



Summary of PHA AIS Survey Data

Brims Tidal Array

(Appendix B)

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1. AIS Analysis

This Appendix presents the AIS data used in the Preliminary Hazard Analysis. Analysis was carried out on two separate 28 day periods in summer and winter 2010.

Plots of all the tracks recorded within 5nm of the AfL area during the summer and winter periods, colour-coded by vessel type, are presented in Figure 1.1 and Figure 1.2, respectively.

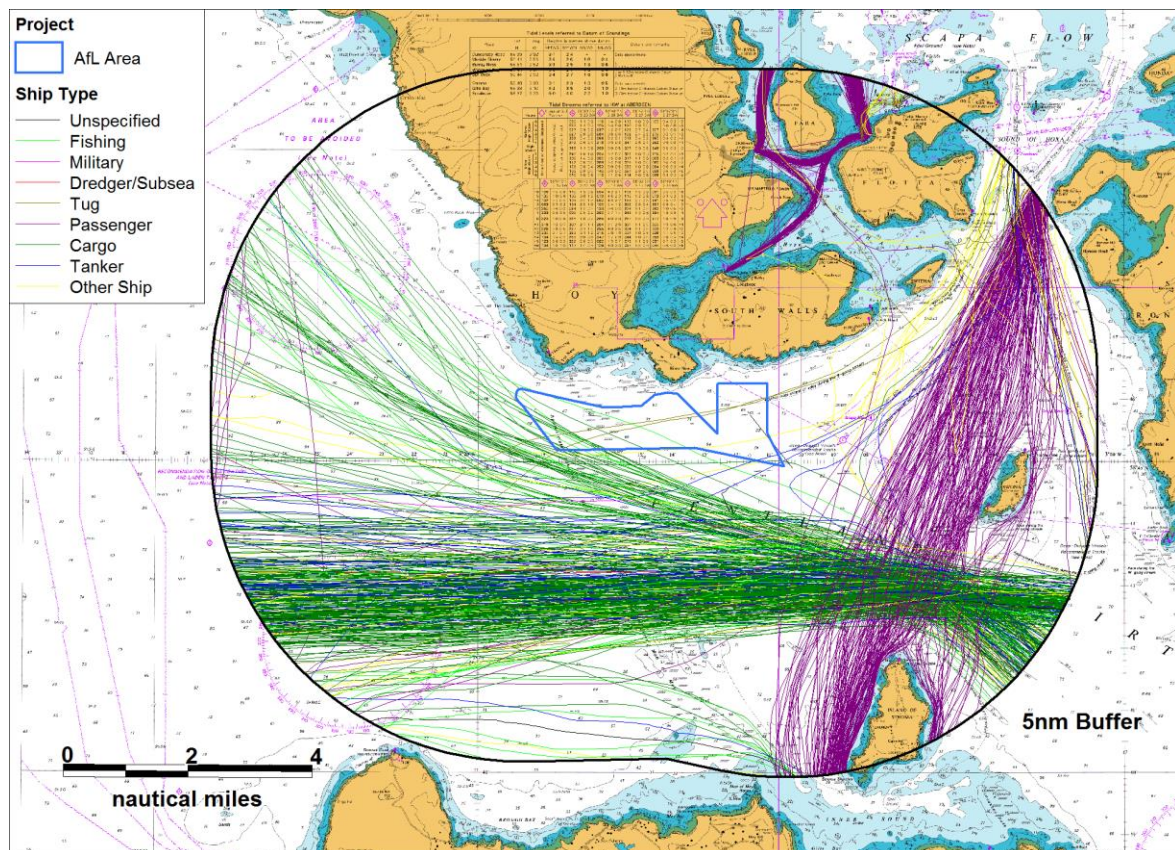


Figure 1.1 AIS Tracks by Type – 28 Days in Summer 2010

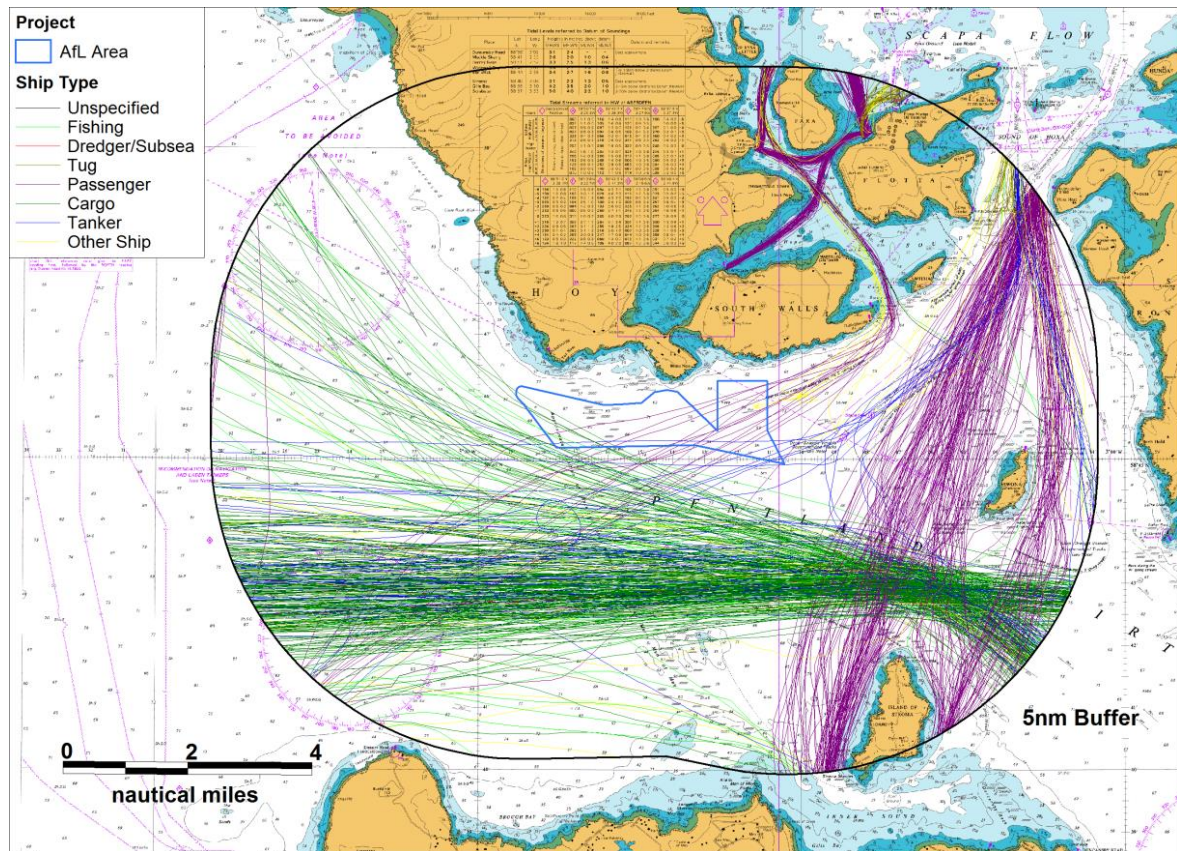


Figure 1.2 AIS Tracks by Type – 28 Days in Winter 2010

During the summer period there was an average of 20 unique vessels per day passing within 5nm, with a maximum of 32 on the busiest day, 17th July 2010. Twenty-two vessels were recorded intersecting the AfL area during the survey. On average 1 to 2 vessels per day were crossing the AfL area, with majority of tracks being cargo (54%) and fishing vessels (18%).

In the winter period, an average of 18 unique vessels per day were tracked within 5nm, with 27 on the busiest day, 14th November 2010. In the winter period, an average of 18 unique vessels per day were tracked within 5nm, with 27 on the busiest day. Twenty-four vessels were recorded intersecting the AfL area during the survey. On average 1 to 2 vessels per day were crossing the AfL area, with majority of tracks being passenger ferries (42%) and cargo vessels (29%).

Figure 1.3 presents the ship type distribution (excluding 1% unspecified in each period) within 5nm of the AfL area.

