

Evaluation of Field-Collected Drifter and In Situ Fluorescence Data Measuring Subsurface Dye Plume Advection/Dispersion and Comparisons to High-Frequency Radar-Observation System Data for Dispersed Oil Transport Modeling

APPENDIX G – FLUORESCENCE DATA FOR JUNE & NOVEMBER 2006

**A Final Report Submitted to
The Coastal Response Research Center**

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Appendix G. Fluorescence Data for June and November 2006

Appendix G contains fluorescence data for the June 2006 and November 2006 experiments. In the November 2005 and March 2006 experiments, the CTD (which measured conductivity and temperature versus depth) apparatus was also used to measure fluorescence as a function of depth at specific stations located by longitude and latitude. Thus, the fluorescence data for the November 2005 and March 2006 experiments are in Appendix F. However, in the June 2006 and November 2006 experiments, all fluorescence data were collected with the high resolution profiling fluorometer, which was raised and lowered as the sampling boat transited the plume. Thus, the June and November 2006 data are in the form of continuous profiles of varying depth. Transect plots for all June and November 2006 experiments are shown here along with additional detailed analysis of the November 02, 2006 deployment.

G.1 Results of June 21, 2006 Experiment

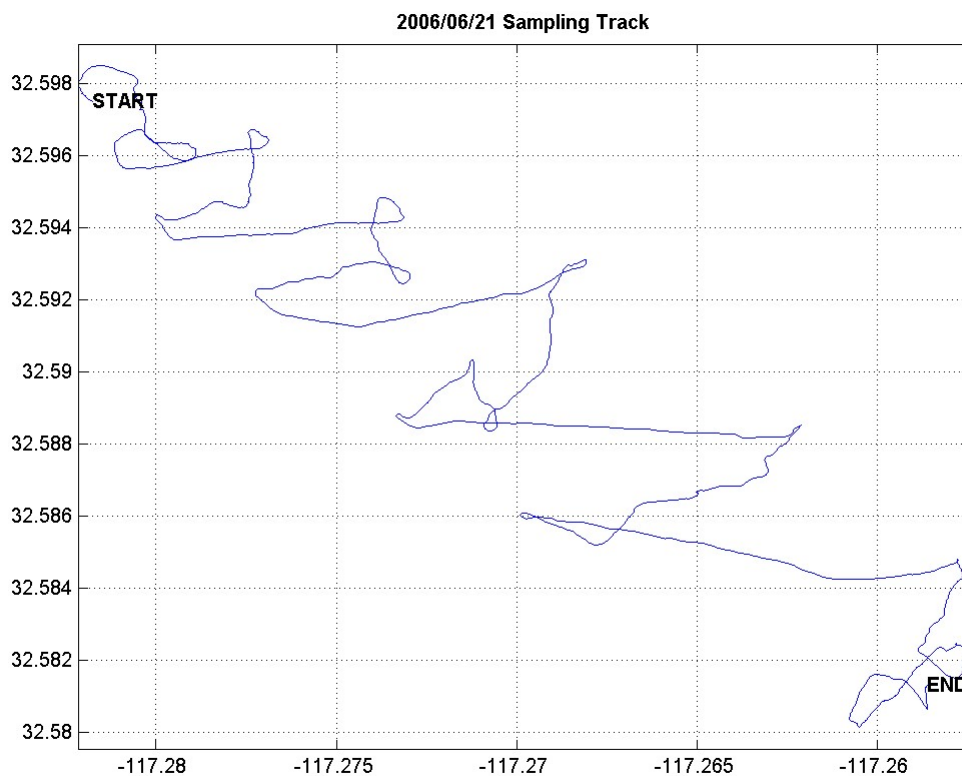


Figure G.1-1. Underway fluorometer sampling track for 21 June 2006 from GPS waypoints.

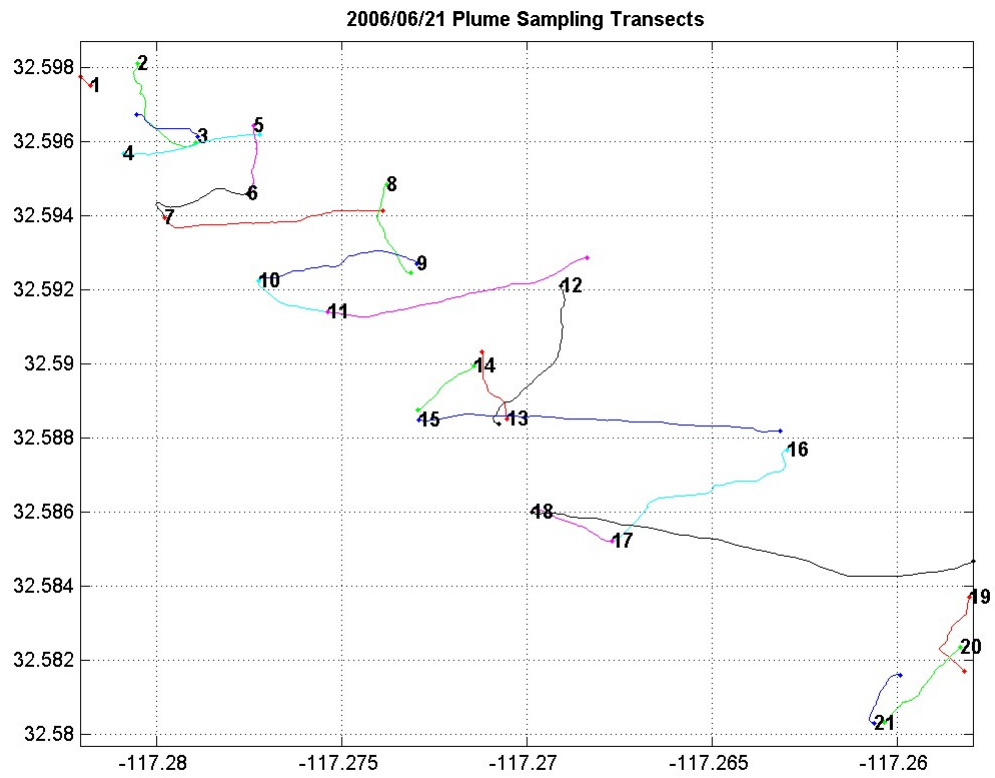


Figure G.1-2. Fluorometer sampling transect designations for 21 June 2006.

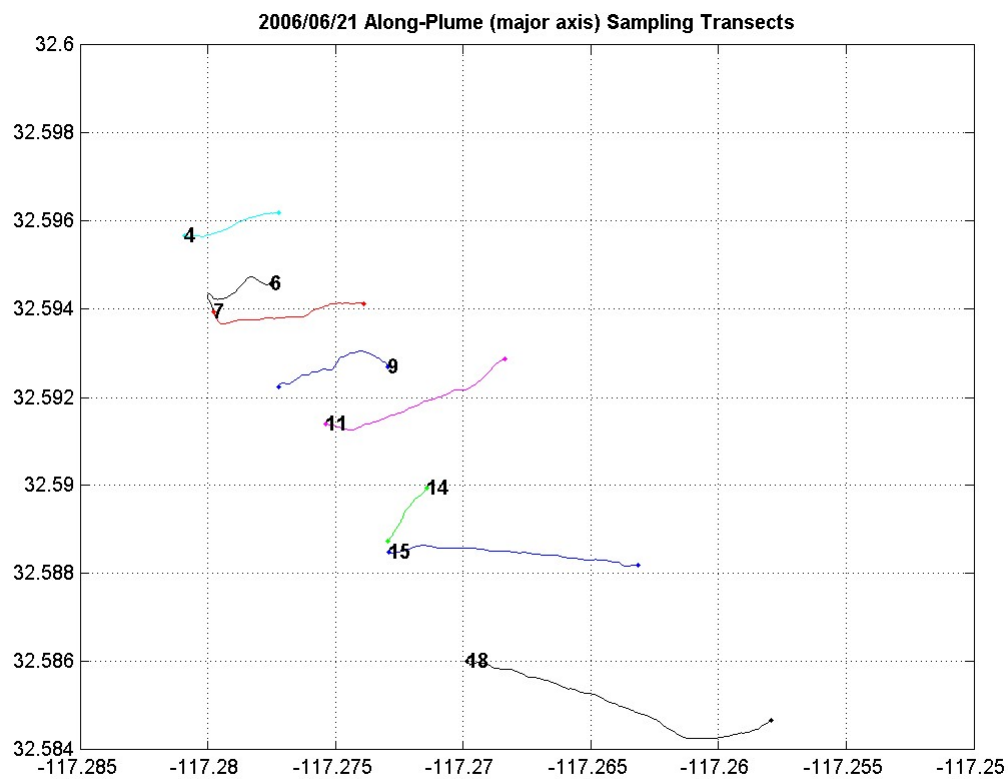


Figure G.1-3. Fluorometer along-plume sampling transects for 21 June 2006.

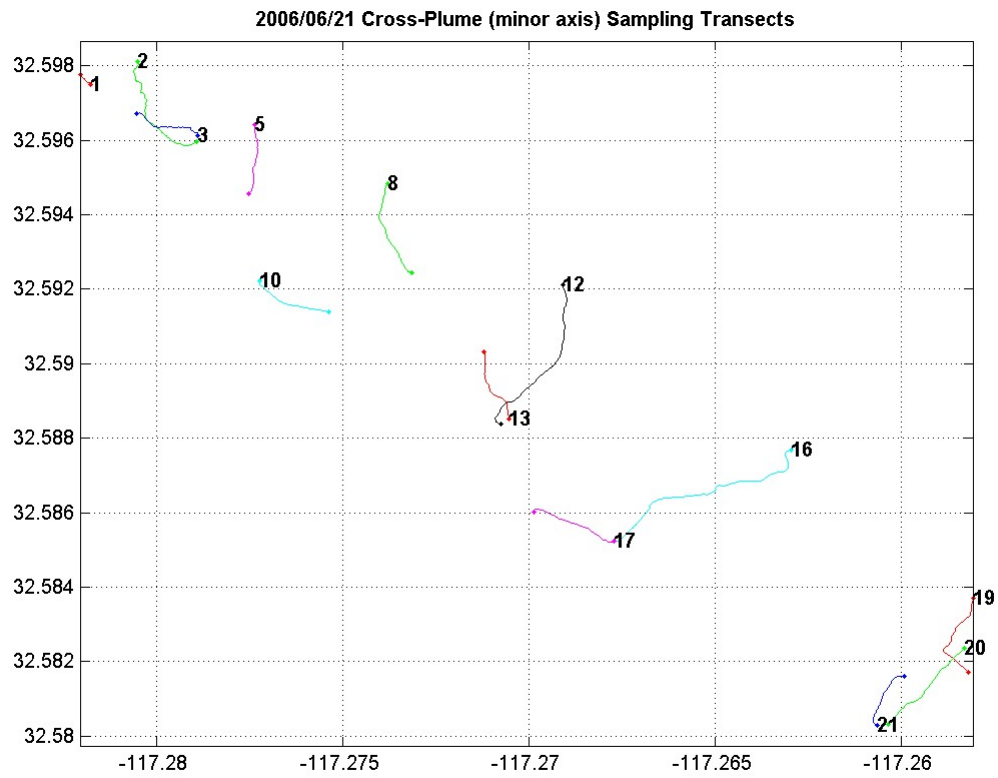


Figure G.1-4. Fluorometer cross-plume sampling transects for 21 June 2006.

