Figures

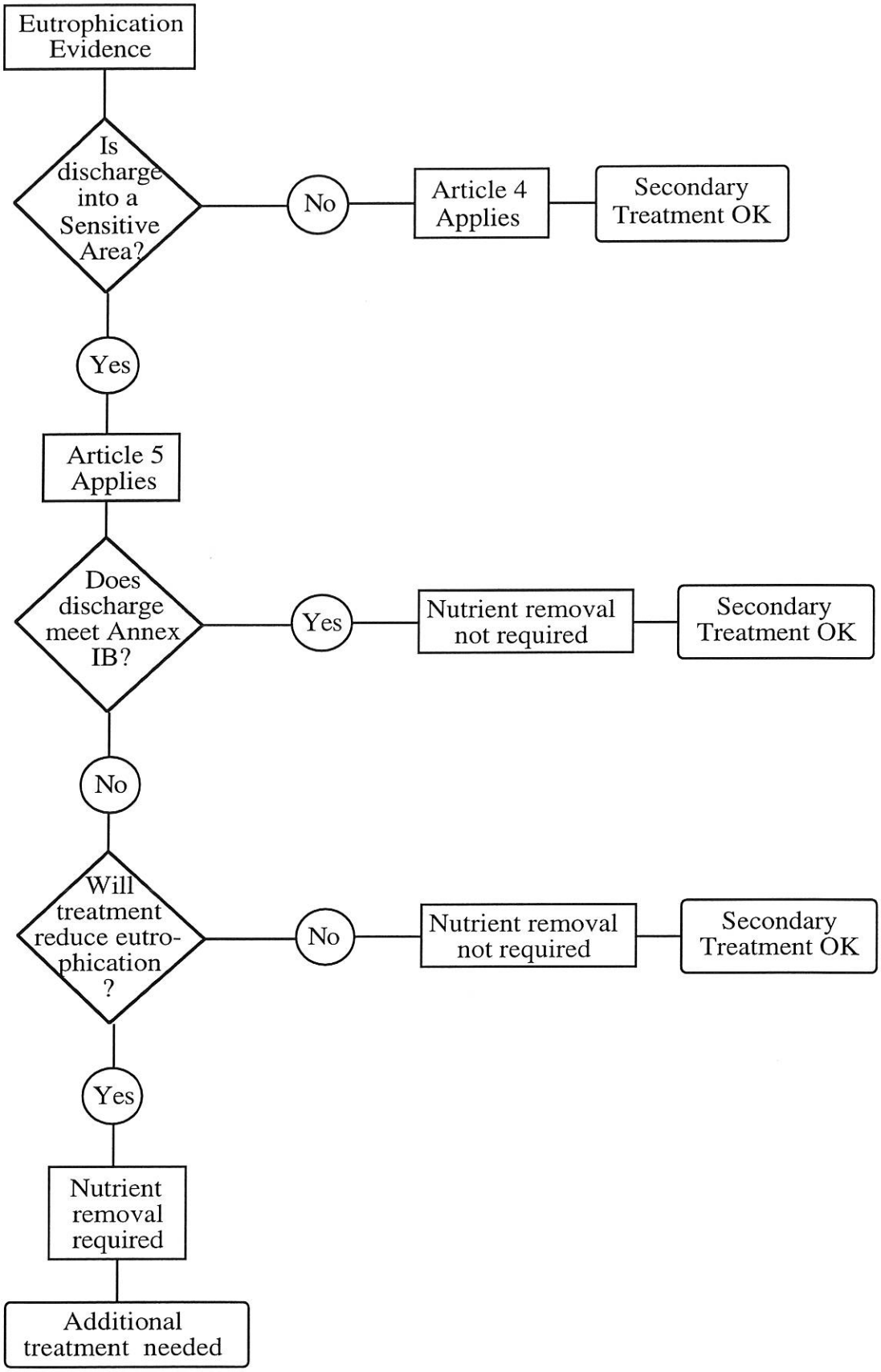

Figure 1.1: Flowchart describing the assessment required to ensure compliance with the Urban Waste Water Treatment Directive when applied to the States of Jersey.

