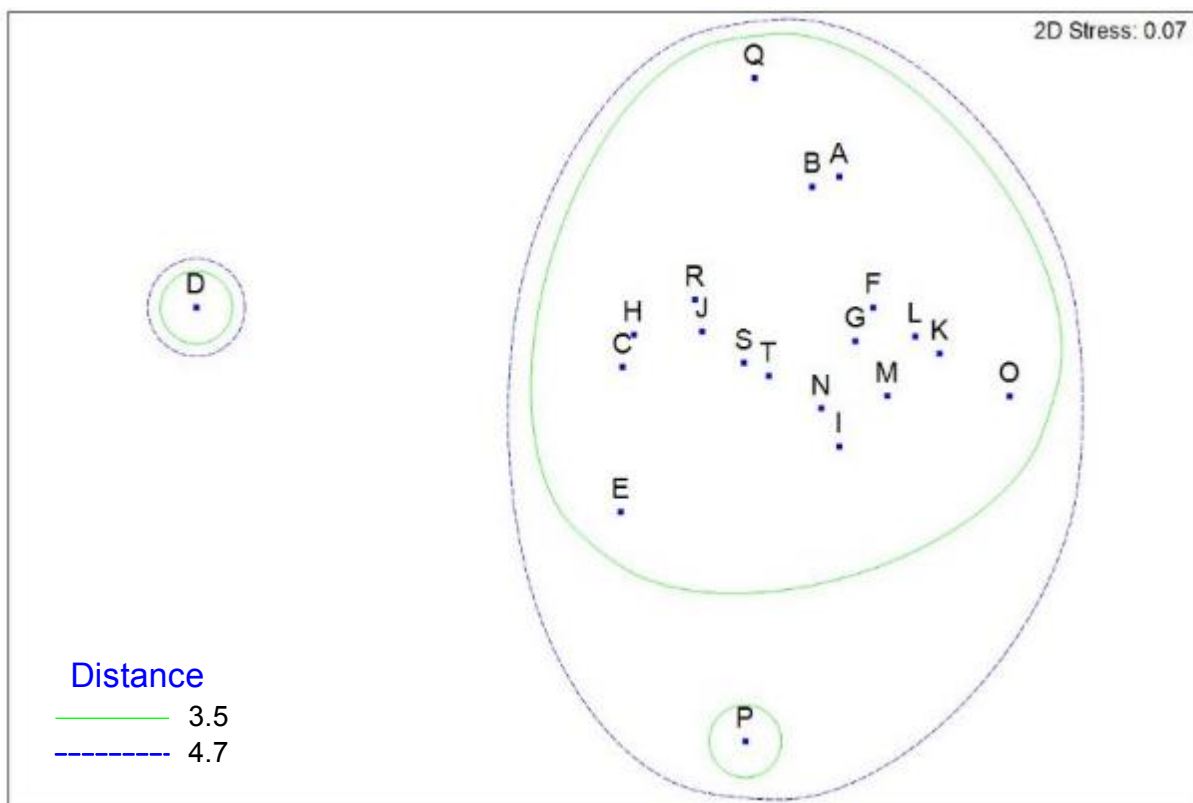


## Effects of bottom trawling and primary production on the composition of biological traits in benthic assemblages

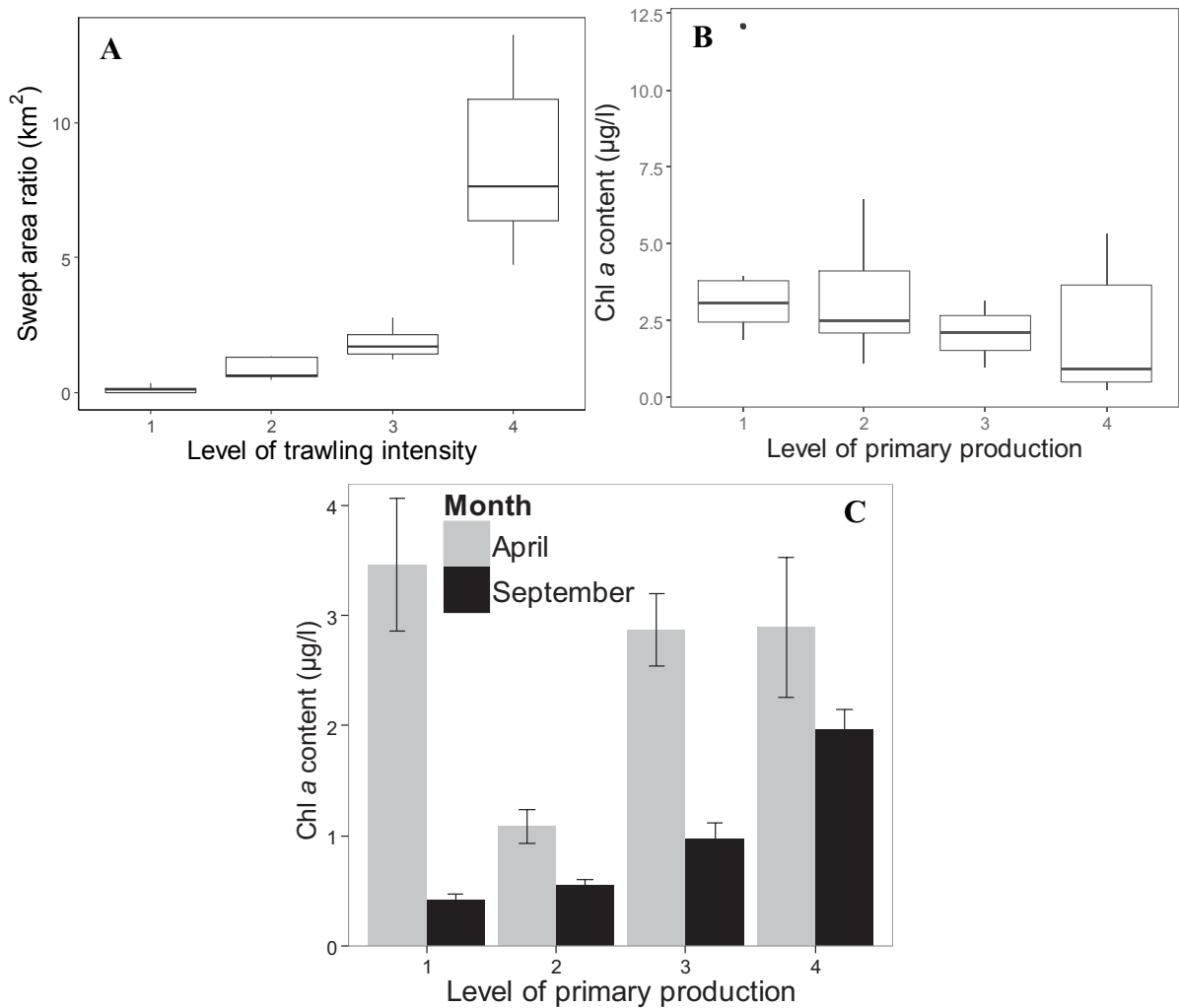