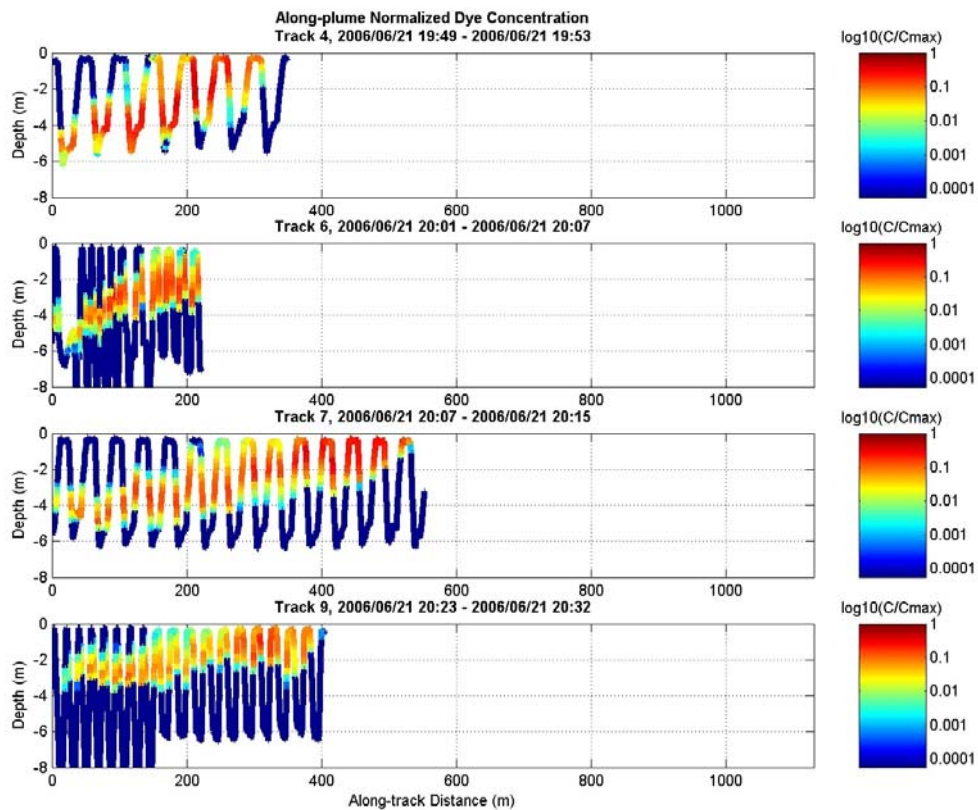


Figure G.1-5. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each along-plume sampling transect on 21 June 2006. Along-track distance is approximated. (a)

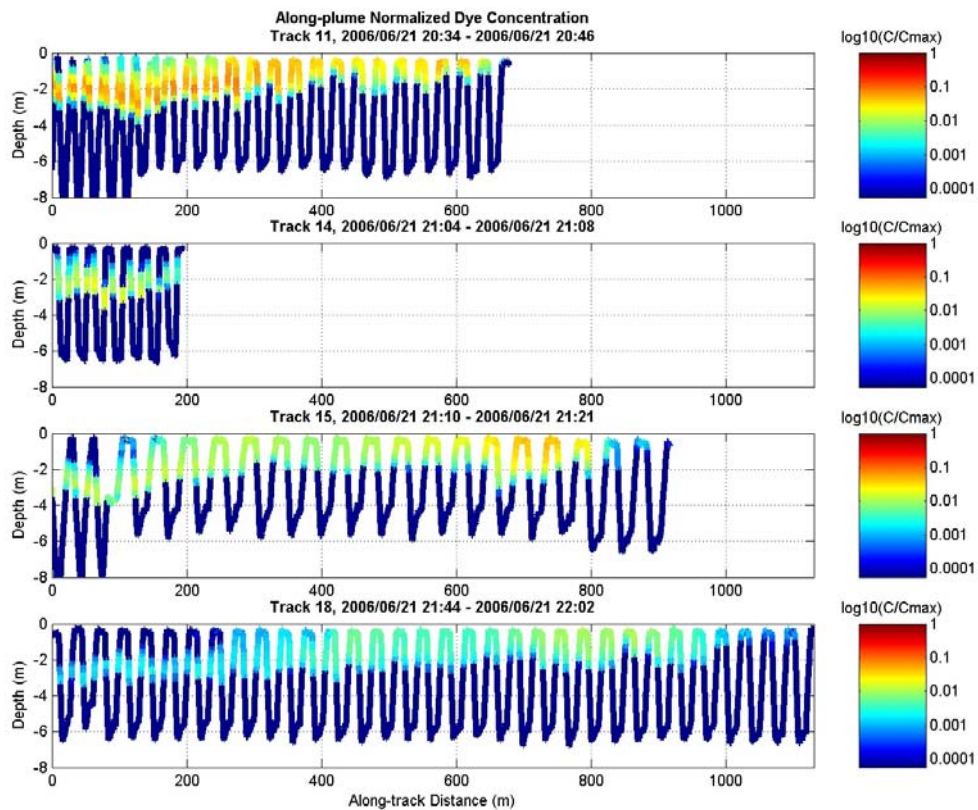


Figure G.1-5. Normalized dye concentration, $\log_{10}(C/C_{\max})$, for each along-plume sampling transect on 21 June 2006. Along-track distance is approximated. (b)

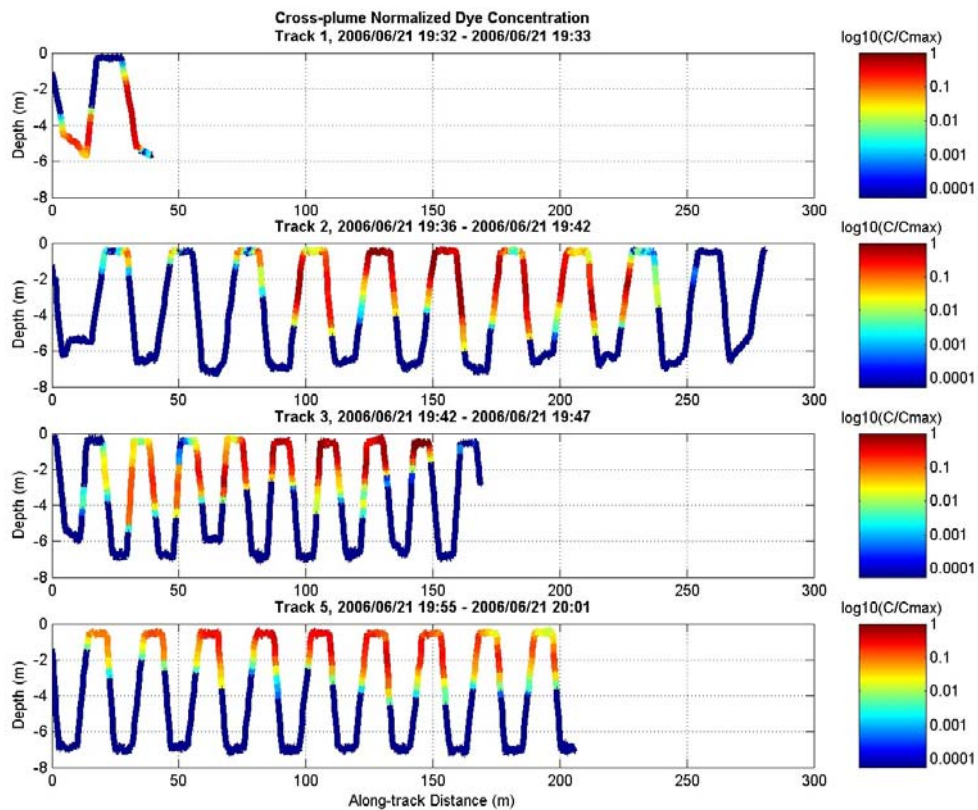


Figure G.1-6. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each cross plume sampling transect on 21 June 2006. Along-track distance is approximated. (a)

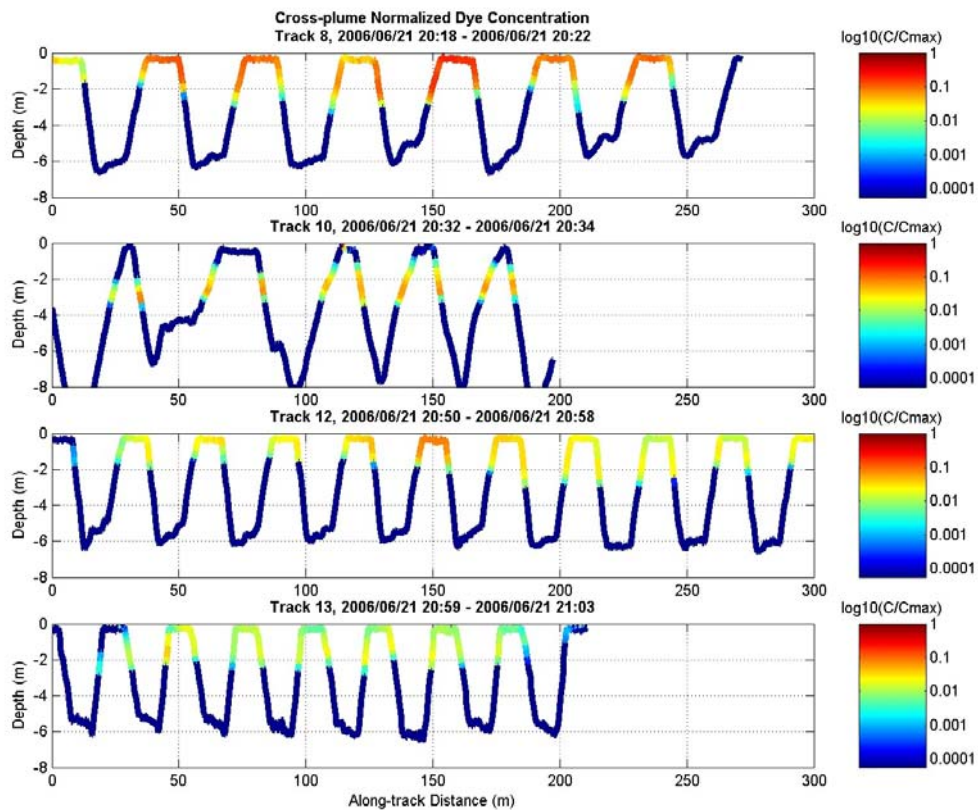


Figure G.1-6. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each cross plume sampling transect on 21 June 2006. Along-track distance is approximated. (b)

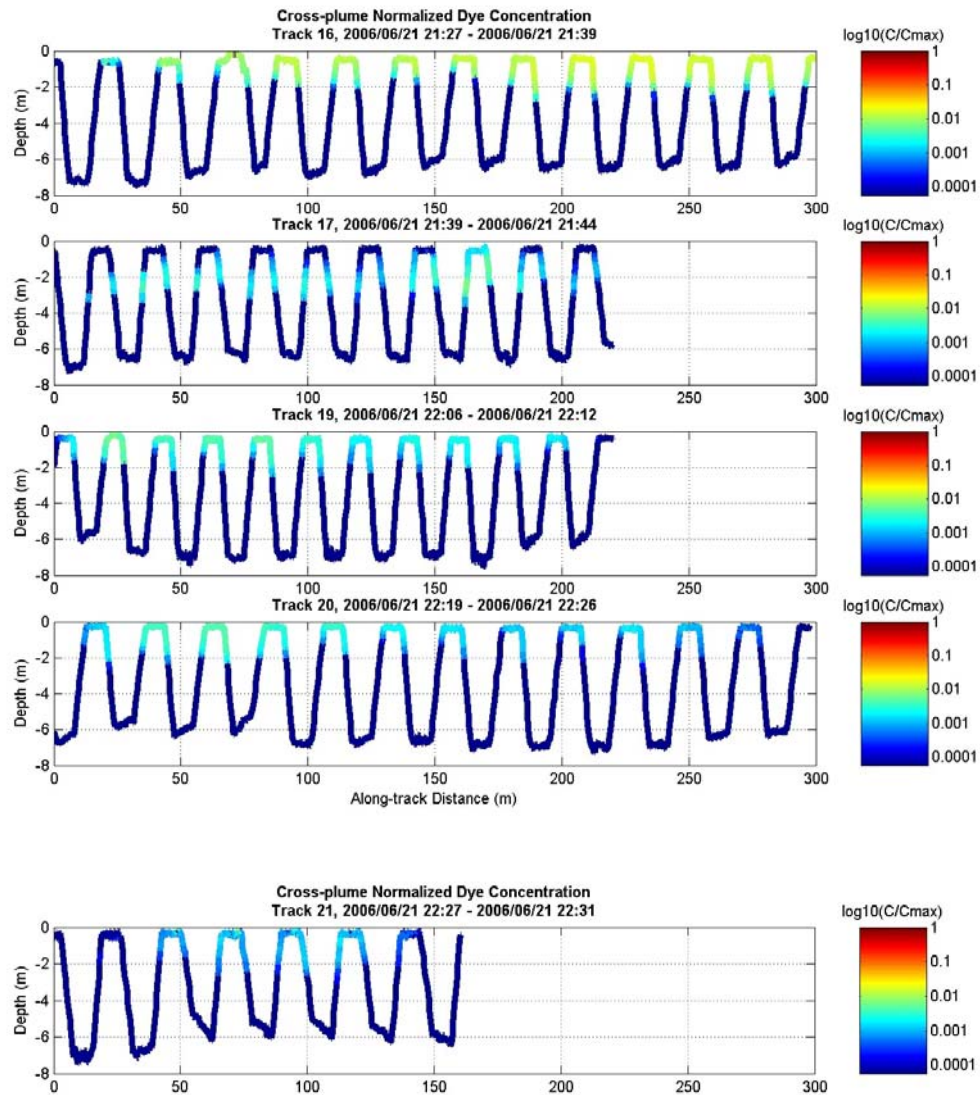


Figure G.1-6. Normalized dye concentration, $\log_{10}(C/C_{\max})$, for each cross plume sampling transect on 21 June 2006. Along-track distance is approximated. (c)

G.2 Results of June 22, 2006 Experiment

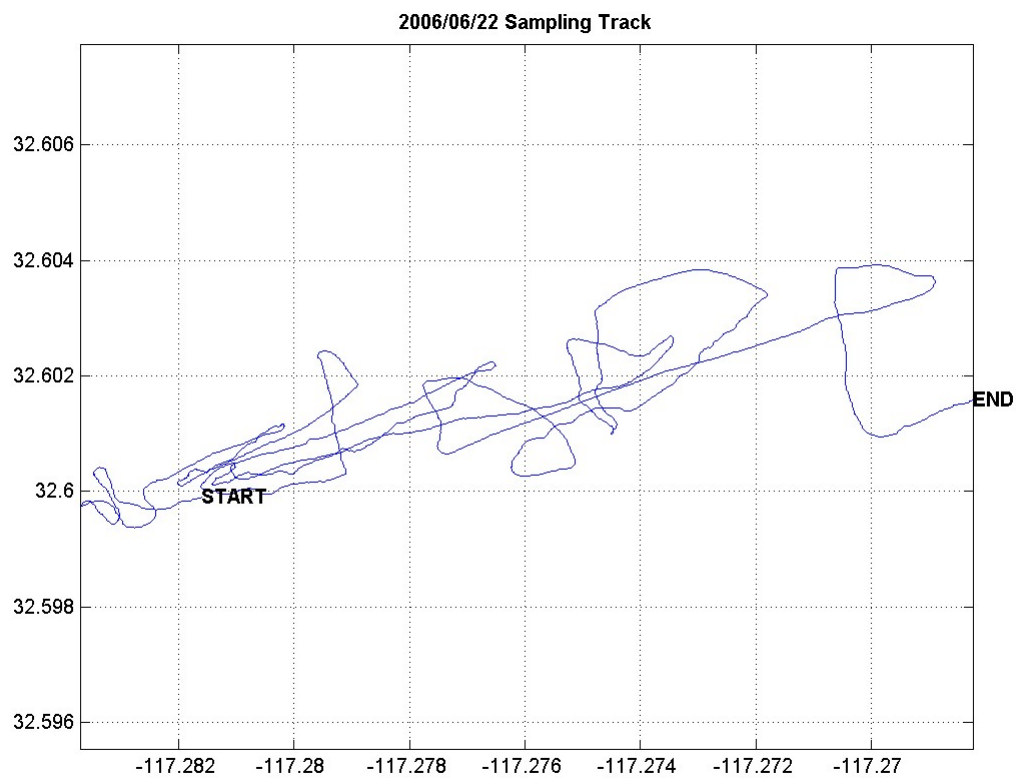


Figure G.2-1. Underway fluorometer sampling track for 22 June 2006 from GPS waypoints.