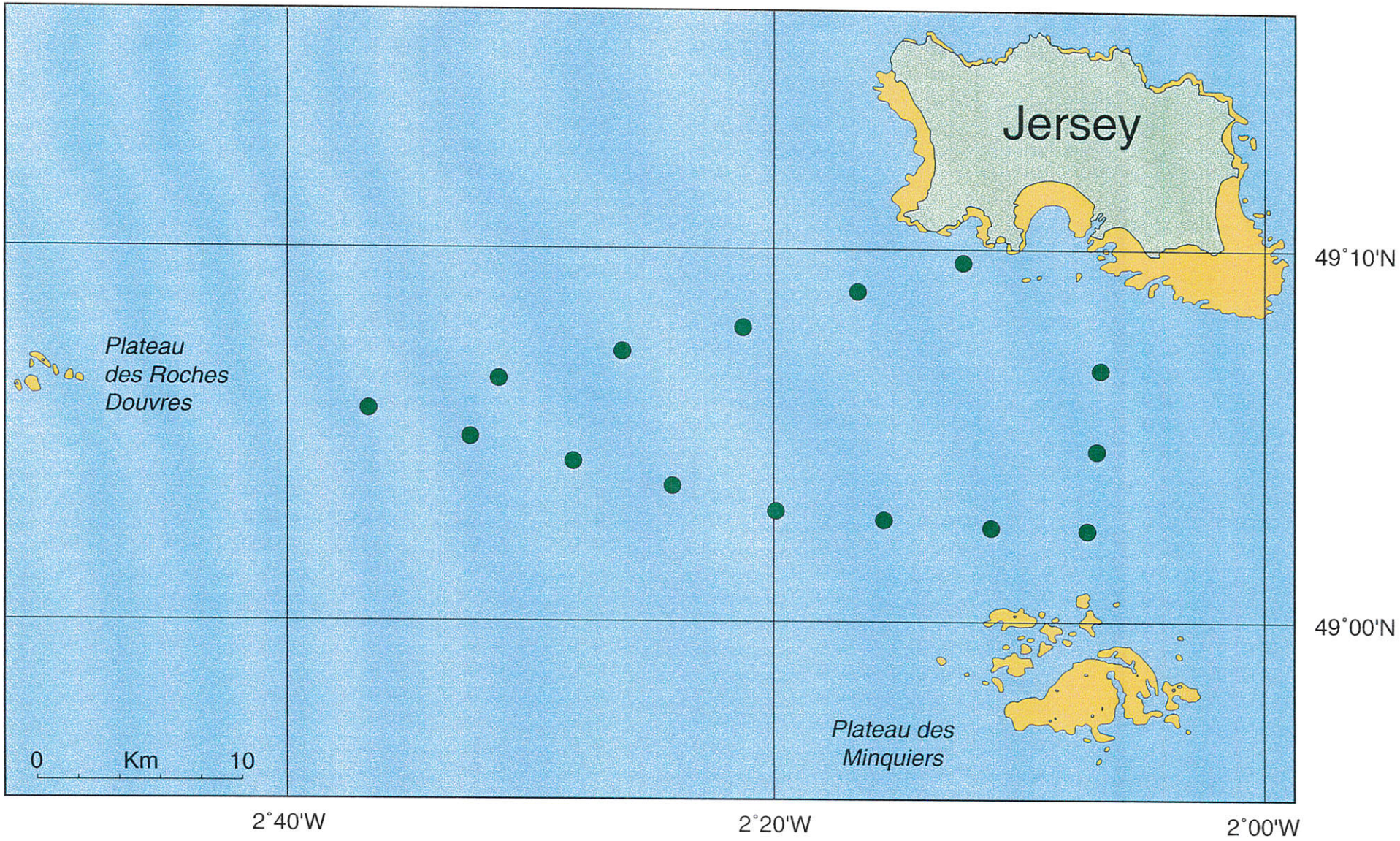

Figure 3.1a: Zone C sample sites, survey 2 (2/4/97).