L. M. Howarth\*, J. J. Waggitt, S. G. Bolam, J. Eggleton, P. J. Somerfield, J. G. Hiddink

\*Corresponding author: leigh.howarth@dal.ca

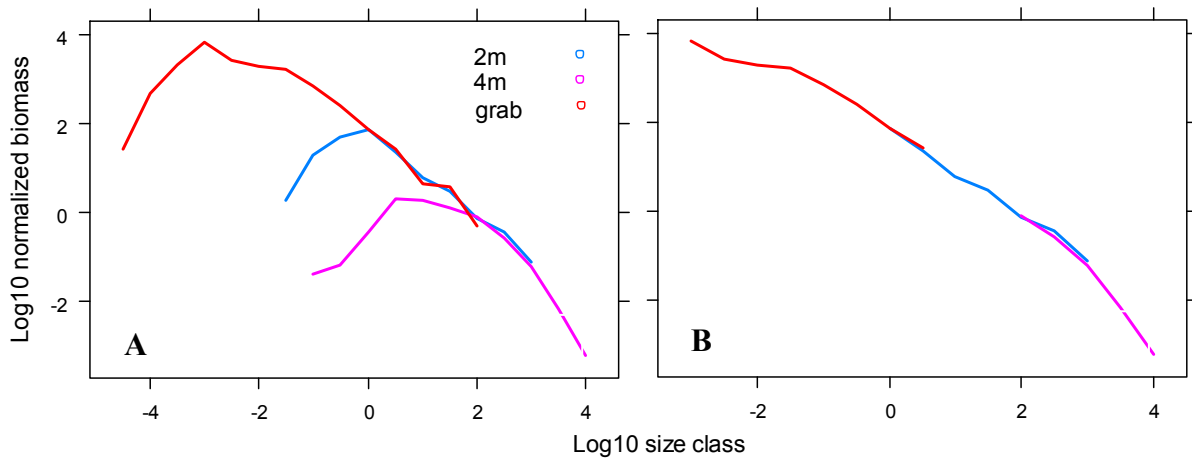
Marine Ecology Progress Series 602: 31–48 (2018)