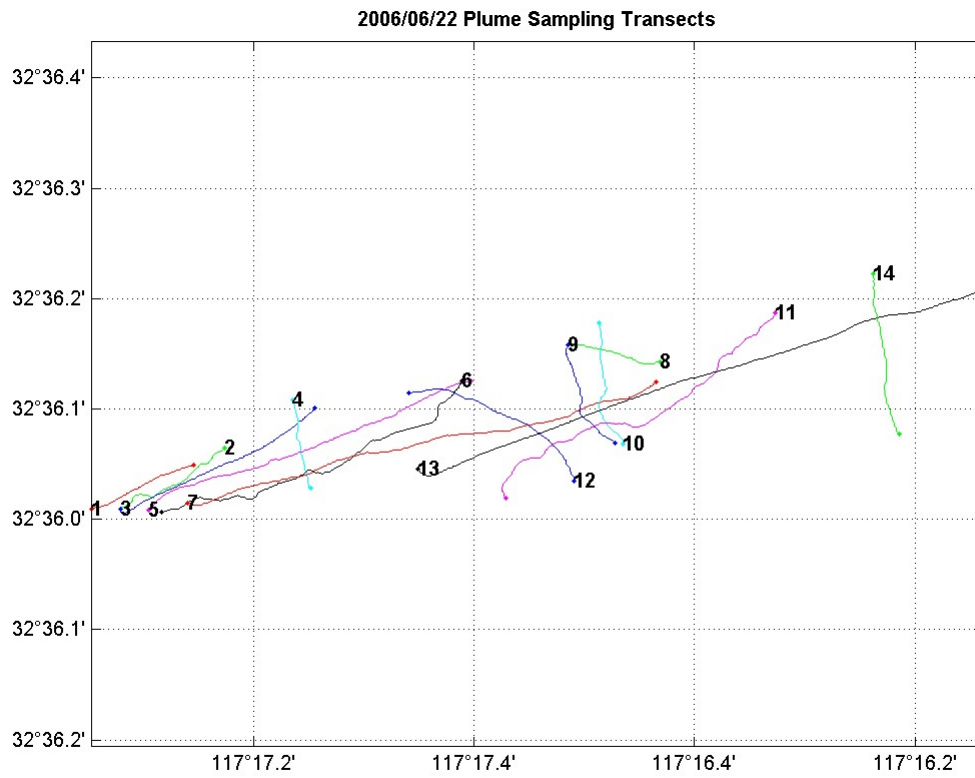


Figure G.2-2. Fluorometer sampling transect designations for 22 June 2006.

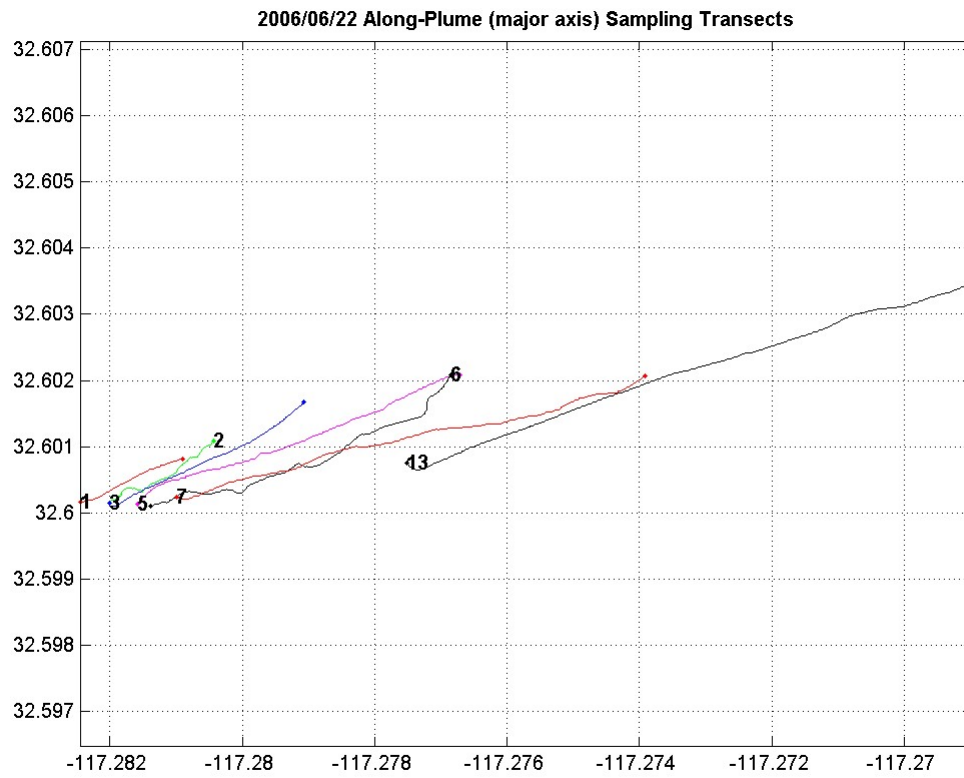


Figure G.2-3. Fluorometer along-plume sampling transects for 22 June 2006.

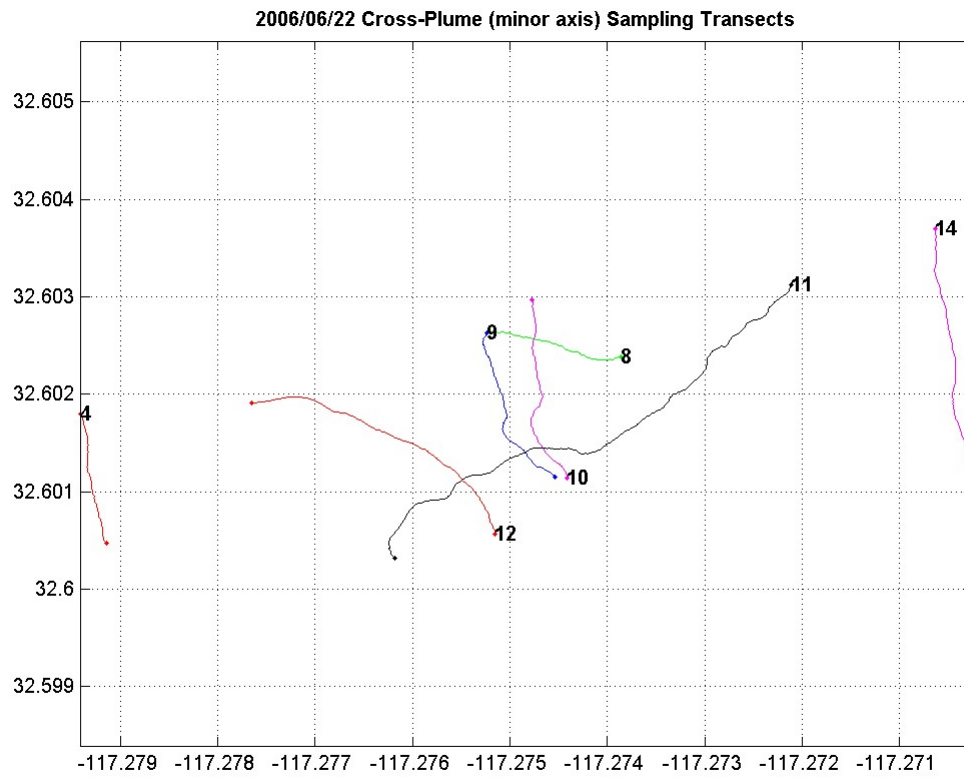


Figure G.2-4. Fluorometer cross-plume sampling transects for 22 June 2006.

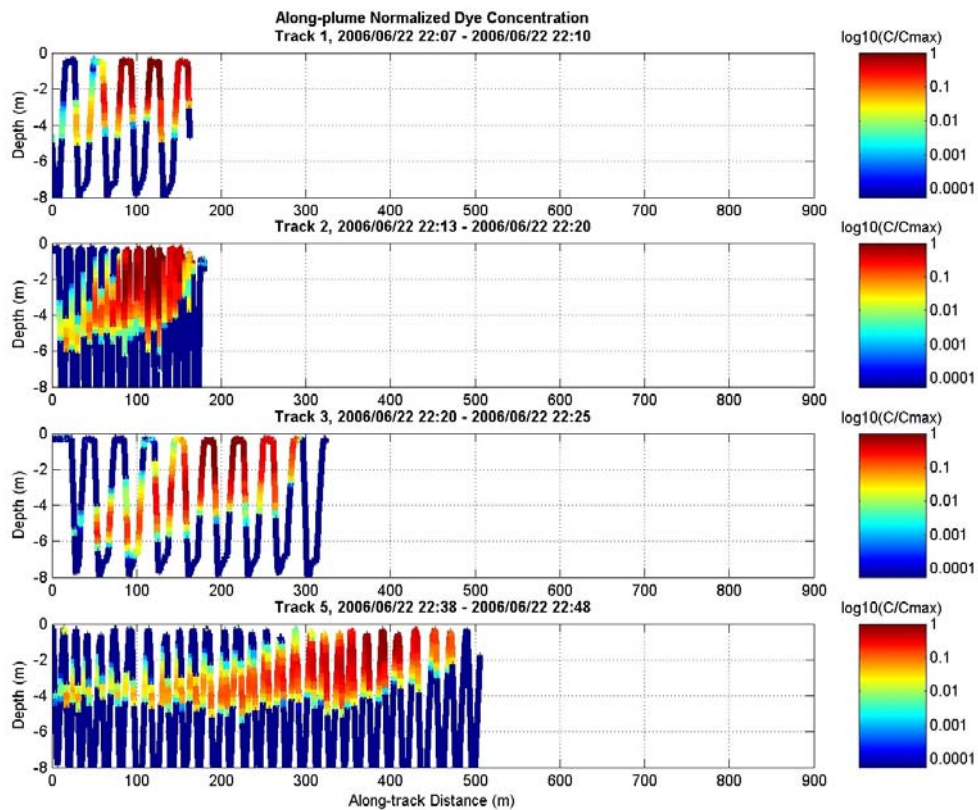


Figure G.2-5. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each along-plume sampling transect on 22 June 2006. Along-track distance is approximated. (a)

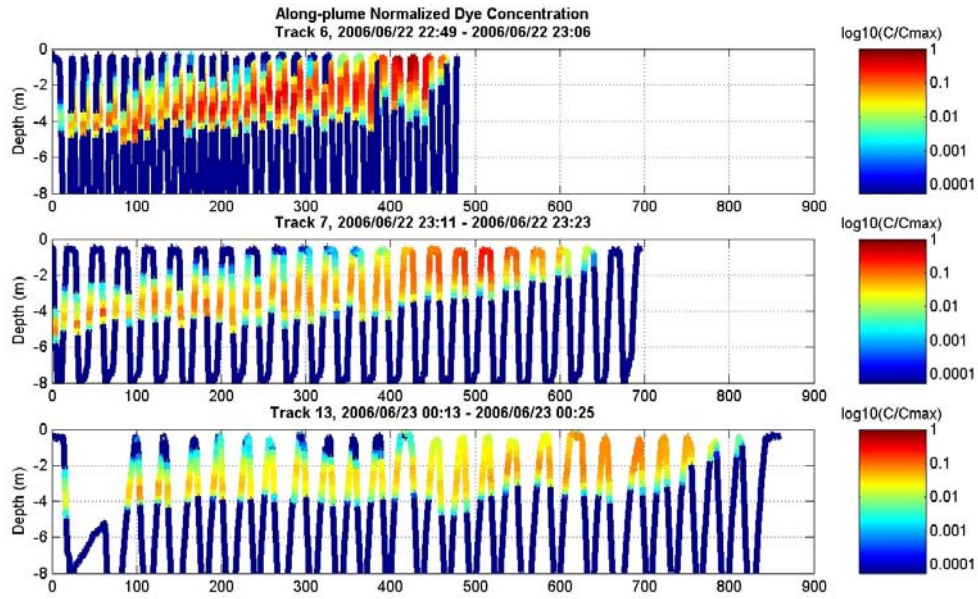


Figure G.2-5. Normalized dye concentration, $\log_{10}(C/C_{\max})$, for each along-plume sampling transect on 22 June 2006. Along-track distance is approximated. (b)