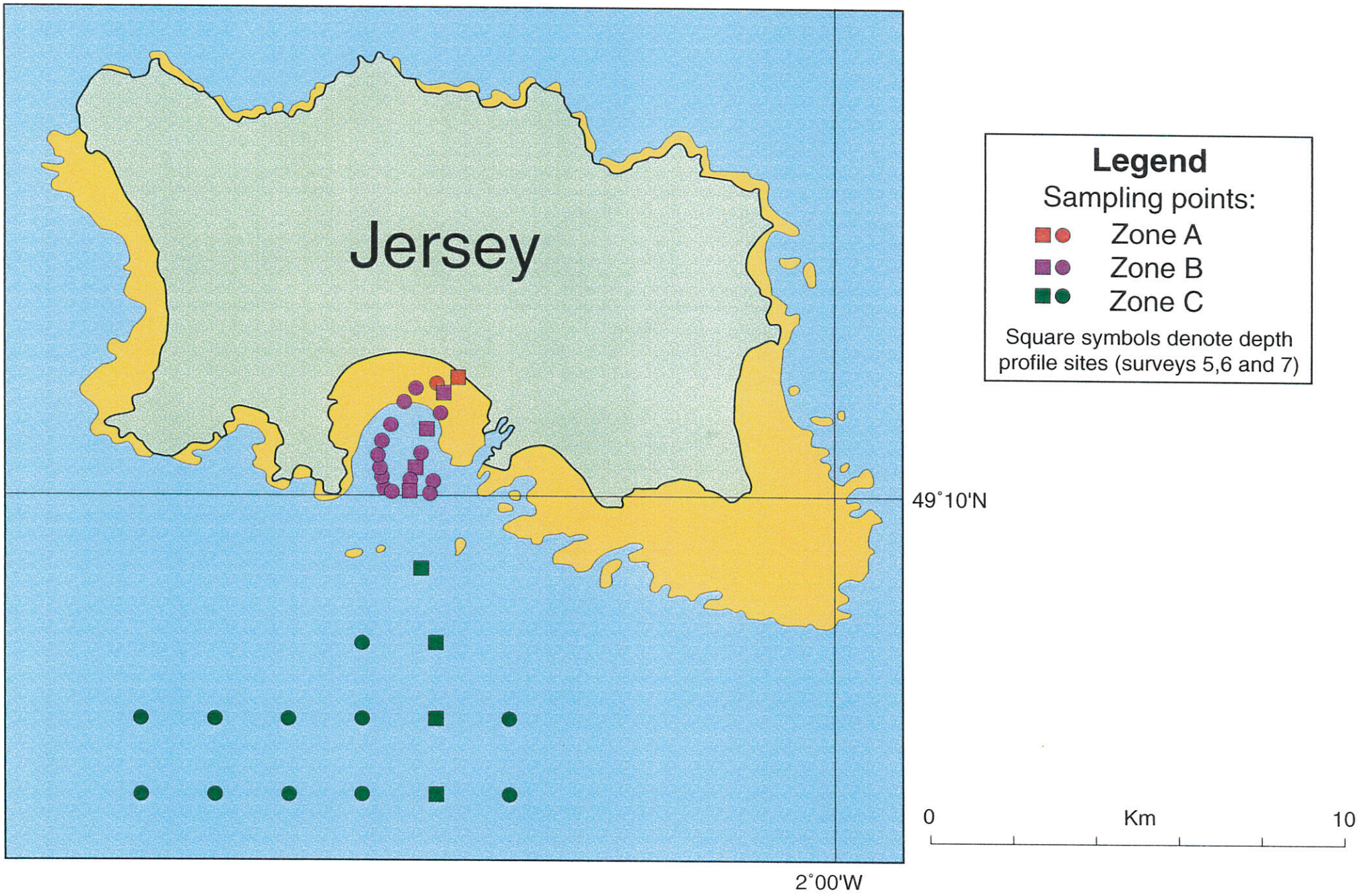

Figure 3.1b: Sampling sites, surveys 3 to 9.

