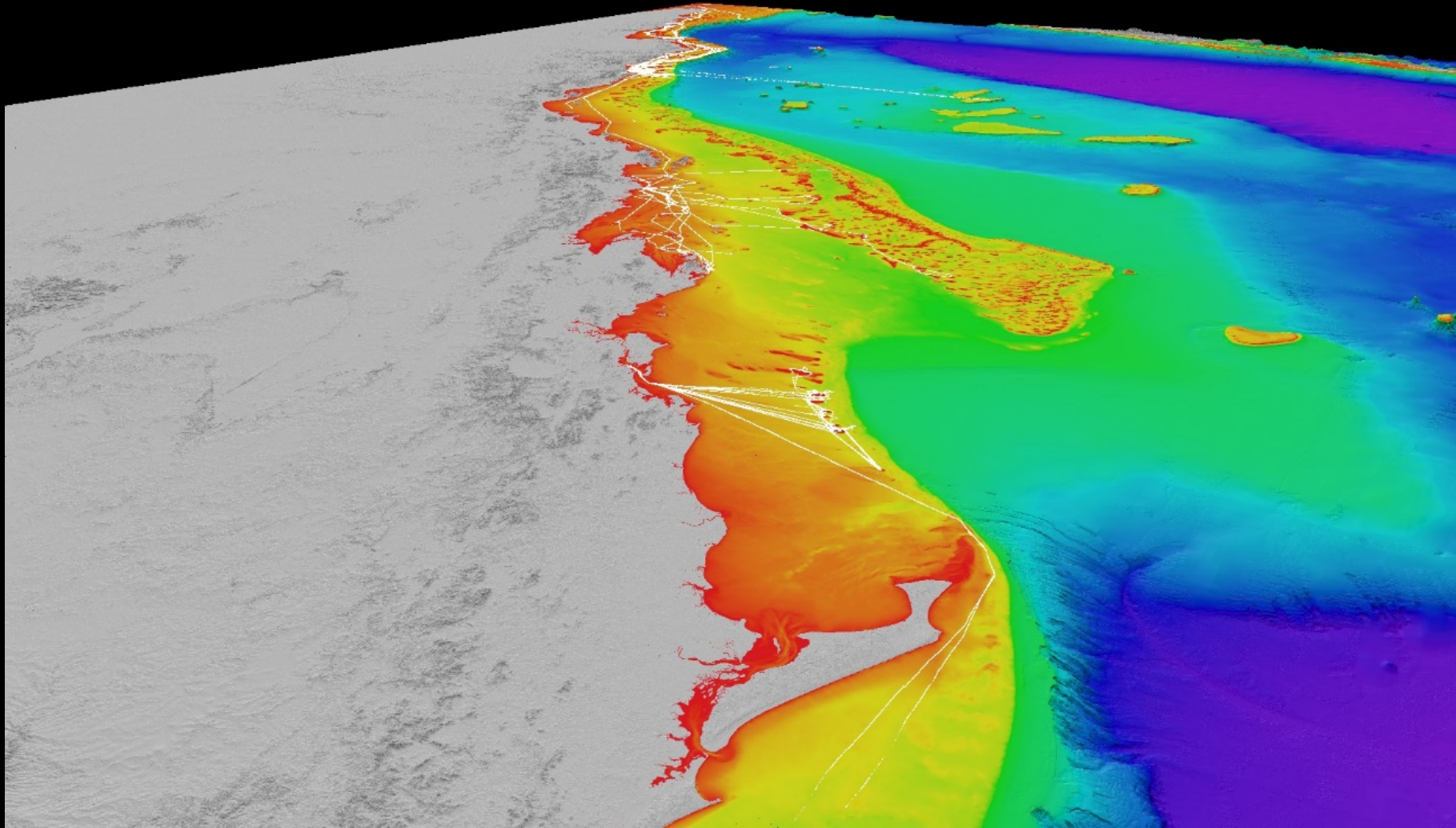
Vessels



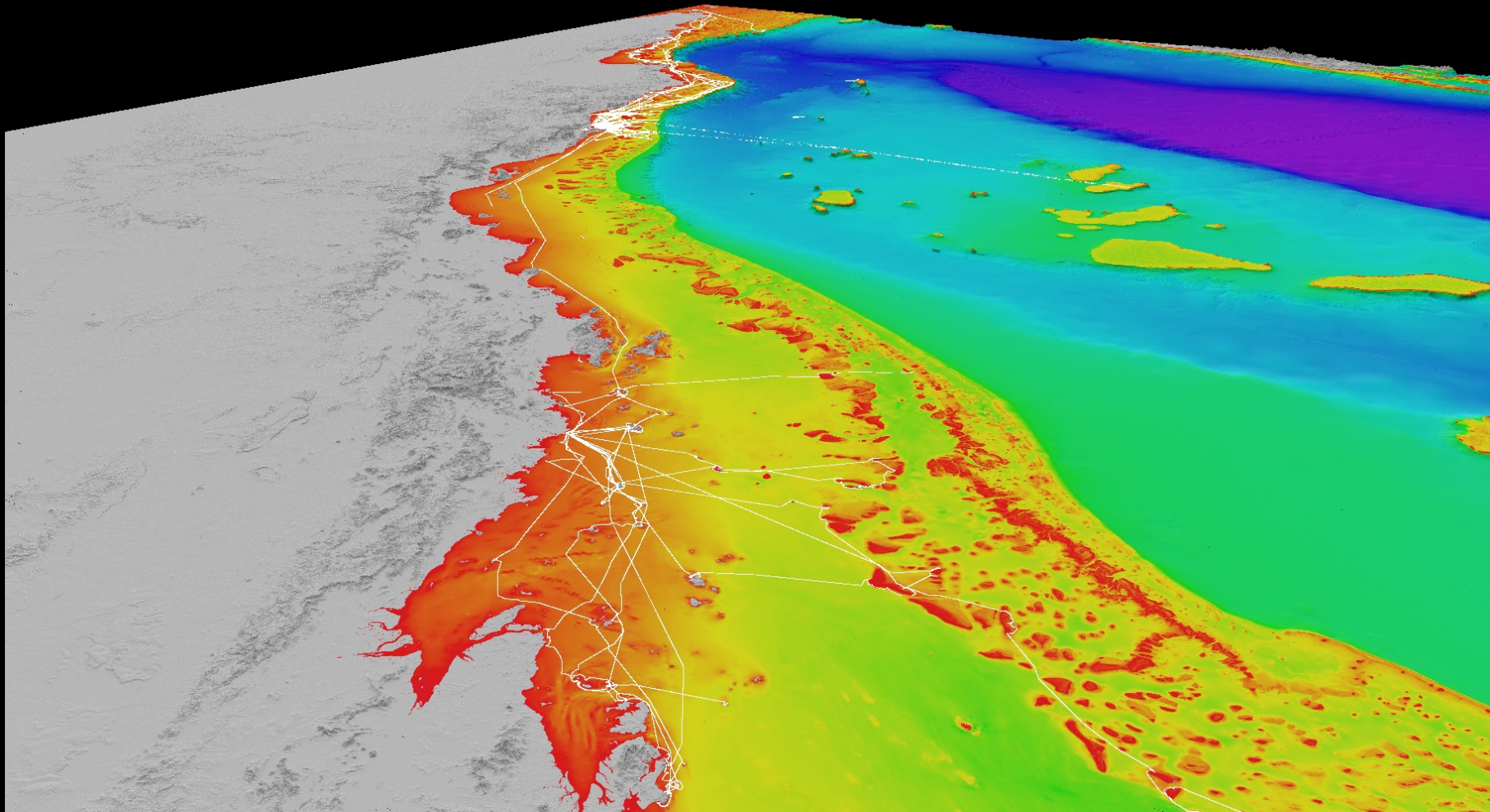
Plotters



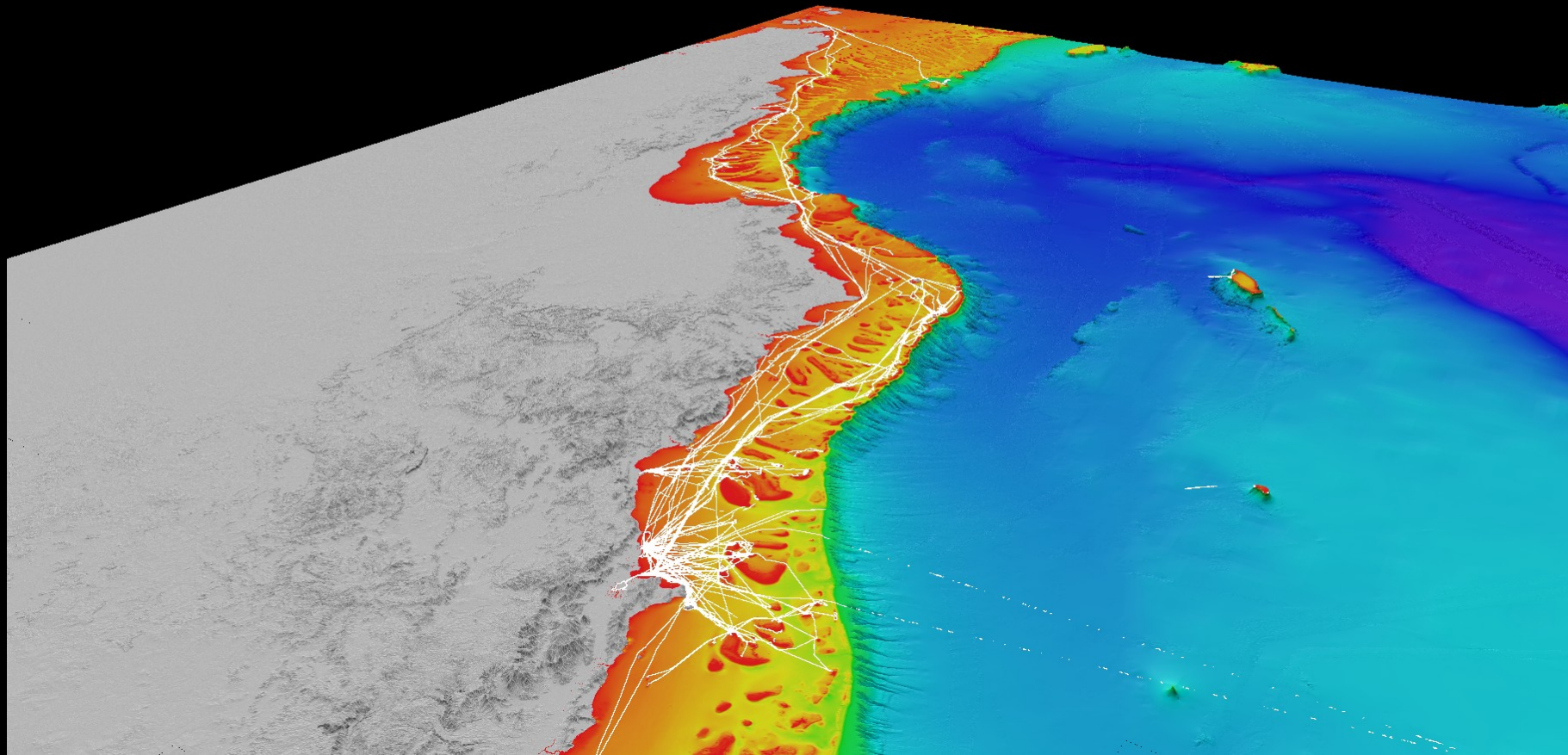
2020-21 southern GBR



2020-21 central GBR



2020-21 northern GBR

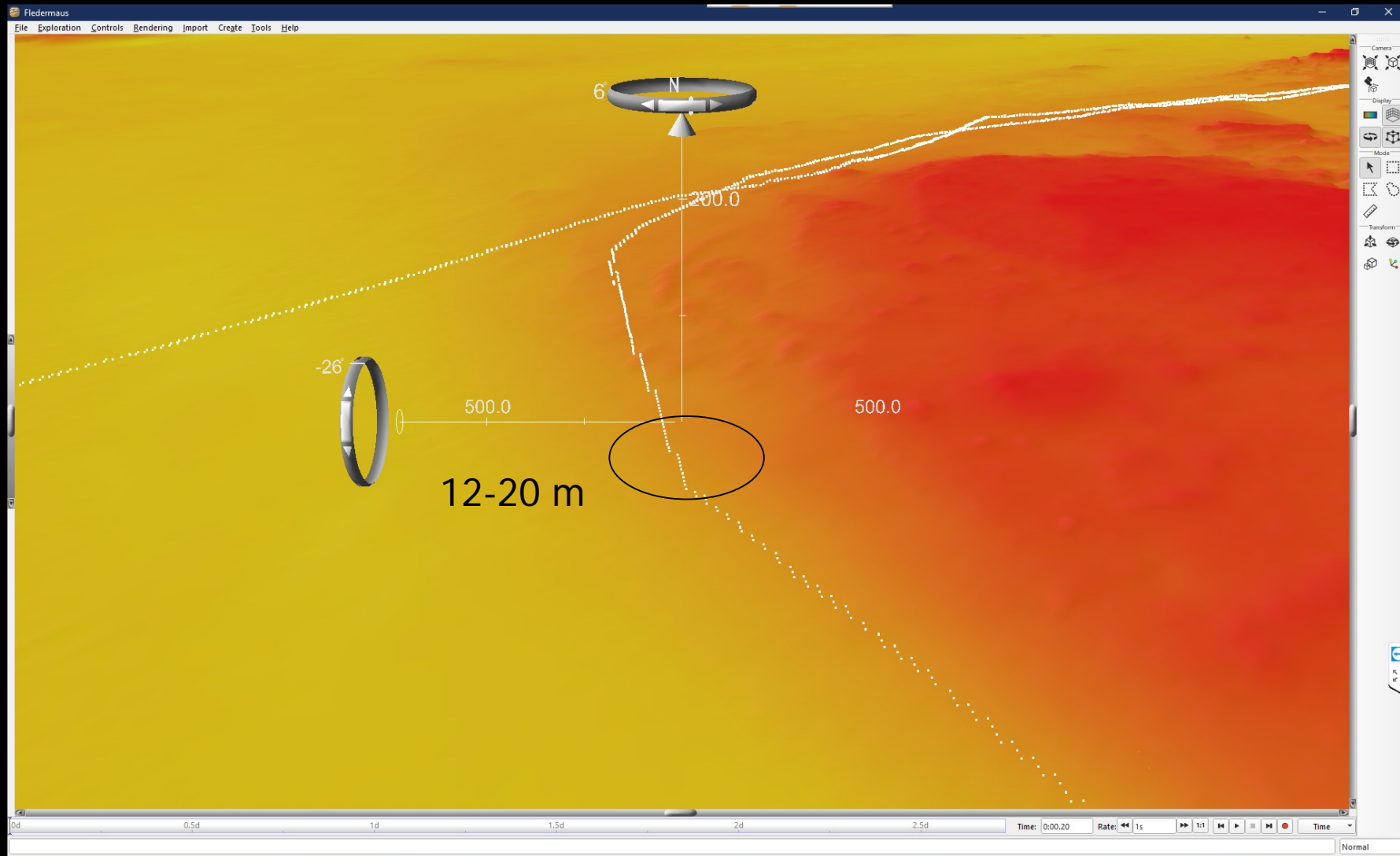


Python processing

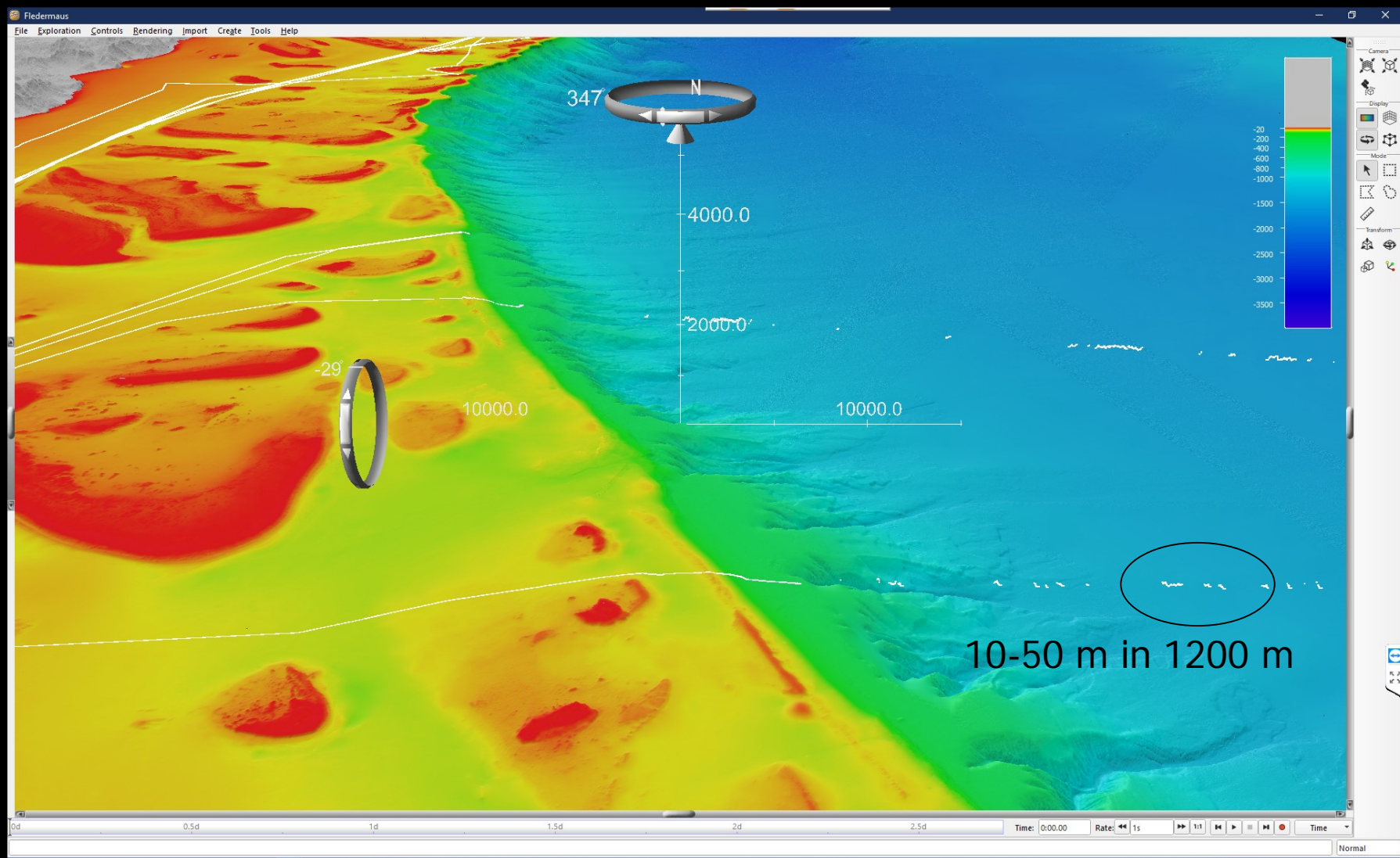