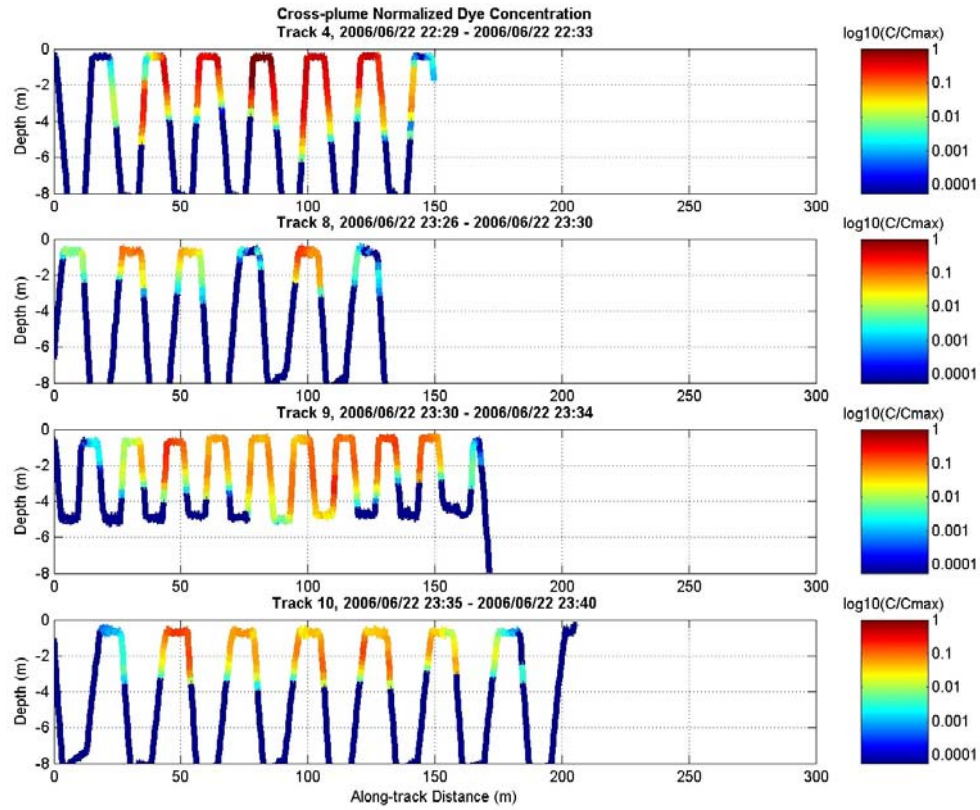


Figure G.2-6. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each cross plume sampling transect on 22 June 2006. Along-track distance is approximated. (a)

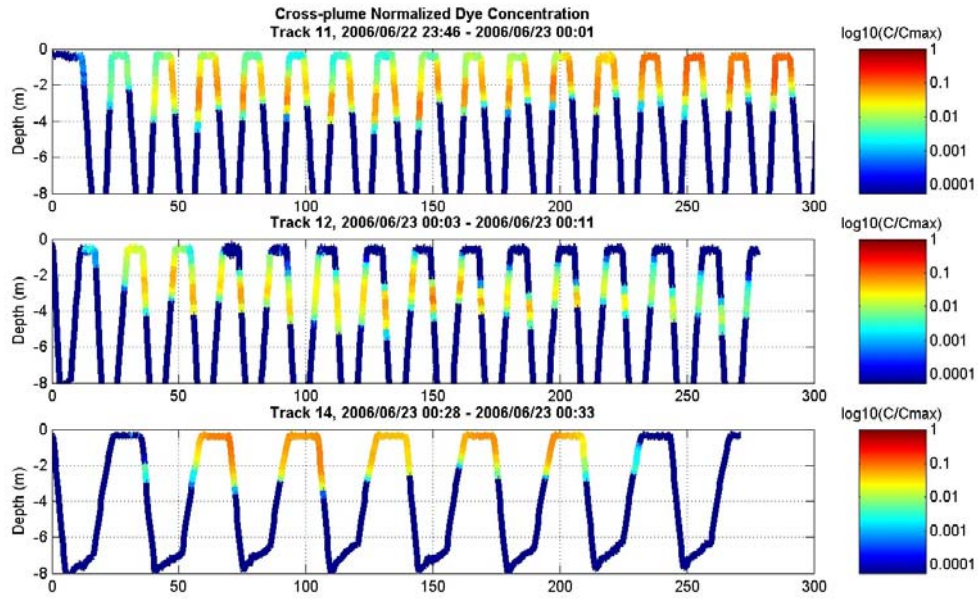


Figure G.2-6. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each cross plume sampling transect on 22 June 2006. Along-track distance is approximated. (b)

G.3 Results of November 1, 2006 Experiment

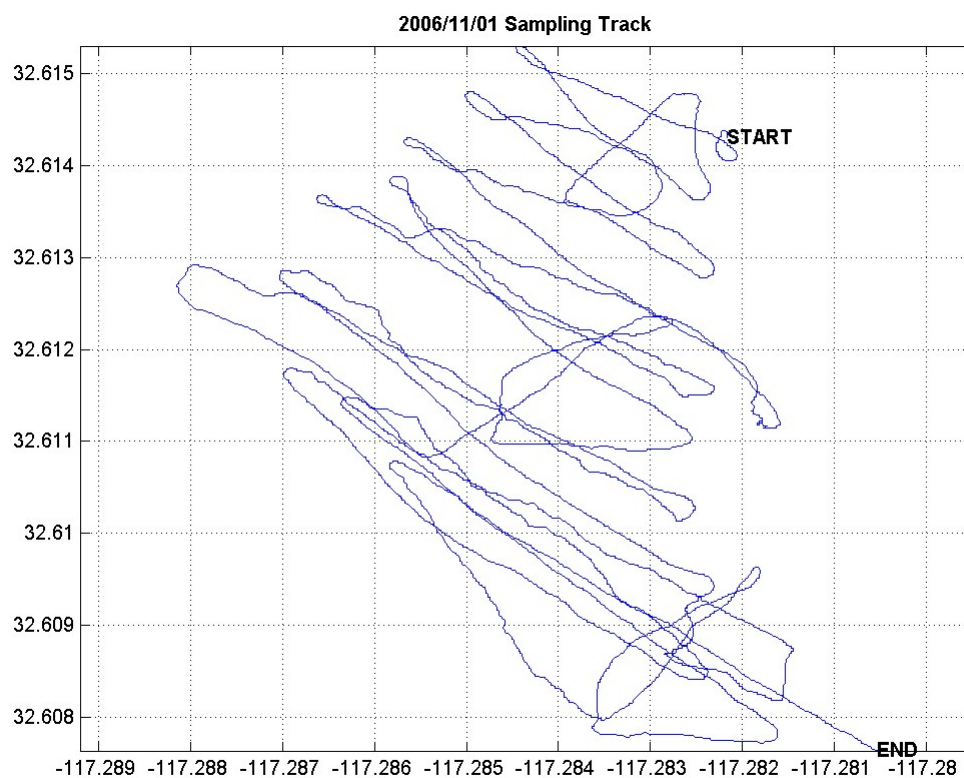


Figure G.3-1. Underway fluorometer sampling track for 1 November 2006 from GPS waypoints.

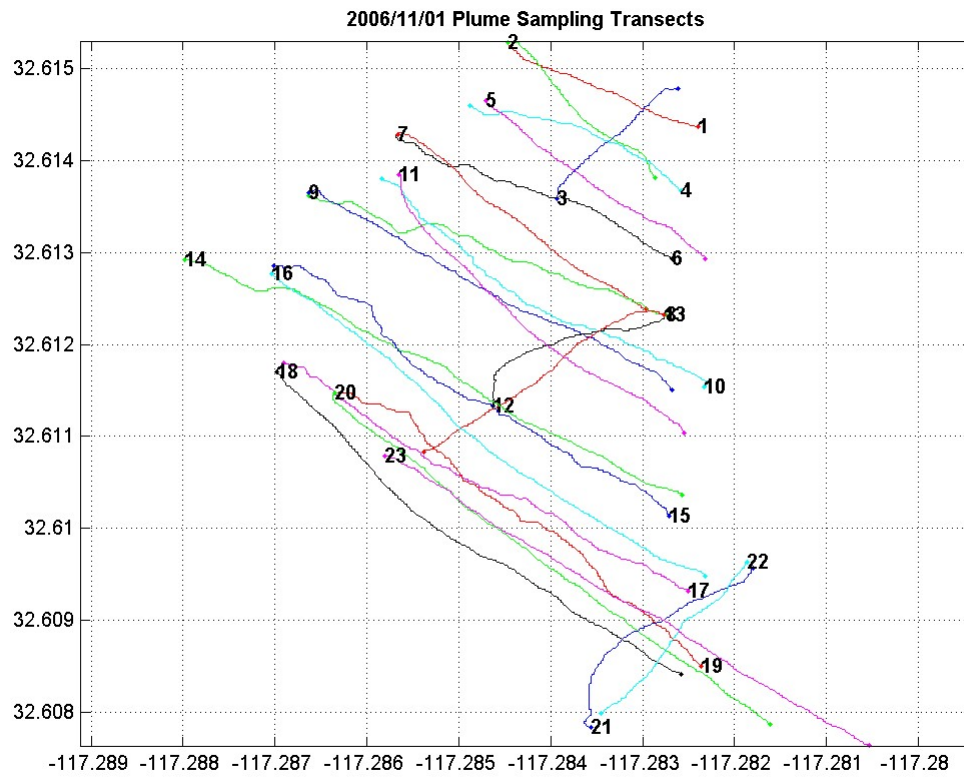


Figure G.3-2. Fluorometer sampling transect designations for 1 November 2006.

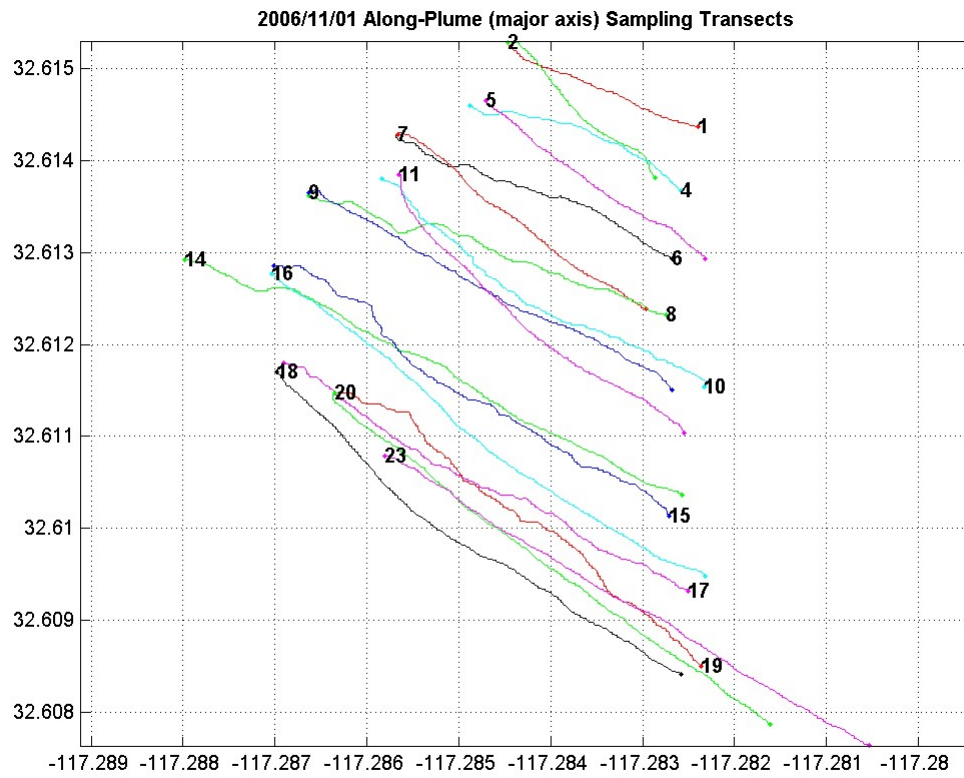


Figure G.3-3. Fluorometer along-plume sampling transects for 1 November 2006.