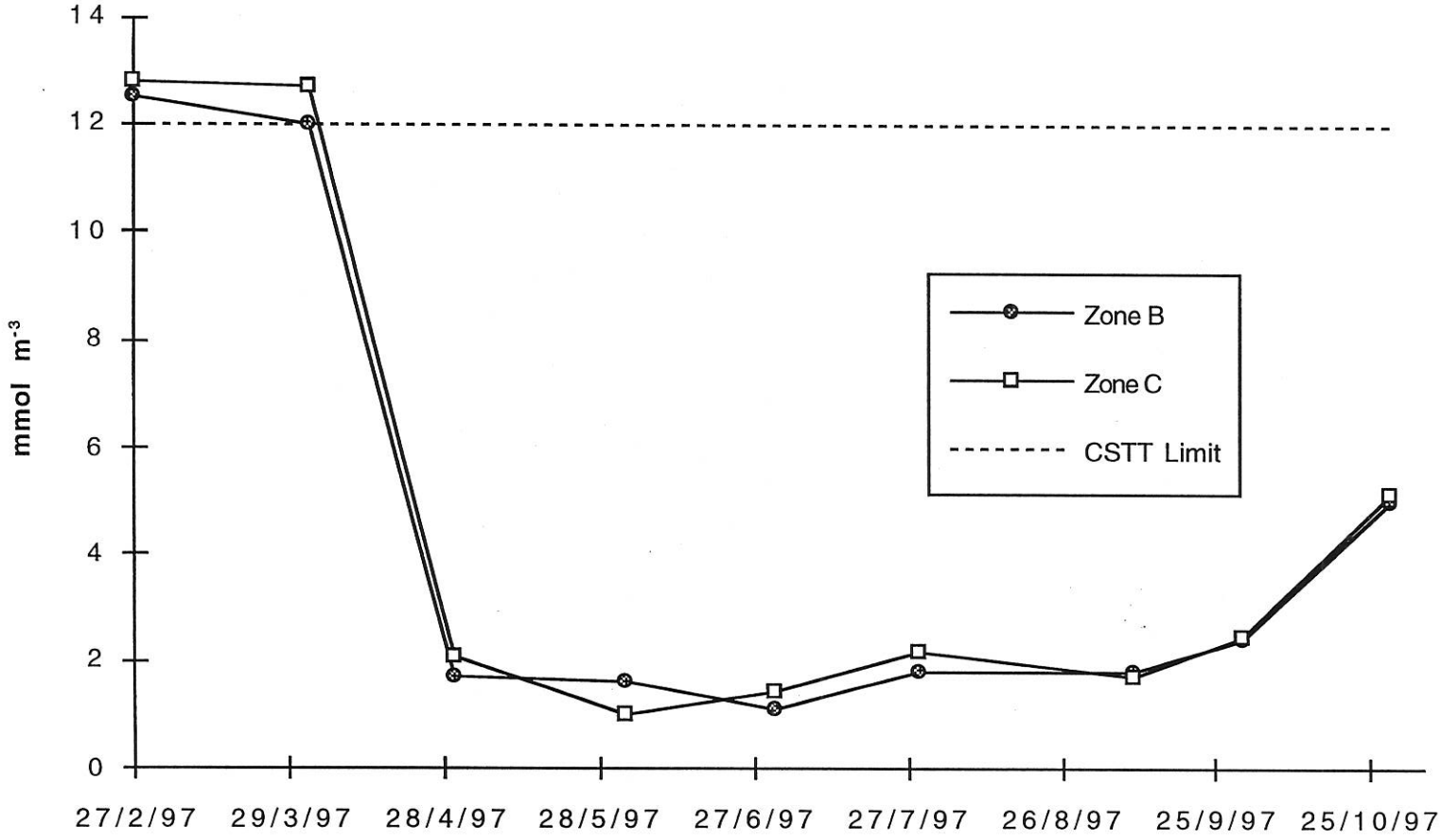

Figure 4.1: Geometric mean dissolved available inorganic nitrogen (DAIN) concentrations in zone B (St. Aubin's Bay) and zone C (offshore) (mmol m^{-3}).