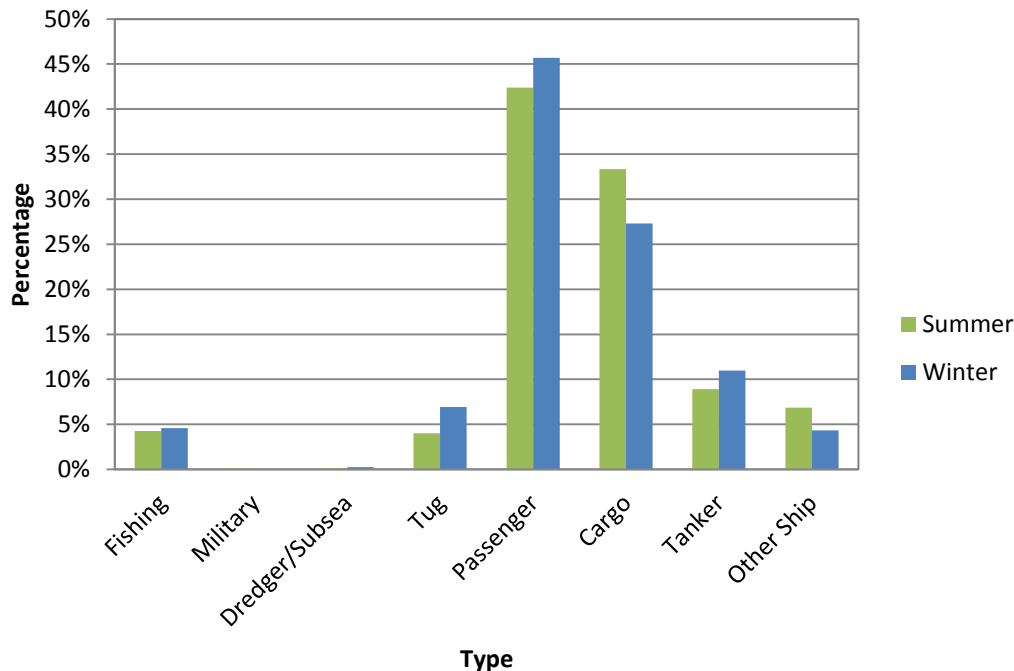


Figure 1.3 Vessel Types identified in proximity to the AfL Area

Overall, 44% of vessels identified during the combined survey period (summer and winter 2010) were passenger vessels. The majority of the passenger vessel tracks were made by the *Pentalina* which transited east of the AfL area between Gills Bay in Caithness and St Margaret’s Hope on Orkney, making typically 3 return trips per day. The *Hamnavoe* ferry was also tracked crossing the former AfL area when routeing between Scrabster and Stromness via Scapa Flow, particularly in winter. The normal route is west of Hoy and via Hoy Mouth with the alternative route via Scapa Flow being taken for the comfort of passengers, particularly when heading northbound to Stromness during strong westerlies and ebb tide.

Approximately 30% of vessels were cargo ships, the vast majority transiting through the Outer Sound of the Pentland Firth.

Plots of the tracks within 5nm of the AfL area during summer and winter, colour coded by vessel length and vessel draught, are presented in Figure 1.4 to Figure 1.7.