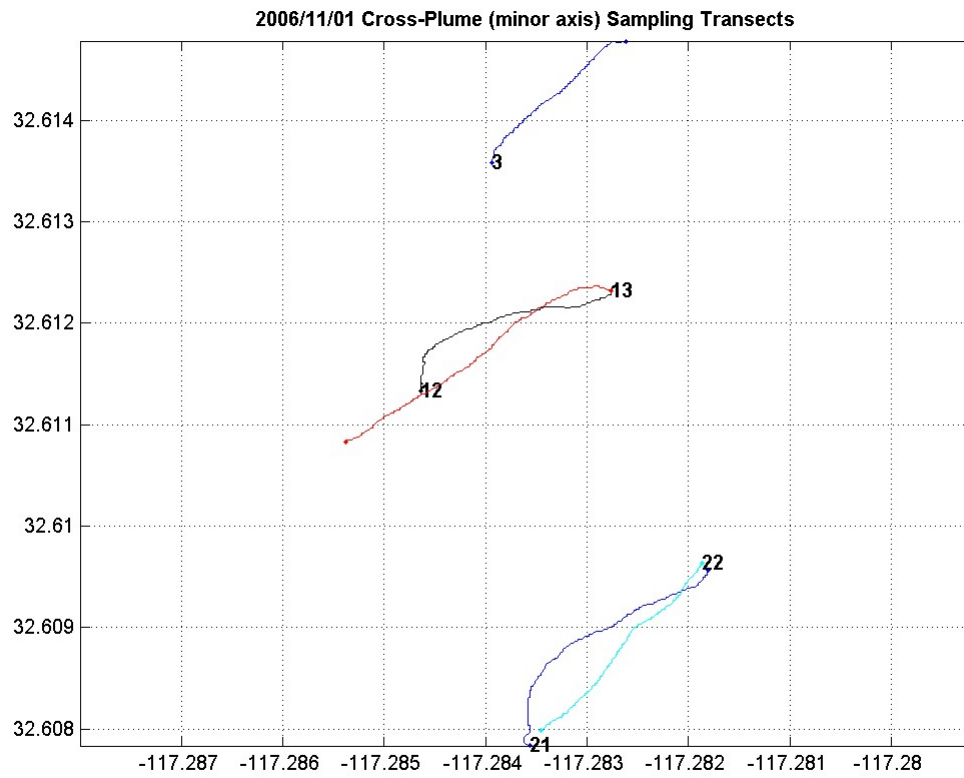


Figure G.3-4. Fluorometer cross-plume sampling transects for 1 November 2006.

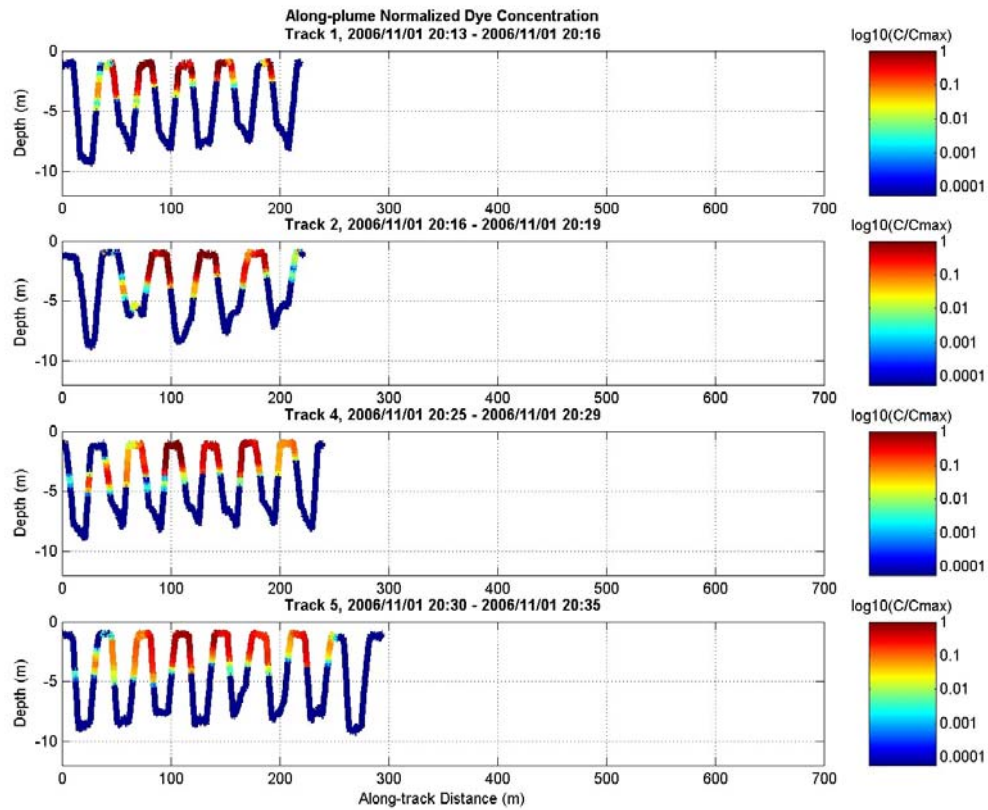


Figure G.3-5. Normalized dye concentration, $\log_{10}(C/C_{\max})$, for each along-plume sampling transect on 1 November 2006. Along-track distance is approximated. (a)

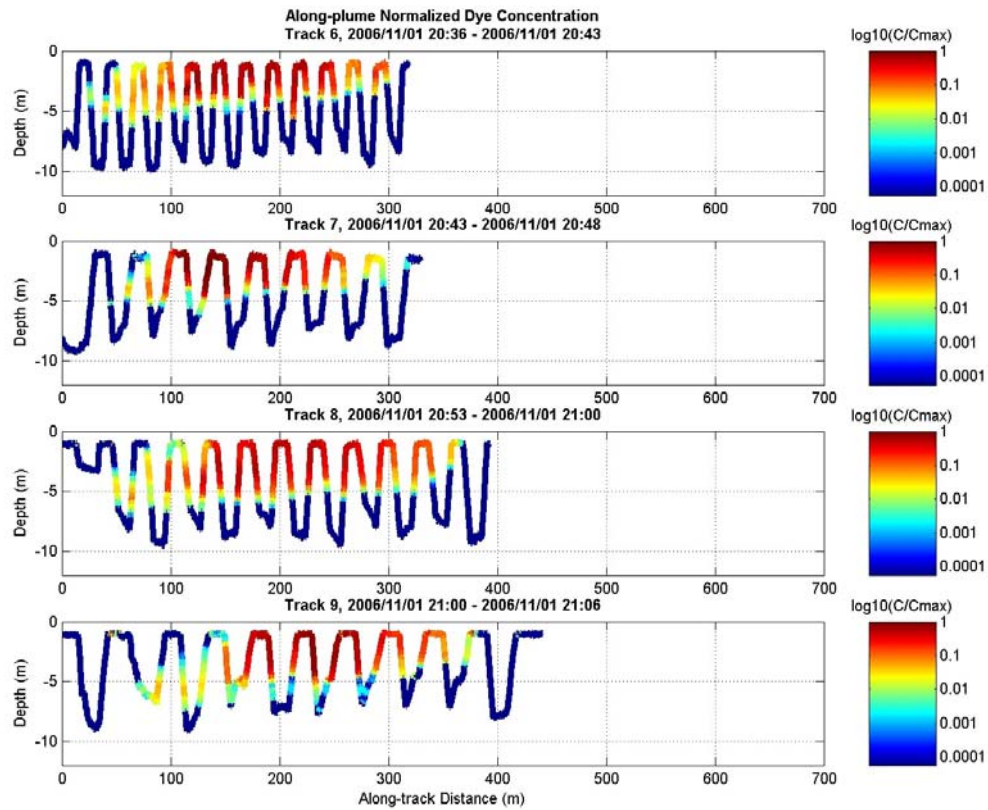


Figure G.3-5. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each along-plume sampling transect on 1 November 2006. Along-track distance is approximated. (b)

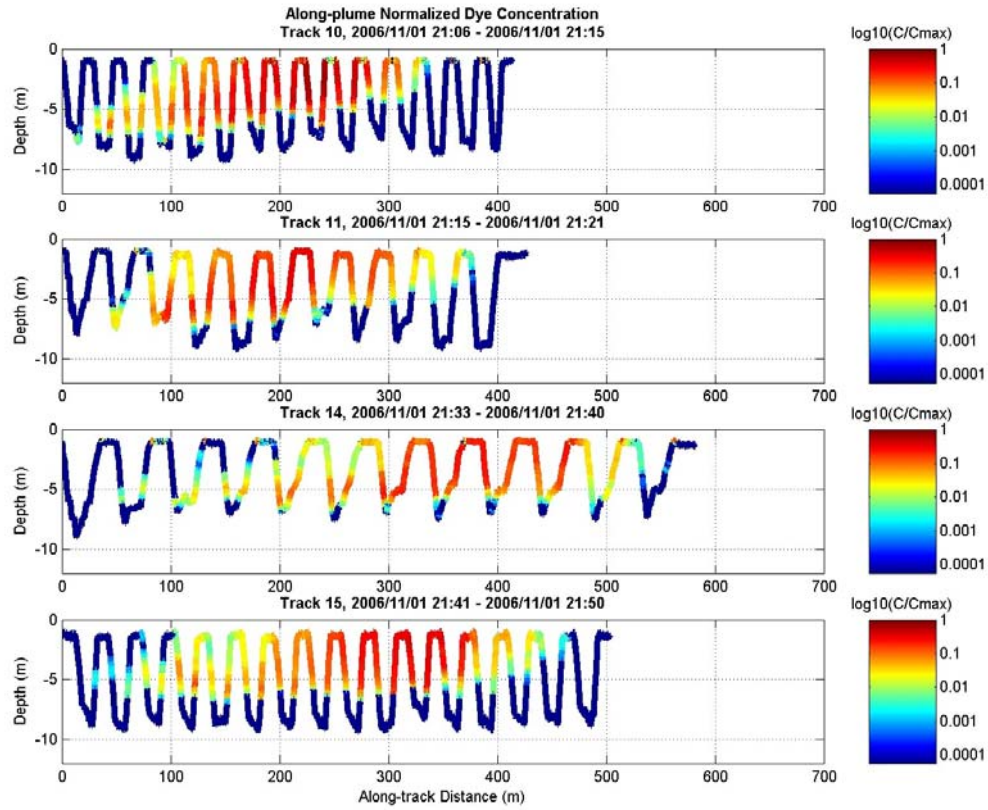


Figure G.3-5. Normalized dye concentration, $\log_{10}(C/C_{\max})$, for each along-plume sampling transect on 1 November 2006. Along-track distance is approximated. (c)

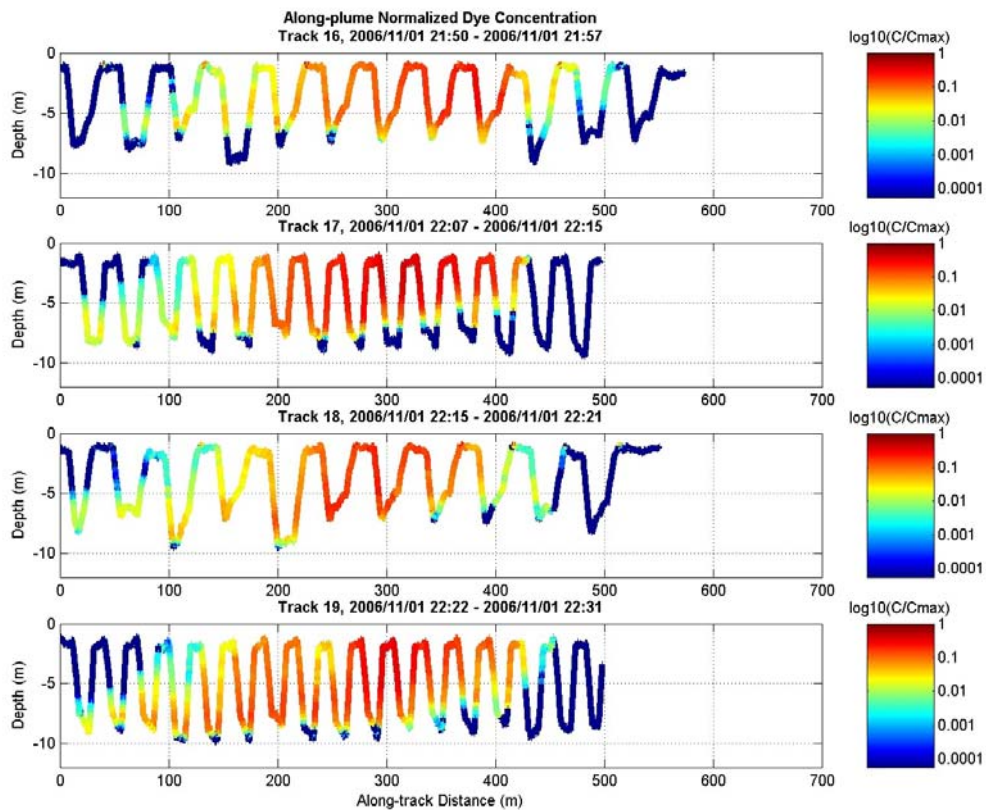


Figure G.3-5. Normalized dye concentration, $\log_{10}(C/C_{\max})$, for each along-plume sampling transect on 1 November 2006. Along-track distance is approximated. (d)