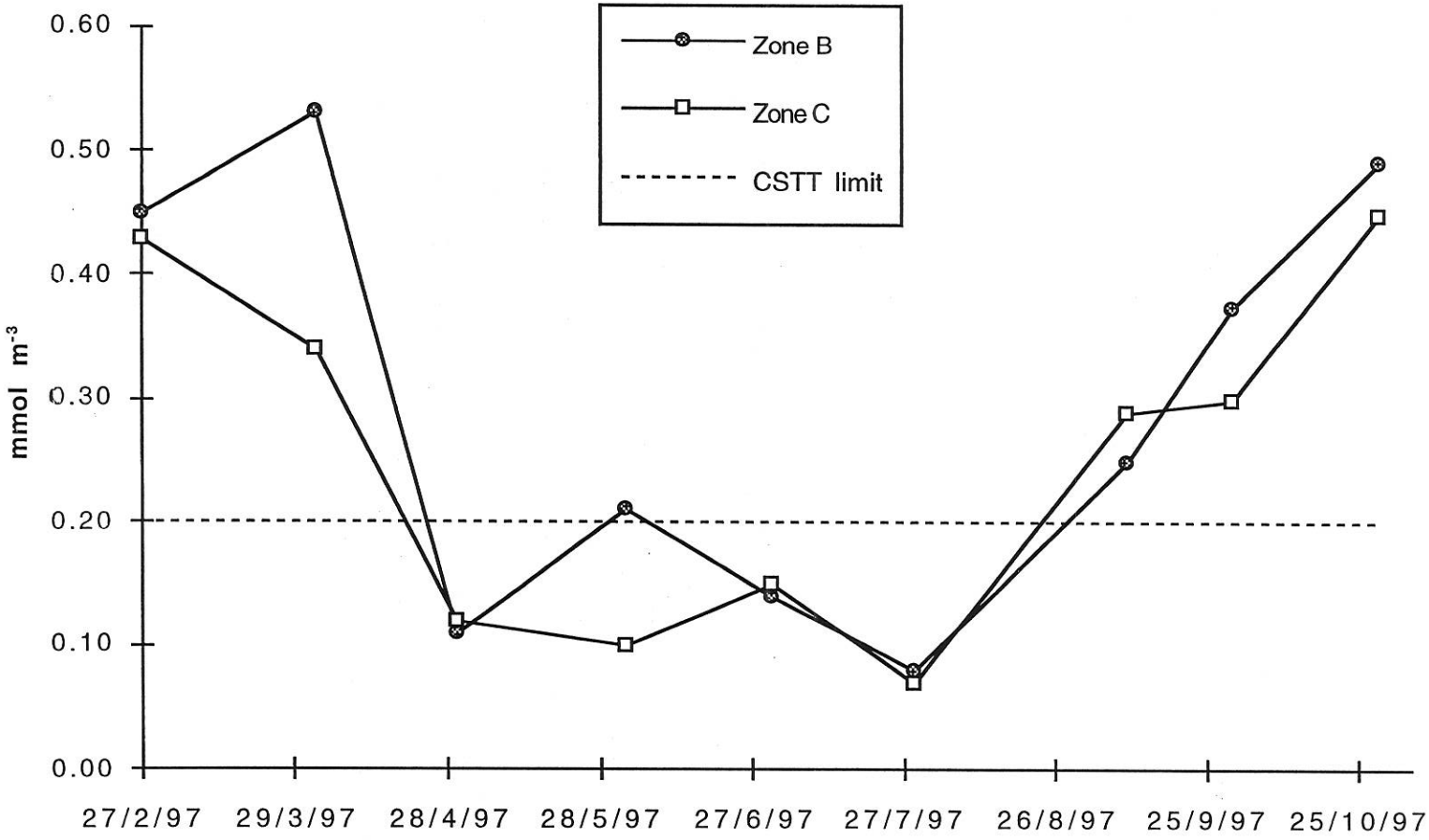

Figure 4.2: Geometric mean dissolved available inorganic phosphorus (DAIP) concentrations in zone B (St. Aubin's Bay) and zone C (offshore) (mmol m^{-3}).