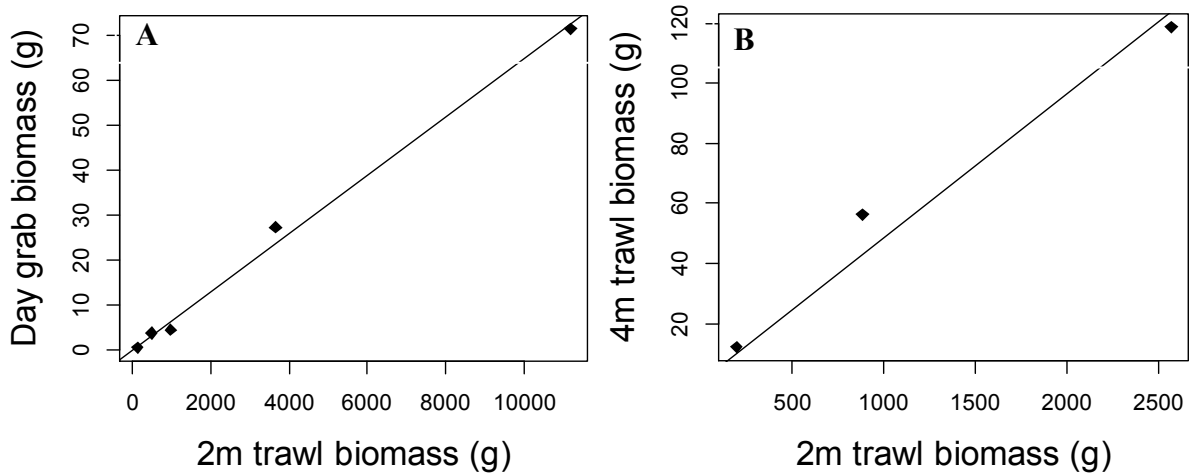
**Fig. S1.** nMDS plots of the different stations and their environmental characteristics before removing outliers.



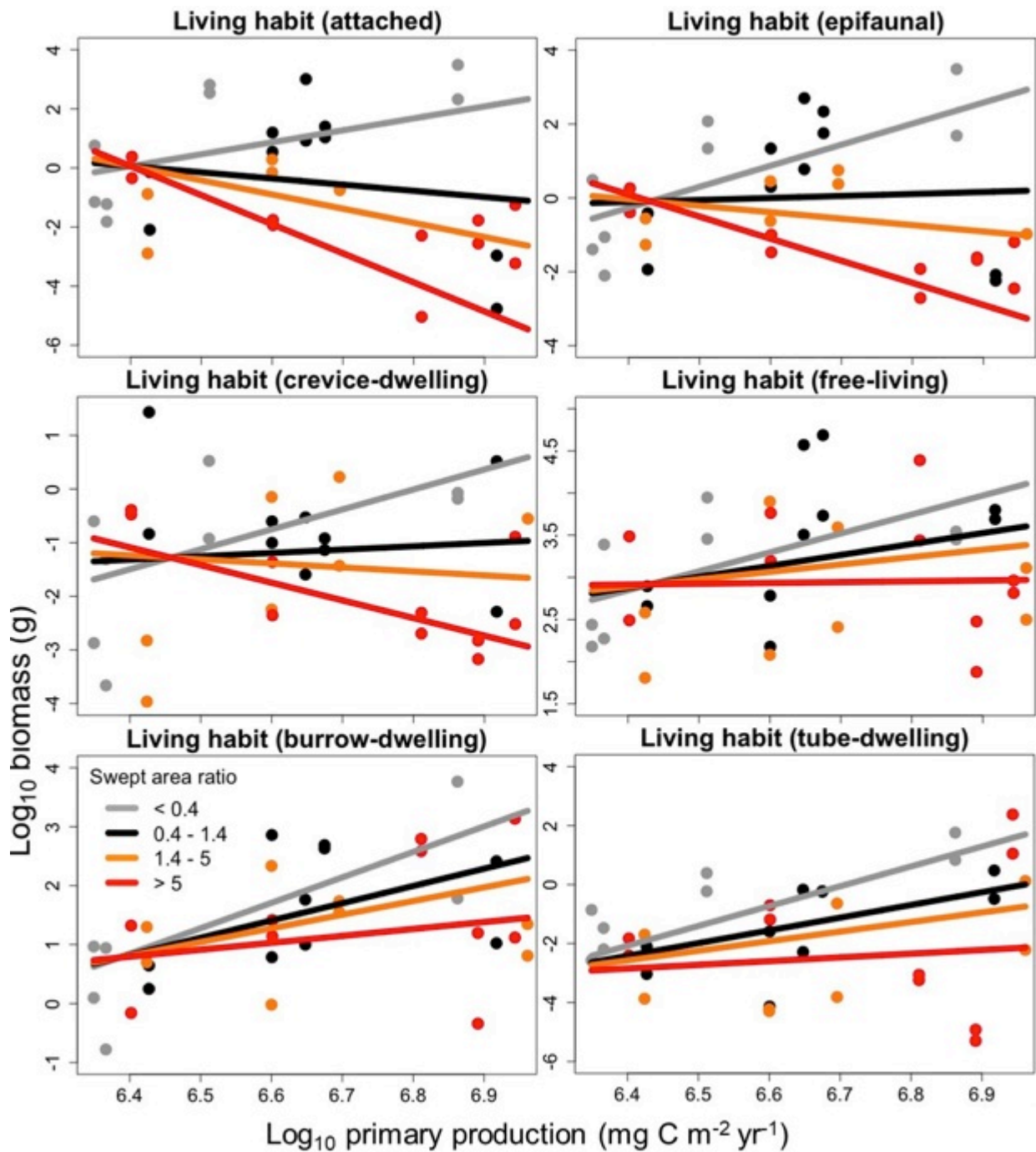
**Fig. S2.** The mean swept area ratio of the sampling stations plotted against their *a priori* experimental level of trawling intensity (A). The mean total Chl-a content of the sediment samples collected in April plotted against their *a priori* experimental level of primary production (B). The mean total Chl-a content of the water samples collected in September and April plotted against their *a priori* experimental level of primary production (C). Error bars represent  $\pm 1$  SE.