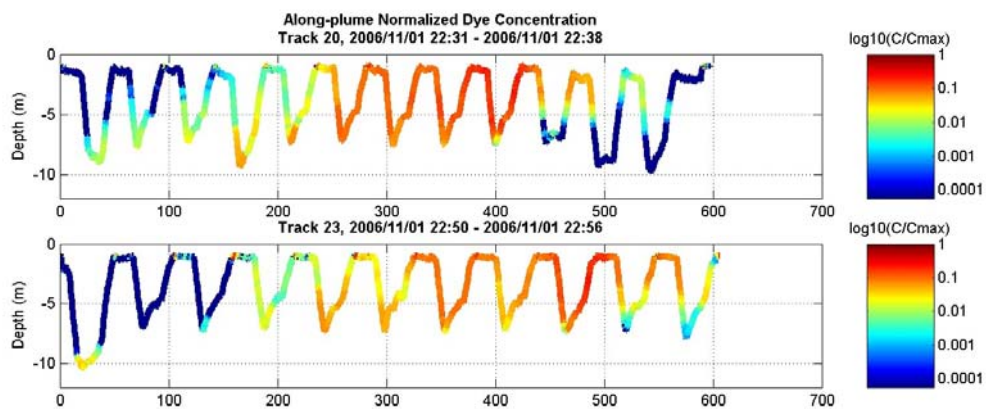


Figure G.3-5. Normalized dye concentration, $\log_{10}(C/C_{\max})$, for each along-plume sampling transect on 1 November 2006. Along-track distance is approximated. (e)

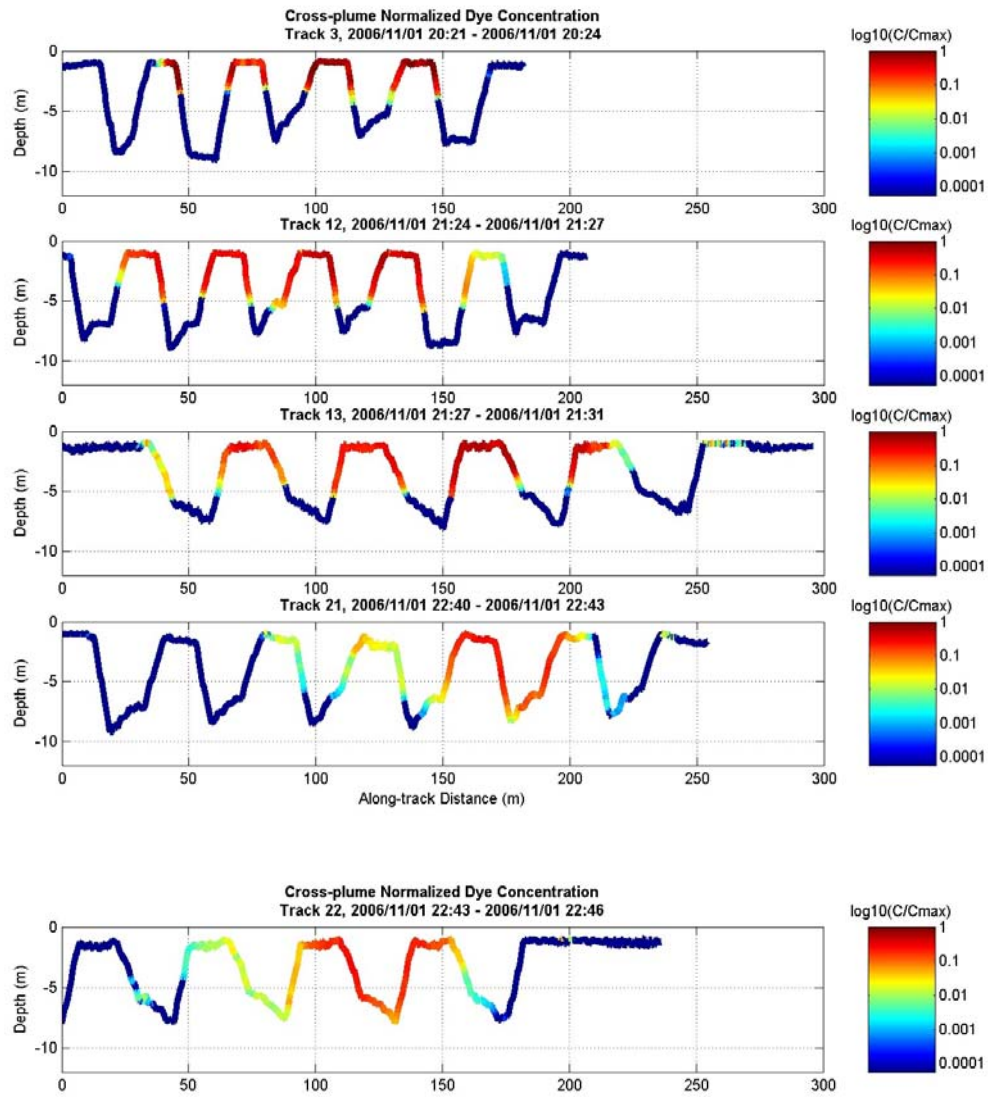


Figure G.3-6. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each cross plume sampling transect on 1 November 2006. Along-track distance is approximated.

G.4 Results of November 2, 2006 Experiment

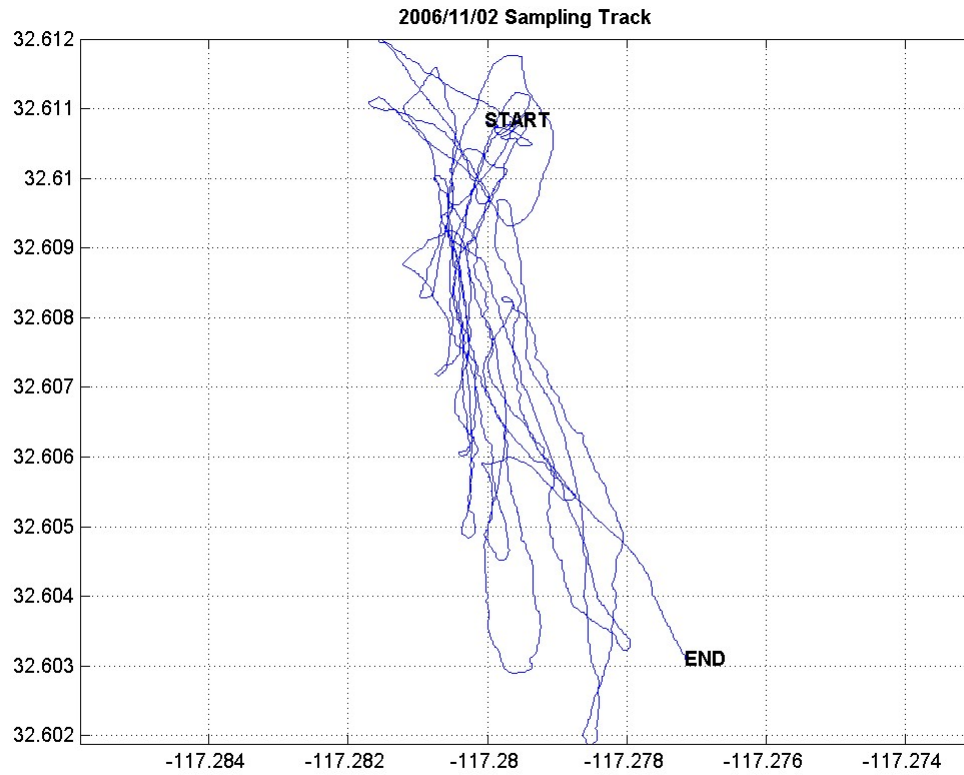


Figure G.4-1. Underway fluorometer sampling track for 2 November 2006 from GPS waypoints.

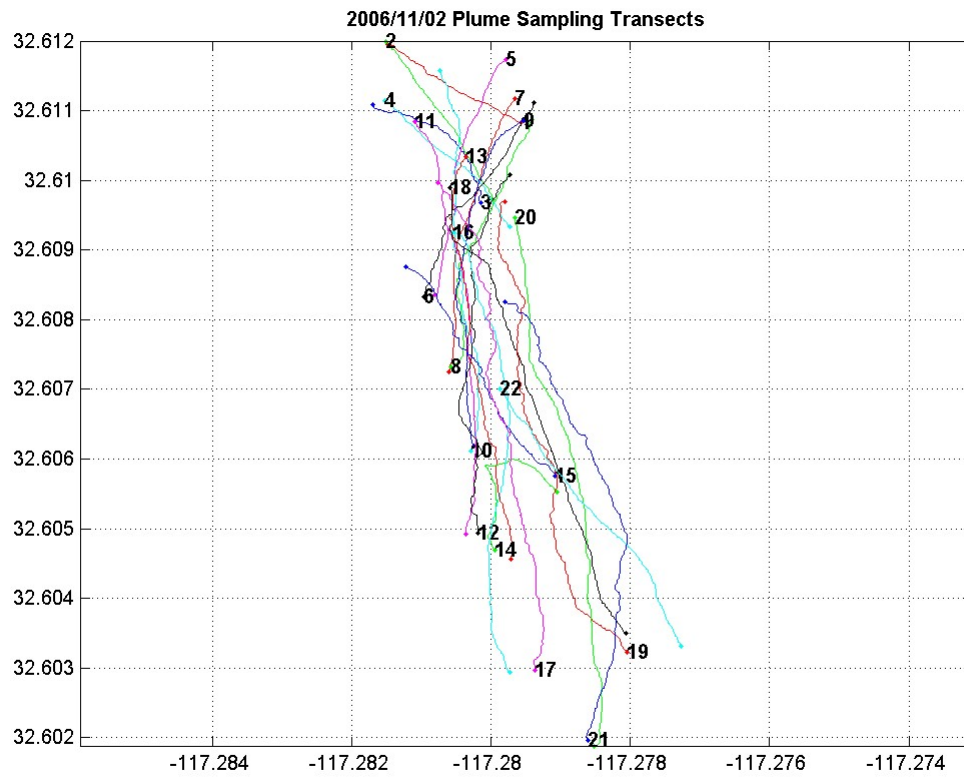


Figure G.4-2. Fluorometer sampling transect designations for 2 November 2006.

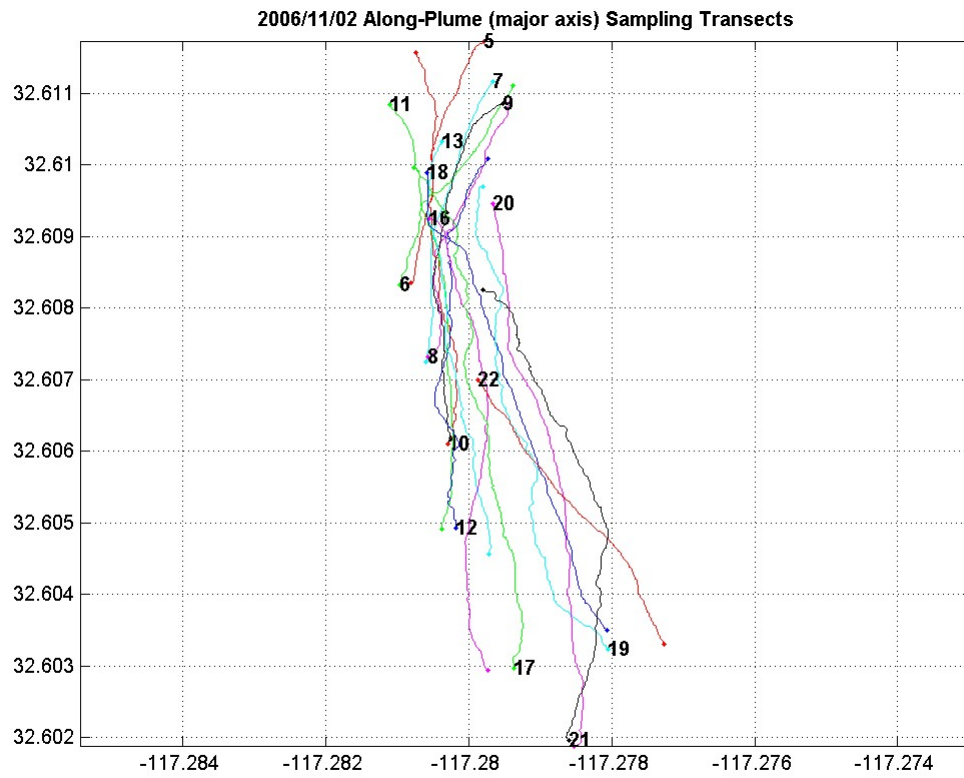


Figure G.4-3. Fluorometer along-plume sampling transects for 2 November 2006.

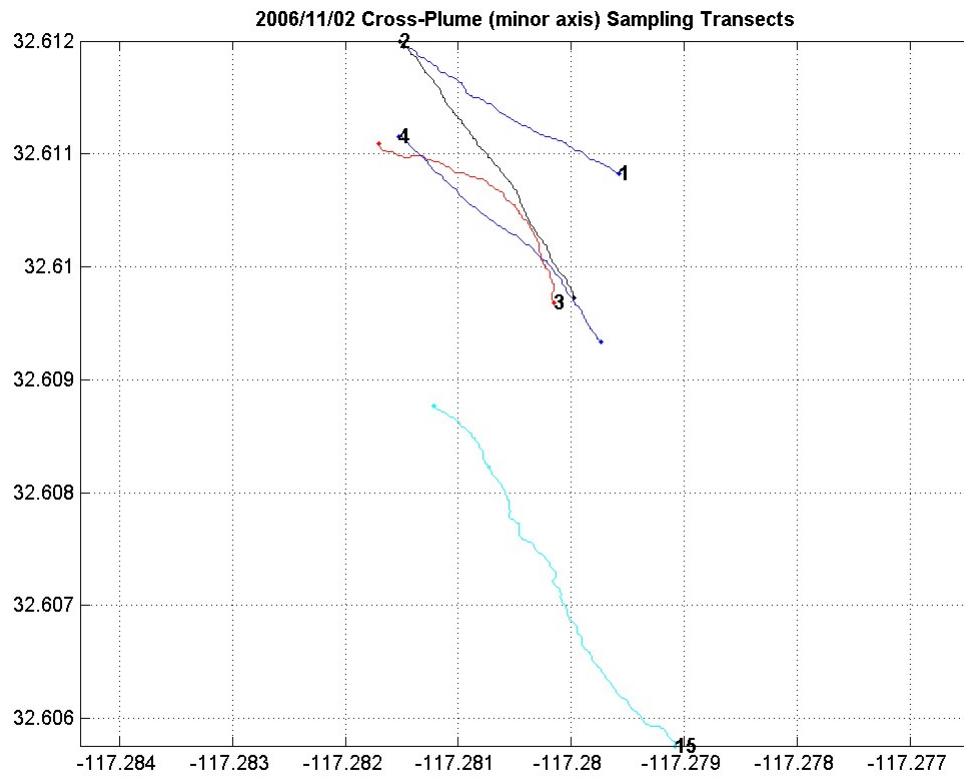


Figure G.4-4. Fluorometer cross-plume sampling transects for 2 November 2006.