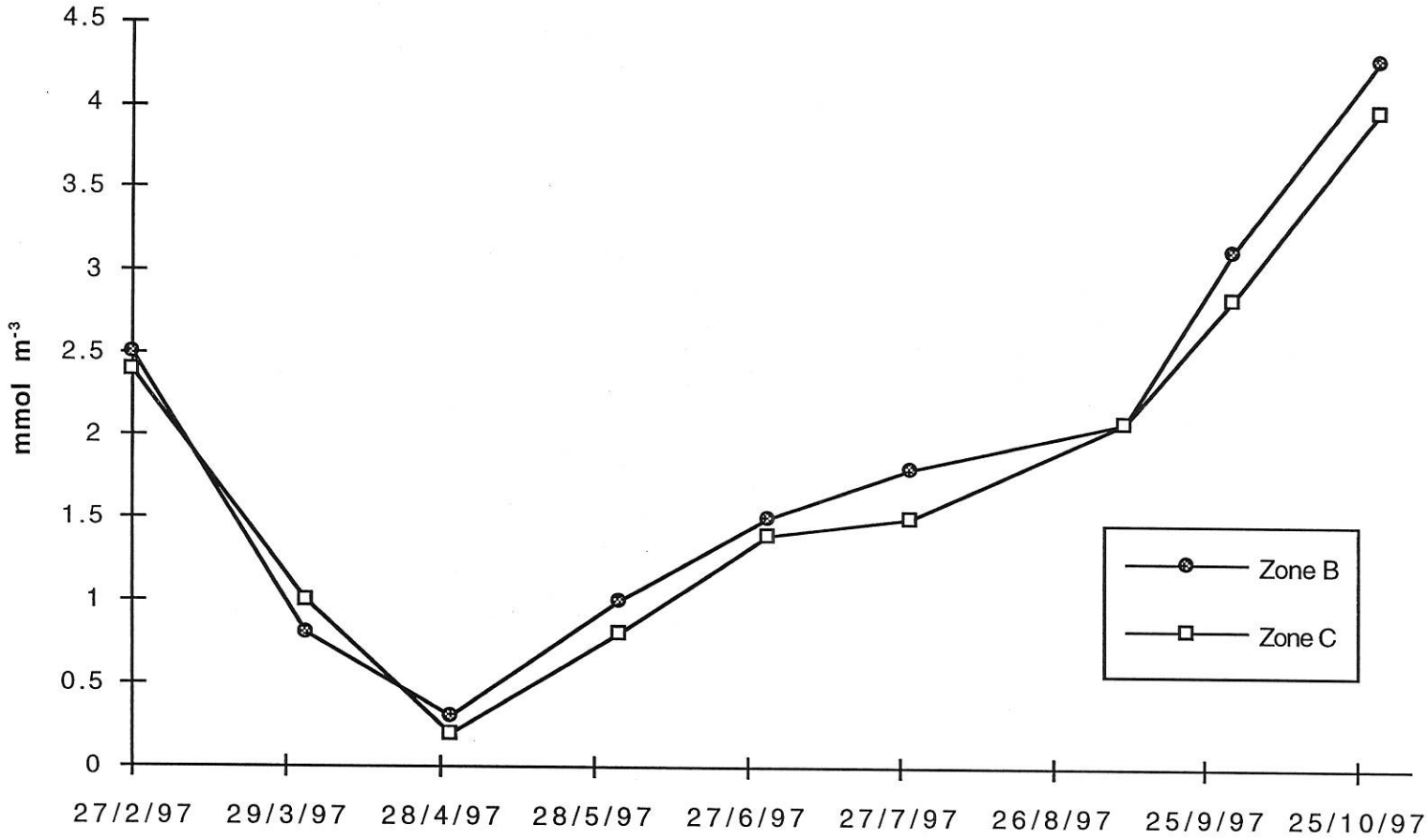

Figure 4.3: Geometric mean dissolved reactive silicon concentrations in zone B (St. Aubin's Bay) and zone C (offshore) (mmol m^{-3}).