- SmartLog data logger stores .TSV files
- raw data are NMEA strings
- can have wrong dates, missing values
- reads GGA, RMC, ZDA, DBT strings
- lat, long, date, time, course, speed, depth
- report of errors, valid data points, %

The image shows a workflow for processing NMEA data. On the left, a TextPad window displays the raw NMEA data from a file named '00000007.TSV'. The data includes various NMEA sentences such as \$ECGGA, \$ECGLL, \$SECRMC, \$SECVTG, \$SECZDA, \$VWMTW, \$VWVLW, \$GPGGA, \$GPGLL, and \$GPRMC. A large blue arrow points from this window to the right, where another TextPad window shows the processed output in a TSV format. The output file is named '00000001.TSV' and has columns for 'latitude, longitude, date, time, speed, course, depth'. The data rows are formatted as: `-16.8013717,145.7184117,20200306,203053.00,0.98,326.33,0.56`. In the center, a small 'NMEA converter' dialog box is visible, showing the input directory as 'C:/temp/Charlie1_download_20210302' and the output directory as 'C:/temp/Charlie1_download_20210302_NMEAoutput_1'. Below the dialog, a 'Completed' window displays the processing results: 'All files completed processing'. At the bottom, a summary window shows: 'Valid data points: 4315', 'Processing errors: 94', and 'Percentage passed: 99.78%'.