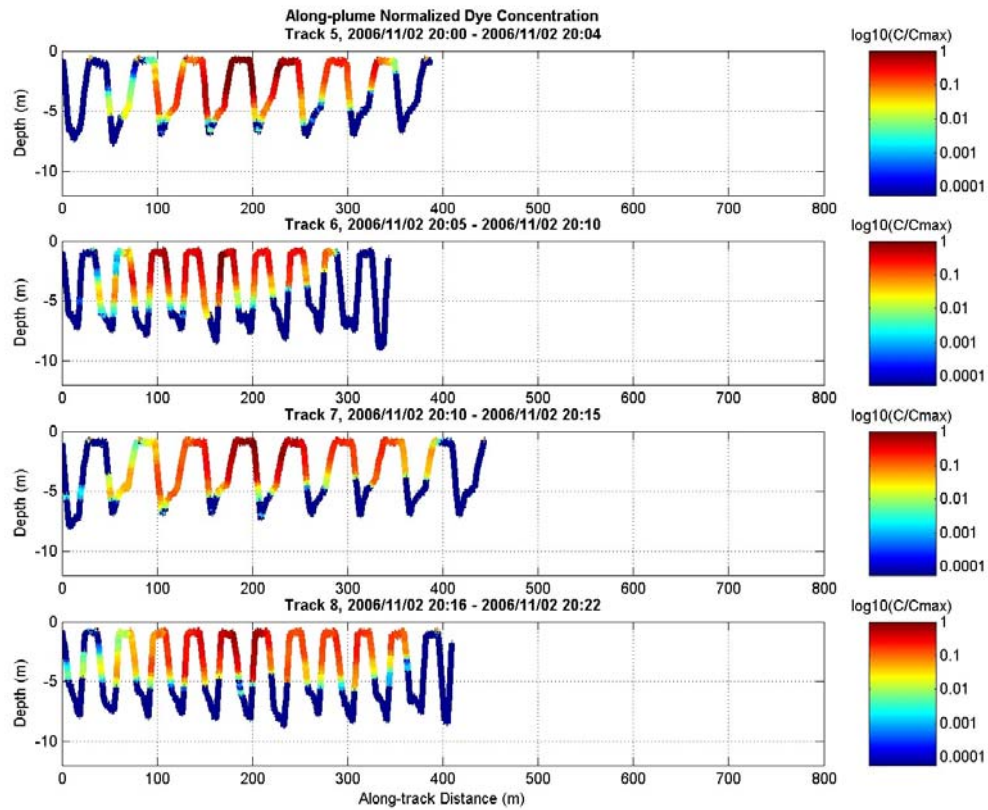


Figure G.4-5. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each along-plume sampling transect on 2 November 2006. Along-track distance is approximated. (a)

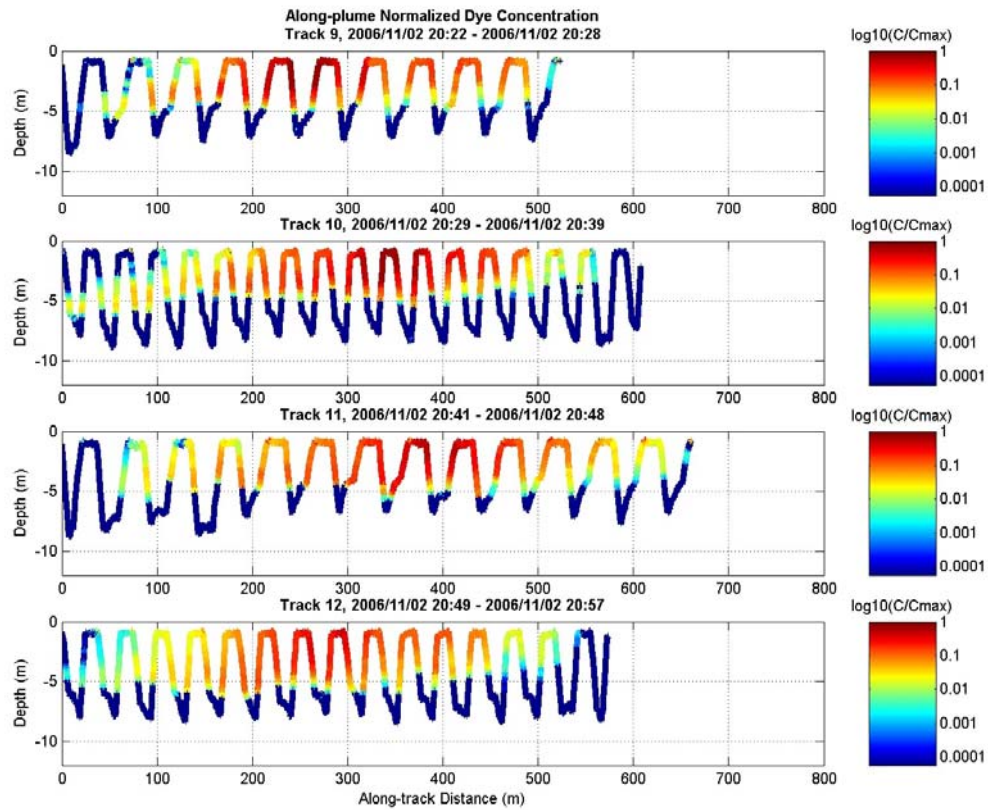


Figure G.4-5. Normalized dye concentration, $\log_{10}(C/C_{\max})$, for each along-plume sampling transect on 2 November 2006. Along-track distance is approximated. (b)

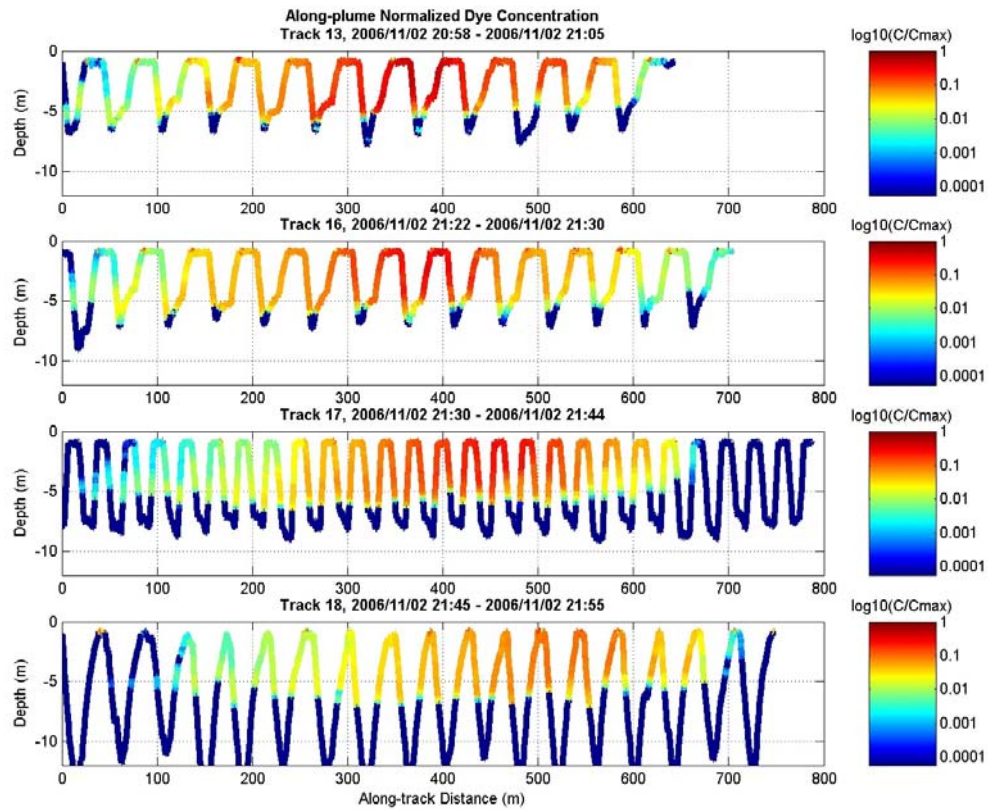


Figure G.4-5. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each along-plume sampling transect on 2 November 2006. Along-track distance is approximated. (c)

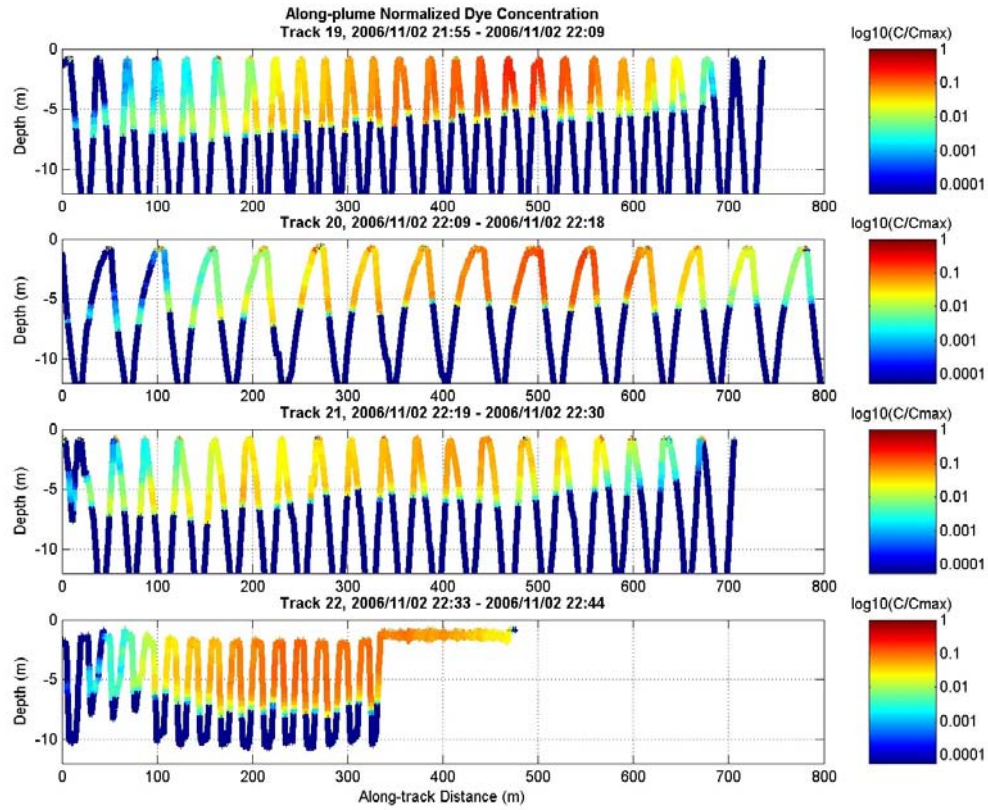


Figure G.4-5. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each along-plume sampling transect on 2 November 2006. Along-track distance is approximated. (d)