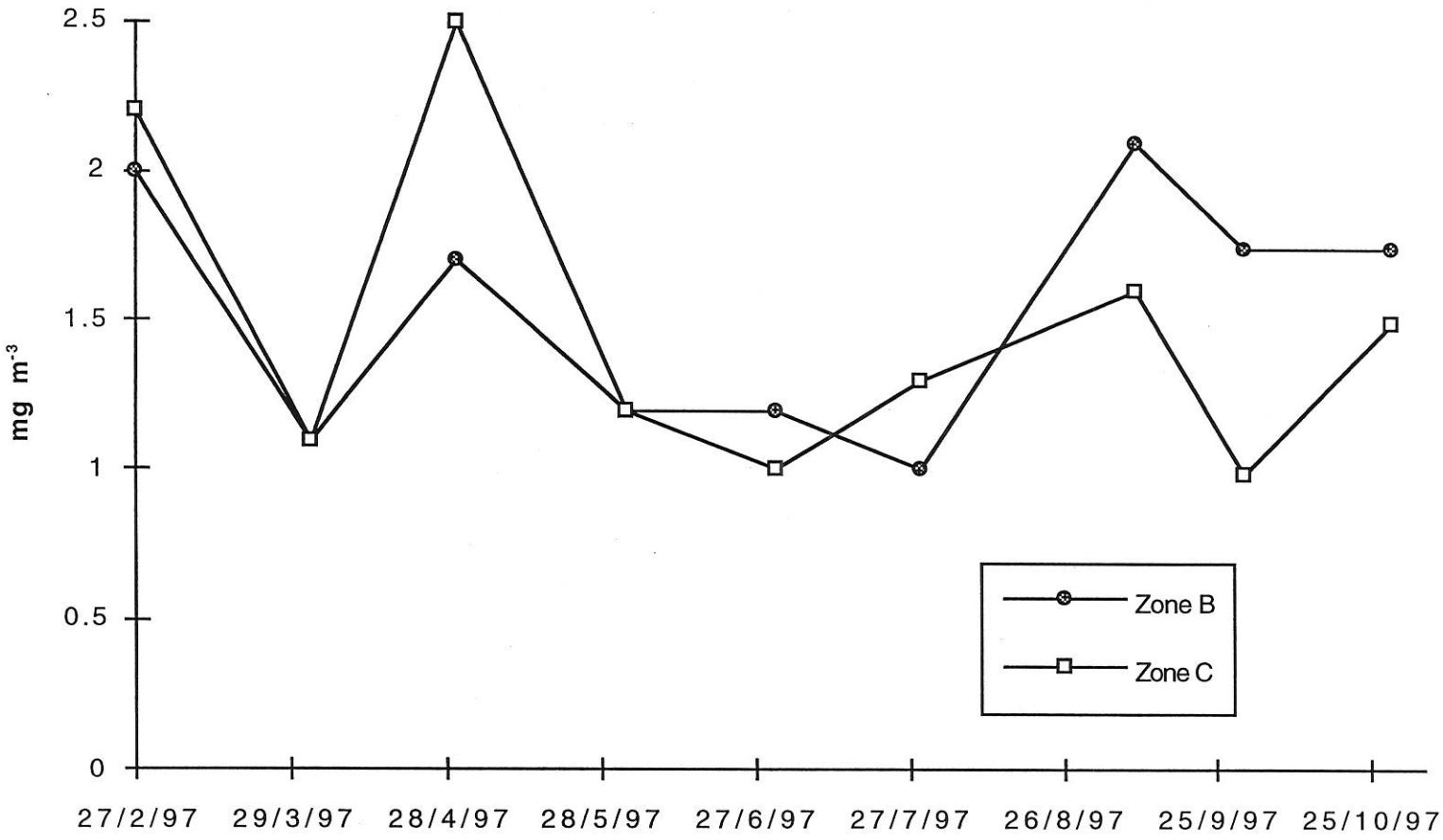

Figure 4.4: Mean chlorophyll *a* concentrations in zone B (St. Aubin's Bay) and zone C (offshore) (mg m^{-3}).