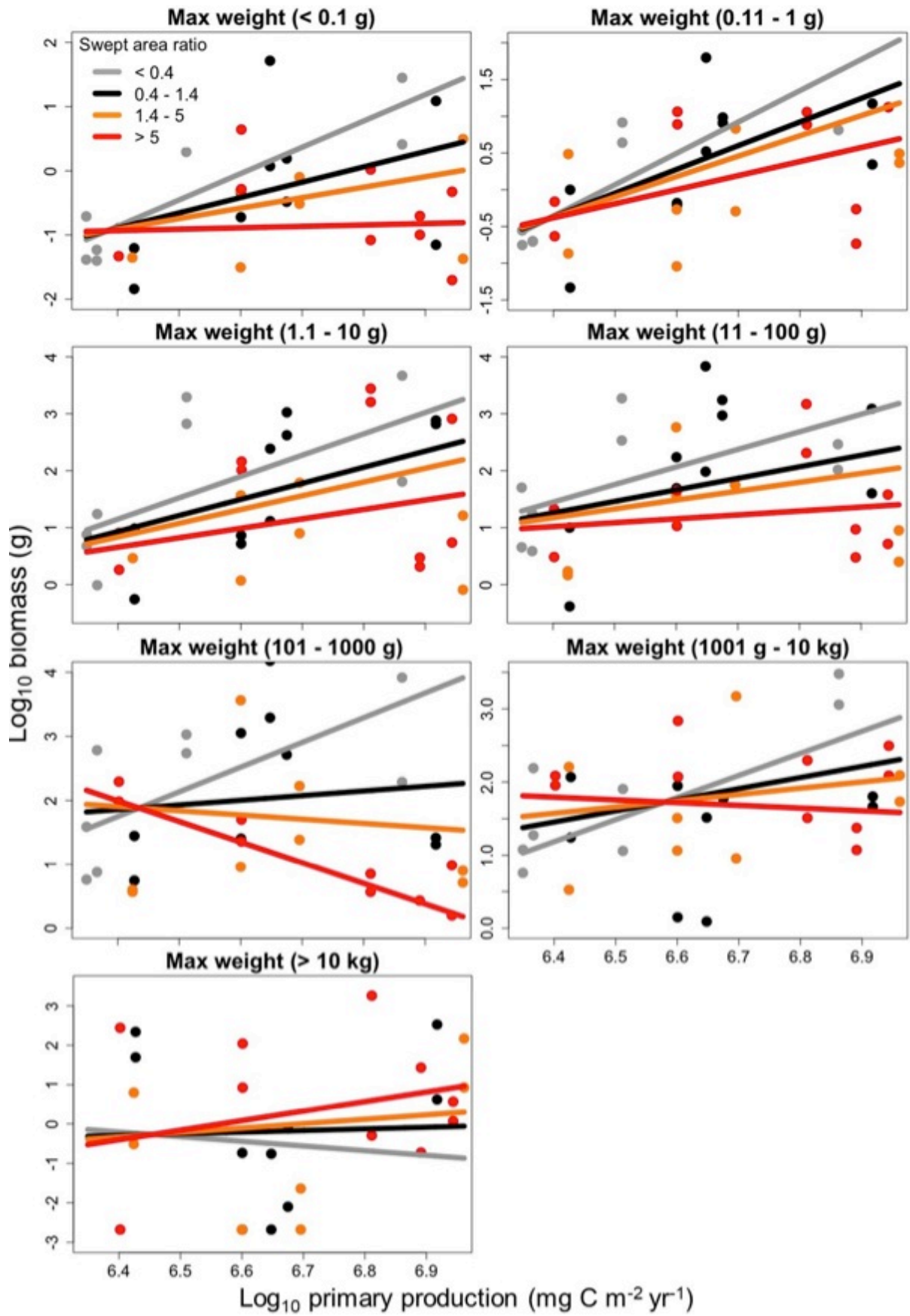
**Fig. S3.** The sampling gears captured organisms of markedly different size ranges (A). The amount of biomass each gear contributed was corrected to represent the same sampling area and were restricted to the size ranges that were sampled effectively. The extreme size classes inefficiently captured by each gear were then removed, resulting in a clear negative slope (B).