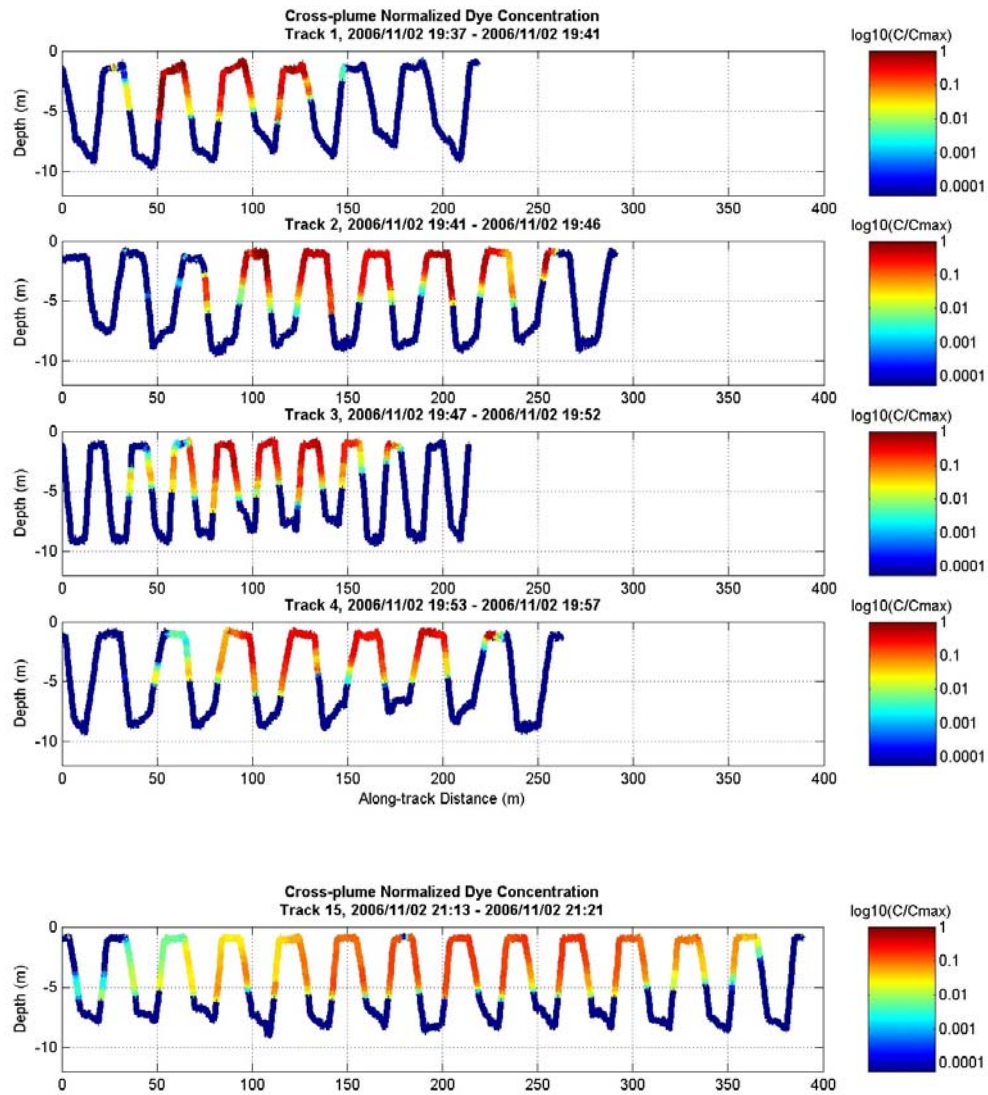


Figure G.4-6. Normalized dye concentration, $\log_{10}(C/C_{max})$, for each cross plume sampling transect on 2 November 2006. Along-track distance is approximated.

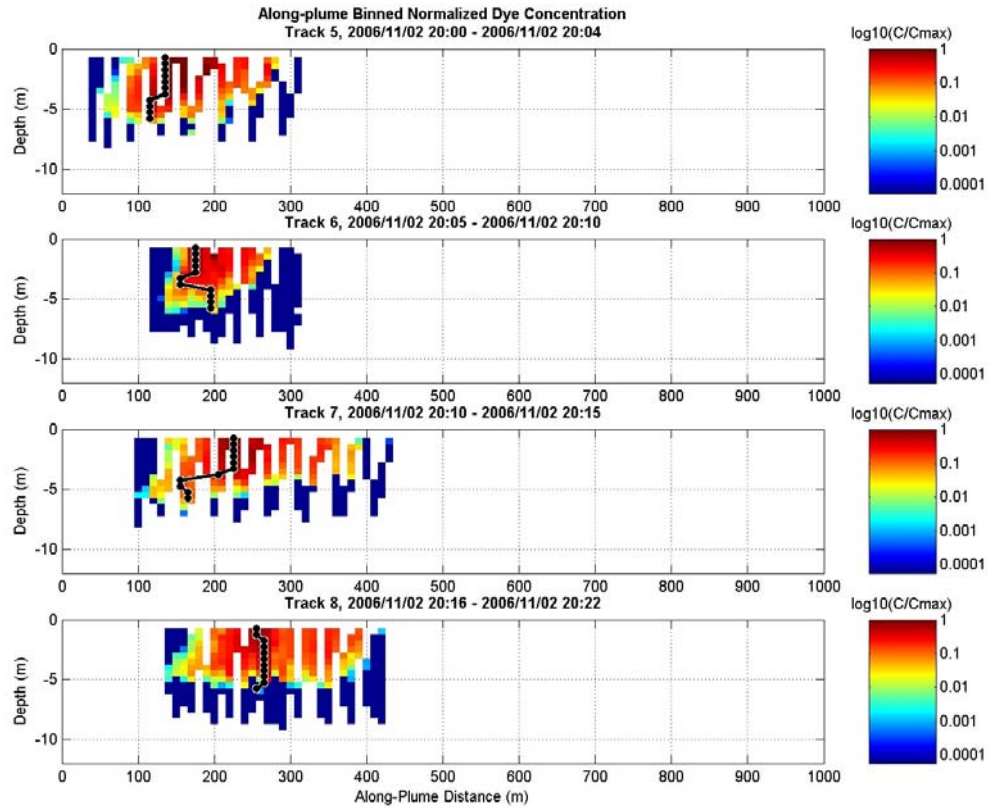


Figure G.4-7. Normalized Dye concentration, $\log_{10}(C/C_{max})$, in the along-plume direction binned vertically (0.5m) and horizontally (10m) for estimation of the along-plume velocity profile and shear. Along plume distance is based on each track's projection onto a best fit line for all along-plume tracks. Profiles of the maximum dye concentration are shown in black. See section 4.6 of the final report for a full discussion of the analysis methods.

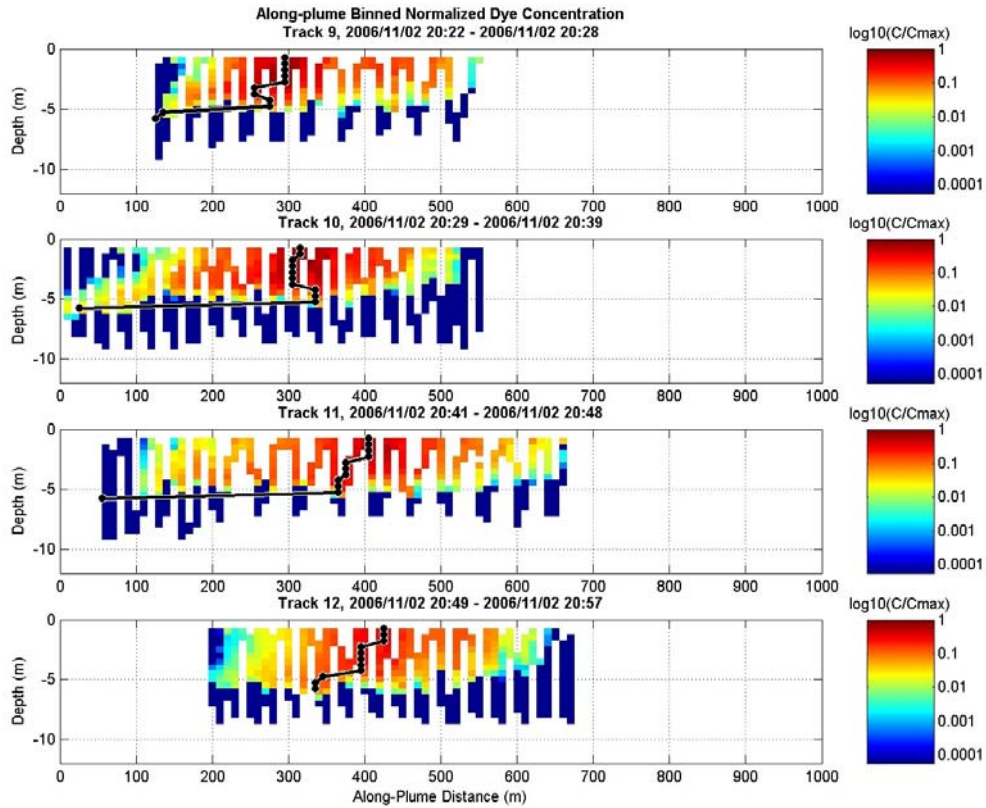


Figure G.4-7. Normalized Dye concentration, $\log_{10}(C/C_{max})$, in the along-plume direction binned vertically (0.5m) and horizontally (10m) for estimation of the along-plume velocity profile and shear. Along plume distance is based on each track's projection onto a best fit line for all along-plume tracks. Profiles of the maximum dye concentration are shown in black. See section 4.6 of the final report for a full discussion of the analysis methods.

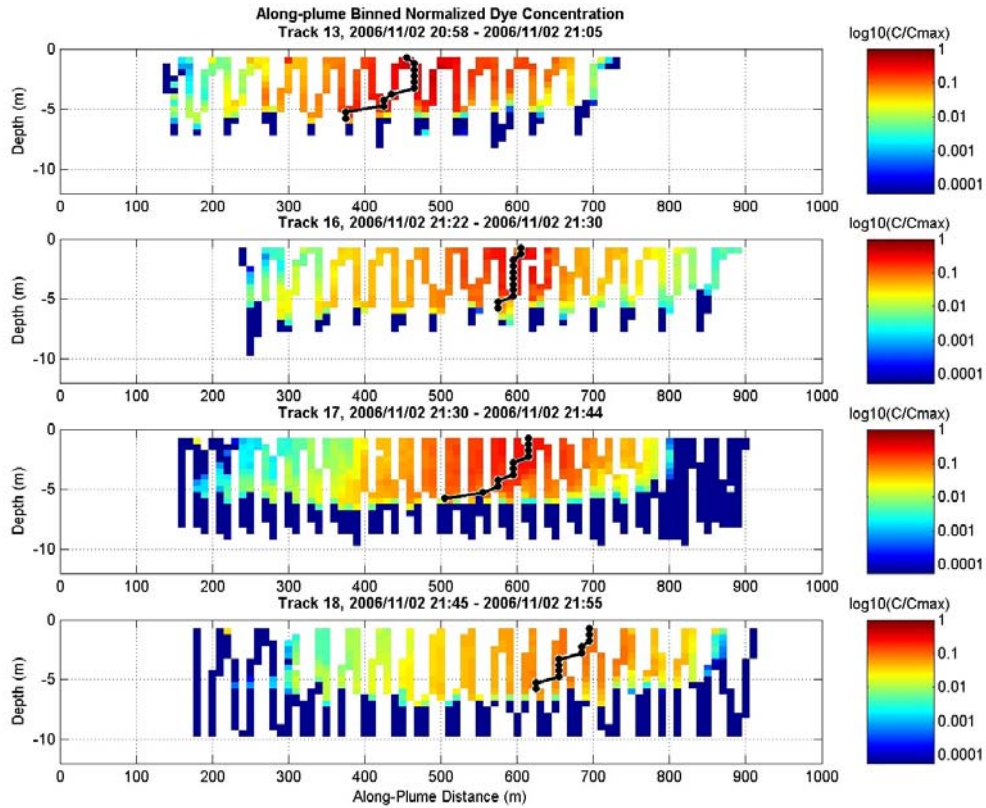


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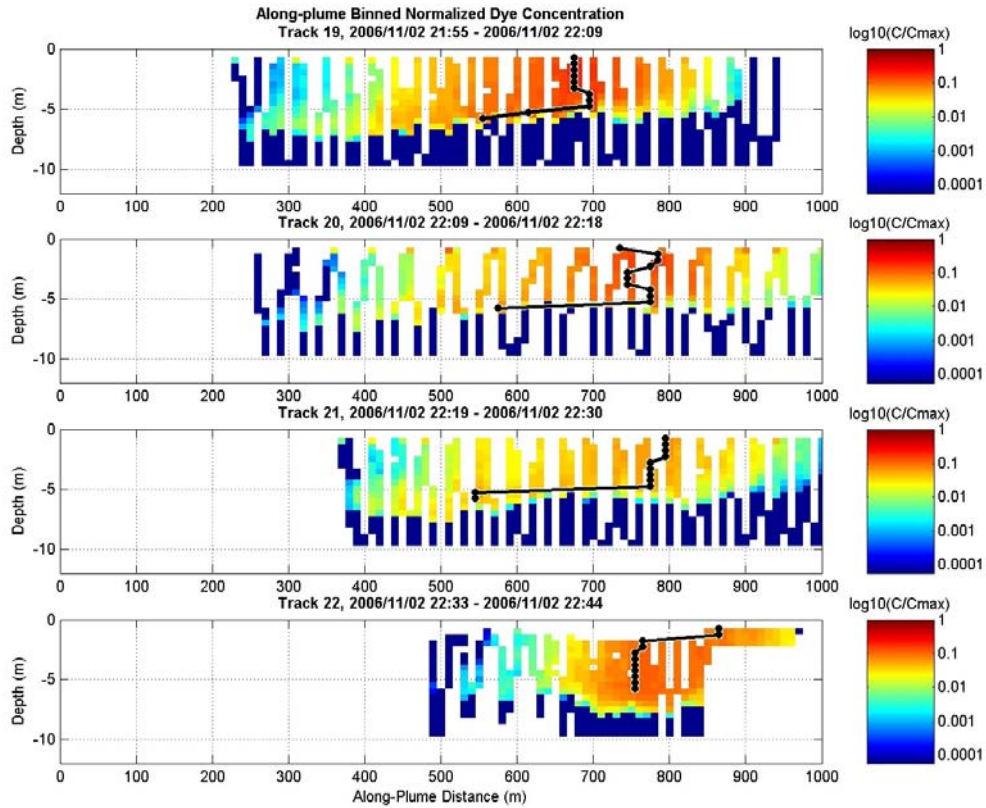


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