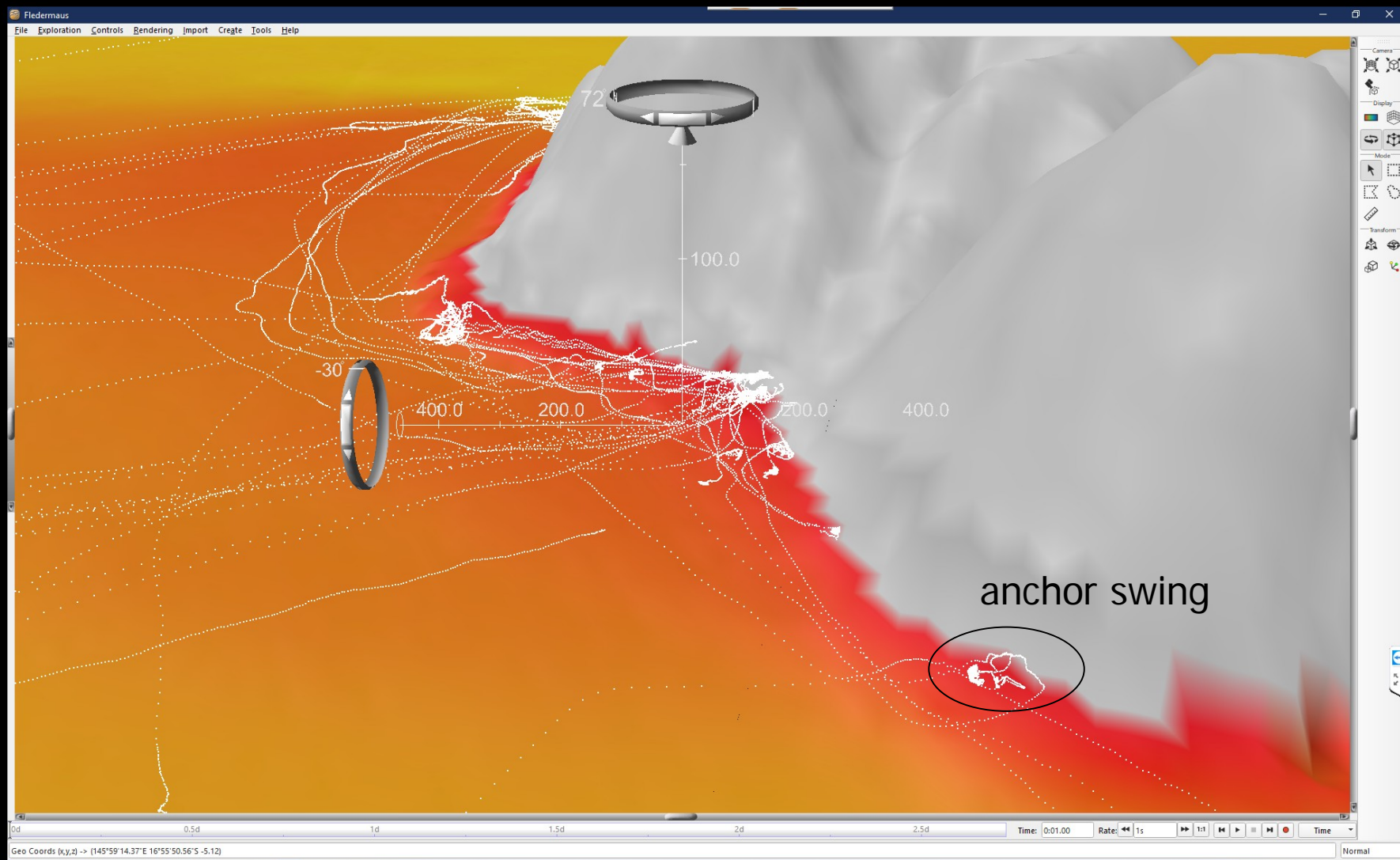
Errors – position with few decimal places