**Fig. S4.** Linear regressions models used to generate the catch coefficients. These were used to determine how much biomass the various gears contributed towards the final dataset. x and y axes represent normalised biomass.



**Fig. S5.** Biomass of modalities within the trait “living habit”, plotted against primary production and categorical levels of trawling intensity. Trend lines fitted by linear models.



**Fig. S6.** Biomass of modalities within the trait “maximum weight”, plotted against primary production and categorical levels of trawling intensity. Trend lines fitted by linear models.

**Table S1.** The latitude, longitude, mean annual primary productivity, mean annual trawling pressure, depth and mean particle size of the 1 x 0.6 nautical mile stations sampled in this study.

| Station | Longitude | Latitude | Primary production<br>(mg C m <sup>-2</sup> yr <sup>-1</sup> ) | Swept area<br>ratio (yr <sup>-1</sup> ) | Depth<br>(m) |
|---------|-----------|----------|--|---|--------------|
| A       | 50.95762  | -5.81468 | 581  | 0.17                                    | 86.5         |
| B       | 50.96952  | -5.68377 | 572  | 0.34                                    | 83.4         |
| C       | 50.14108  | -4.81793 | 672  | 0.01                                    | 62.0         |
| D       | 50.13779  | -4.89094 | 777  | 0.01                                    | 47.7         |
| E       | 50.92419  | -4.76168 | 955  | 0.11                                    | 41.6         |
| F       | 50.94027  | -5.42183 | 618  | 0.58                                    | 76.3         |
| G       | 50.10285  | -4.01841 | 735  | 0.47                                    | 64.0         |
| H       | 50.2217   | -4.19    | 770  | 0.63                                    | 41.3         |
| I       | 50.3062   | -3.22847 | 792  | 1.32                                    | 53.5         |
| J       | 51.42451  | -4.85315 | 1009   | 1.36                                    | 55.3         |
| K       | 50.8516   | -5.46147 | 616  | 1.22                                    | 77.0         |
| L       | 50.00633  | -3.9267  | 735  | 1.92                                    | 70.0         |
| M       | 50.14212  | -3.31622 | 808  | 1.49                                    | 62.0         |
| N       | 51.49193  | -4.96128 | 1054   | 2.80                                    | 51.4         |
| O       | 50.69918  | -5.5469  | 603  | 11.76                                   | 75.3         |
| P       | 50.7029   | -5.11145 | 613  | 13.23                                   | 59.4         |
| Q       | 51.49384  | -5.8869  | 735  | 7.10                                    | 96.0         |
| R       | 51.44706  | -5.10275 | 907  | 6.14                                    | 57.0         |
| S       | 51.47474  | -4.98225 | 1036   | 4.74                                    | 50.8         |
| T       | 51.52256  | -5.15893 | 983  | 8.18                                    | 43.7         |