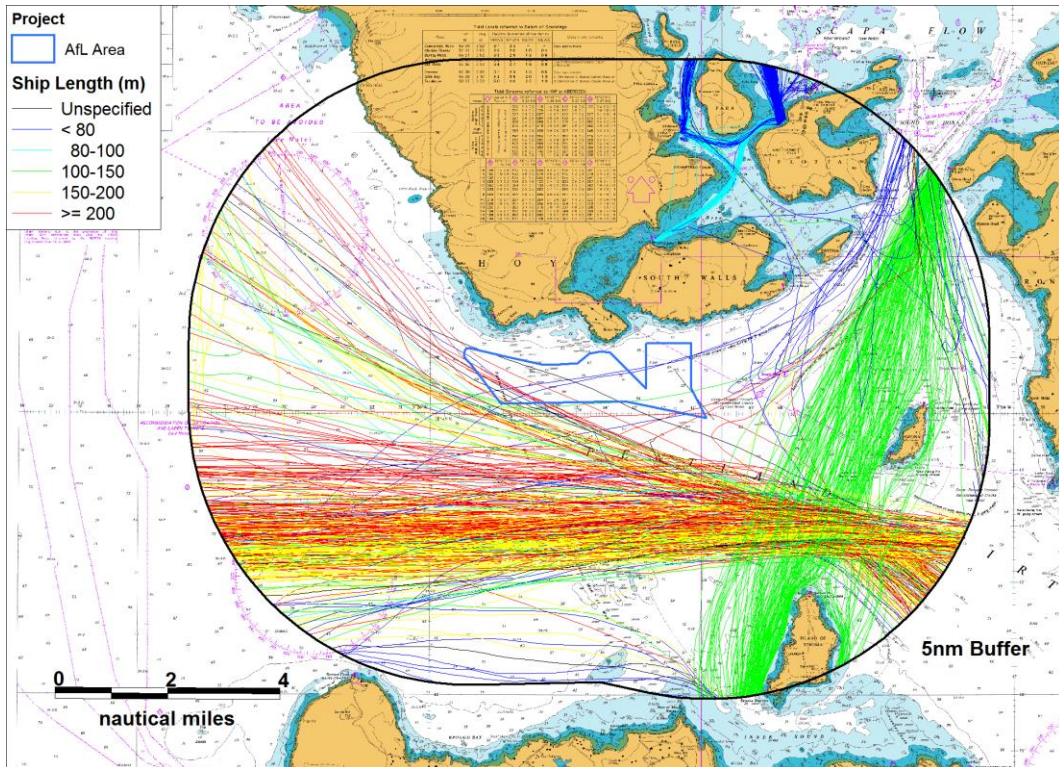


Figure 1.4 Summer 2010 AIS Tracks by Length

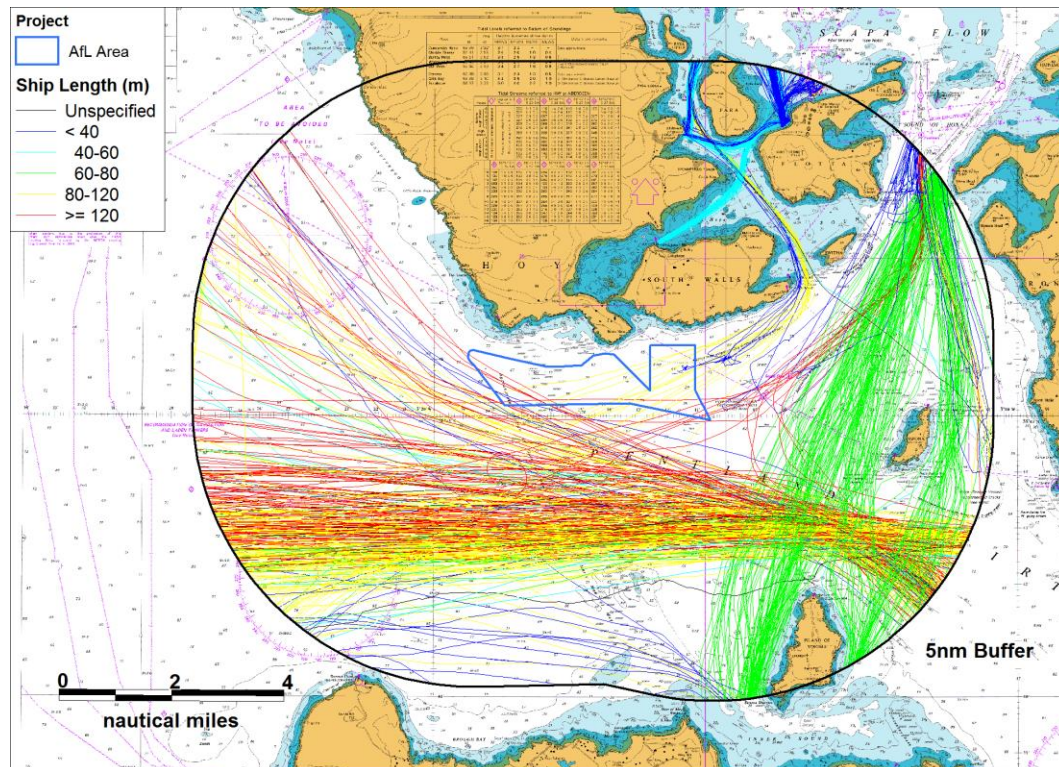


Figure 1.5 Winter 2010 AIS Tracks by Length

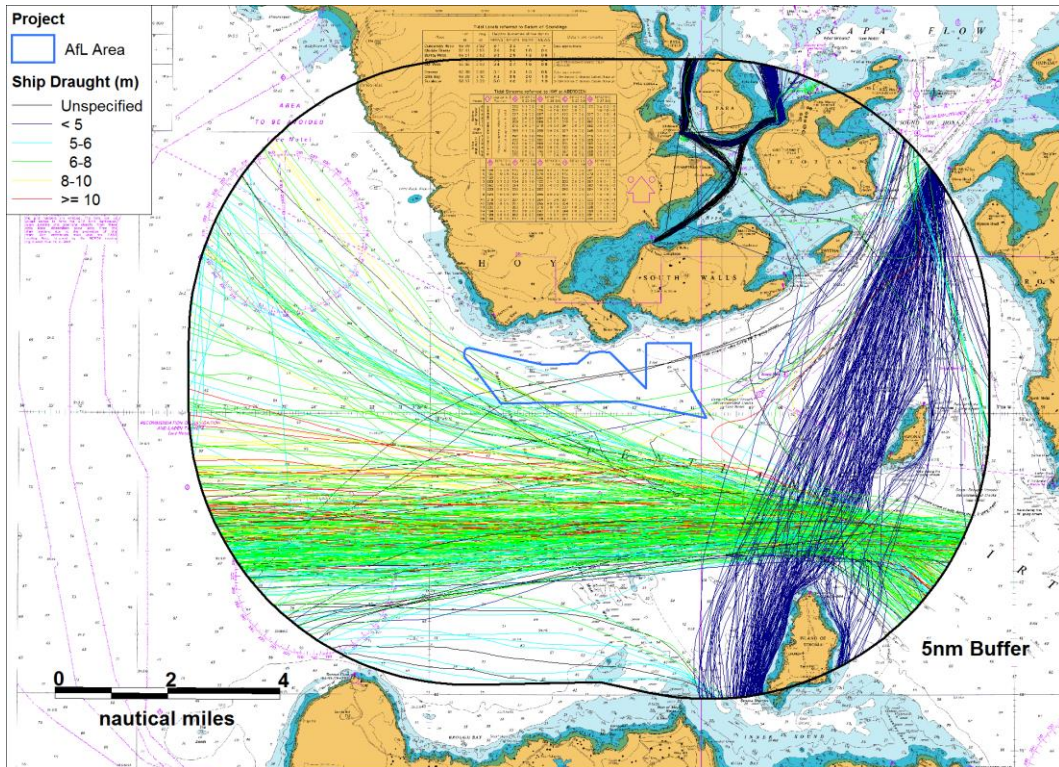


Figure 1.6 Summer 2010 AIS Tracks by Draught

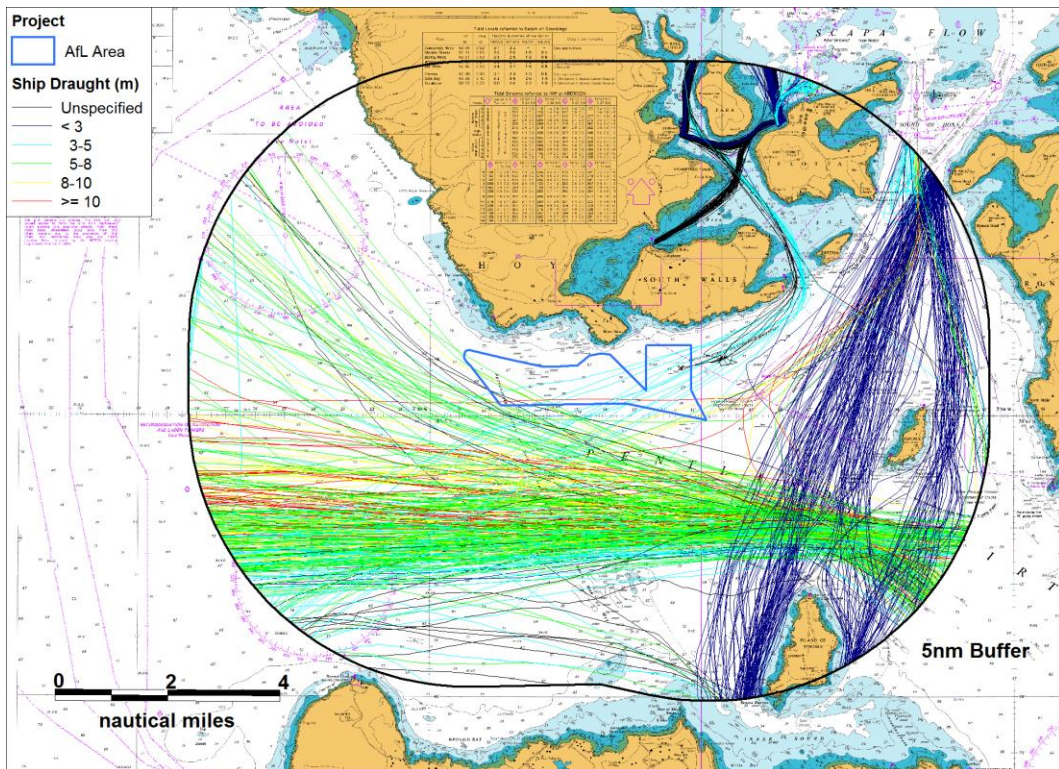


Figure 1.7 Winter 2010 AIS Tracks by Draught

In the summer period, the longest vessels were the container ships *OOCL Montreal* at 294m, bound for Montreal transiting the Outer Sound between Montreal and Hamburg. The container vessel *OOCL Montreal* was also the longest vessel recorded during the winter survey, tracked three times transiting the Outer Sound.

The deepest draught vessel during the summer survey was the tanker *Navion Europa*, at 15.8m, bound for Rotterdam and transiting east of the AfL area of search. The bulk carrier *Yeoman Bridge*, with a draught of 14m, was the deepest draught vessel tracked during the winter period, transiting through the Outer Sound to Isle of Grain, UK.

Other large vessels included tankers associated with the Flotta Oil Terminal identified to be using the recommended channels in and out of Scapa Flow.