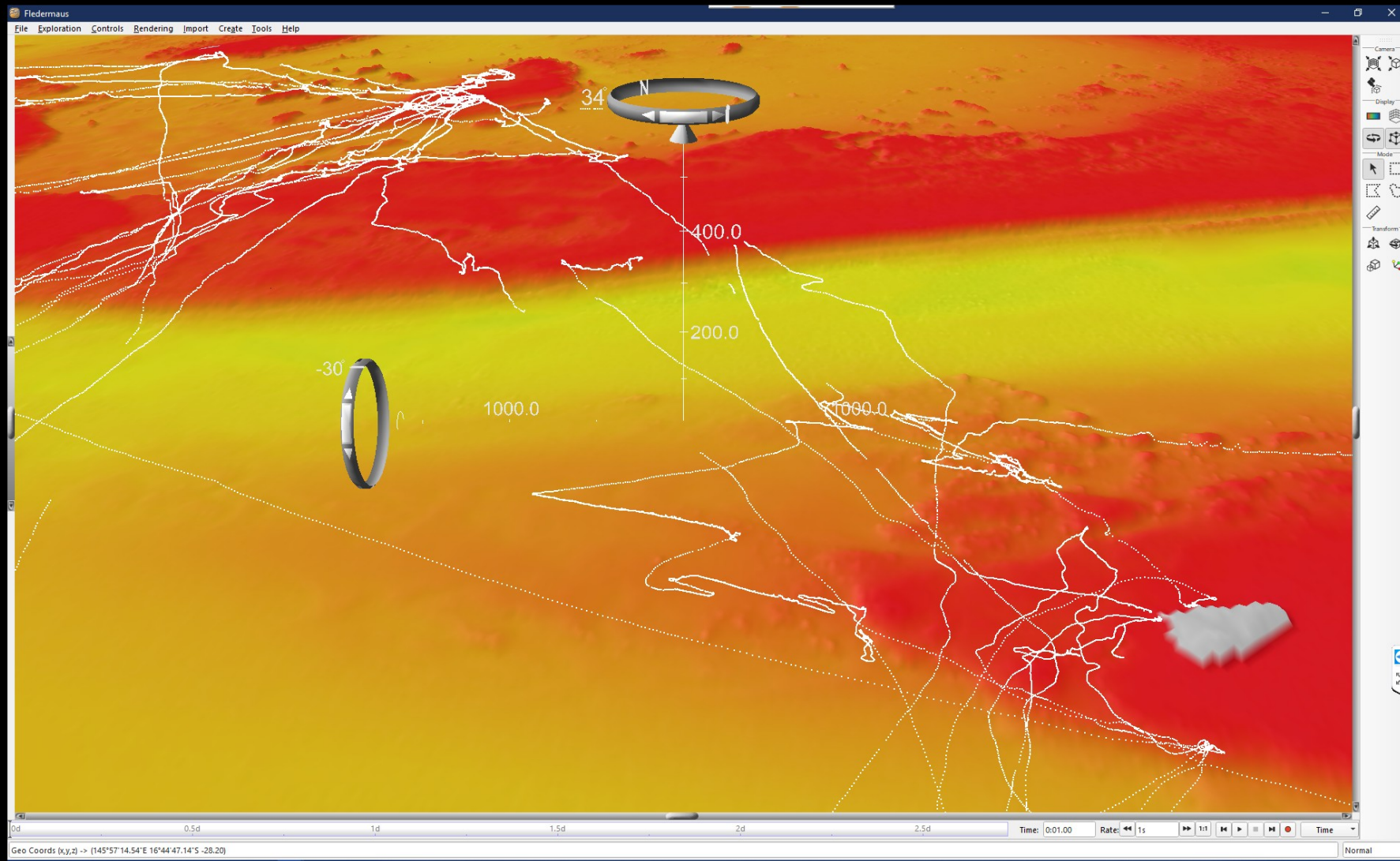
Errors – depths recorded beyond limits



Errors – high traffic areas



.....but mostly pretty good data!



Future work

1. add more volunteer vessels to CSB on GBR project
2. put python script online for TSV-CSV conversion
3. upload more CSB on GBR data to the DCDB
4. get approval by AHO to release CSB on GBR via DCDB
5. continue advising Australian efforts for acquiring CSB data