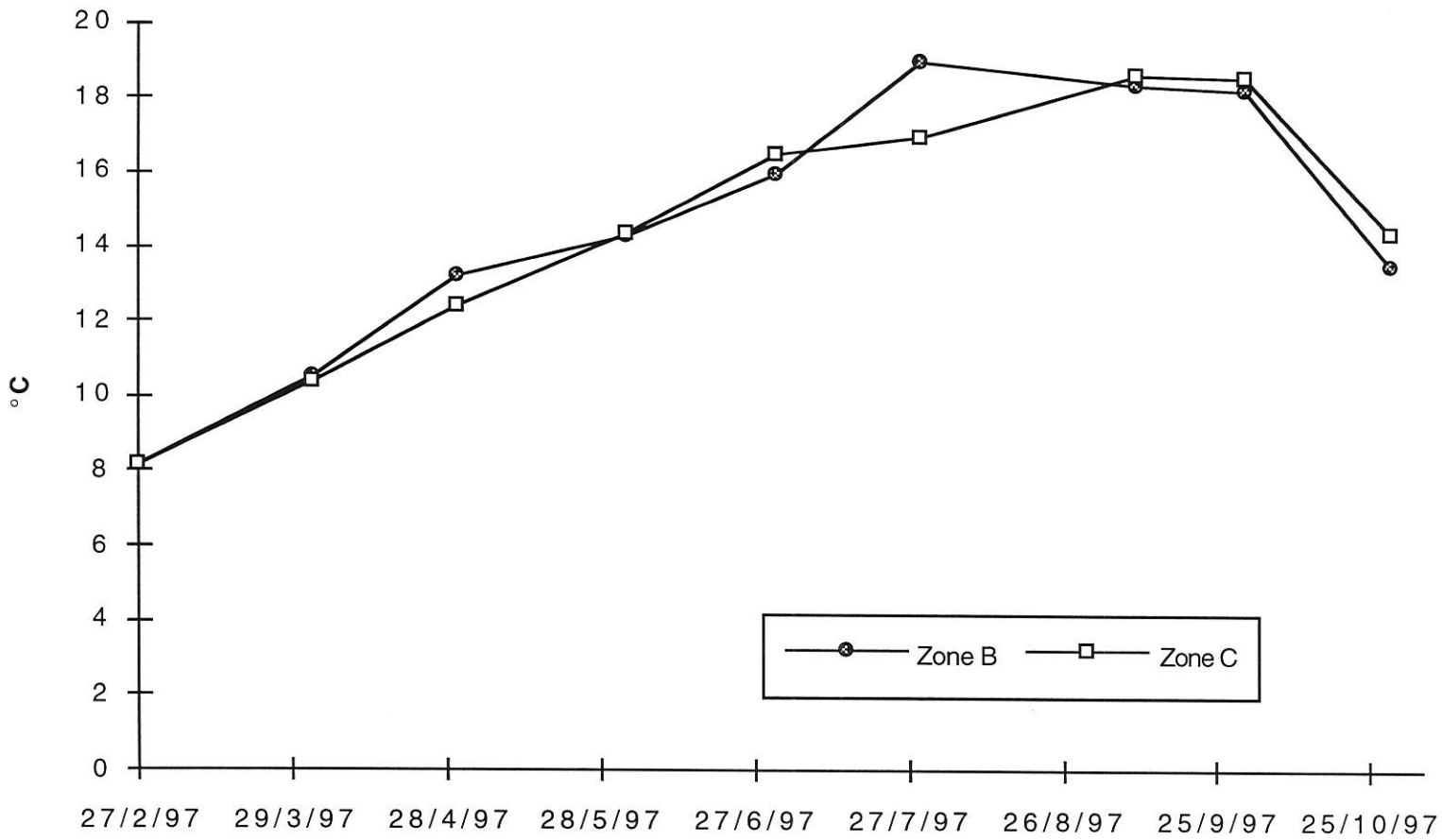

Figure 4.5: Mean sea temperatures in zone B (St. Aubin's Bay) and zone C (offshore) (°C).

Figure 4.6: Mean dissolved oxygen saturation in zone B (St. Aubin's Bay) and zone C (offshore) (mg m^{-3}) (% saturation).

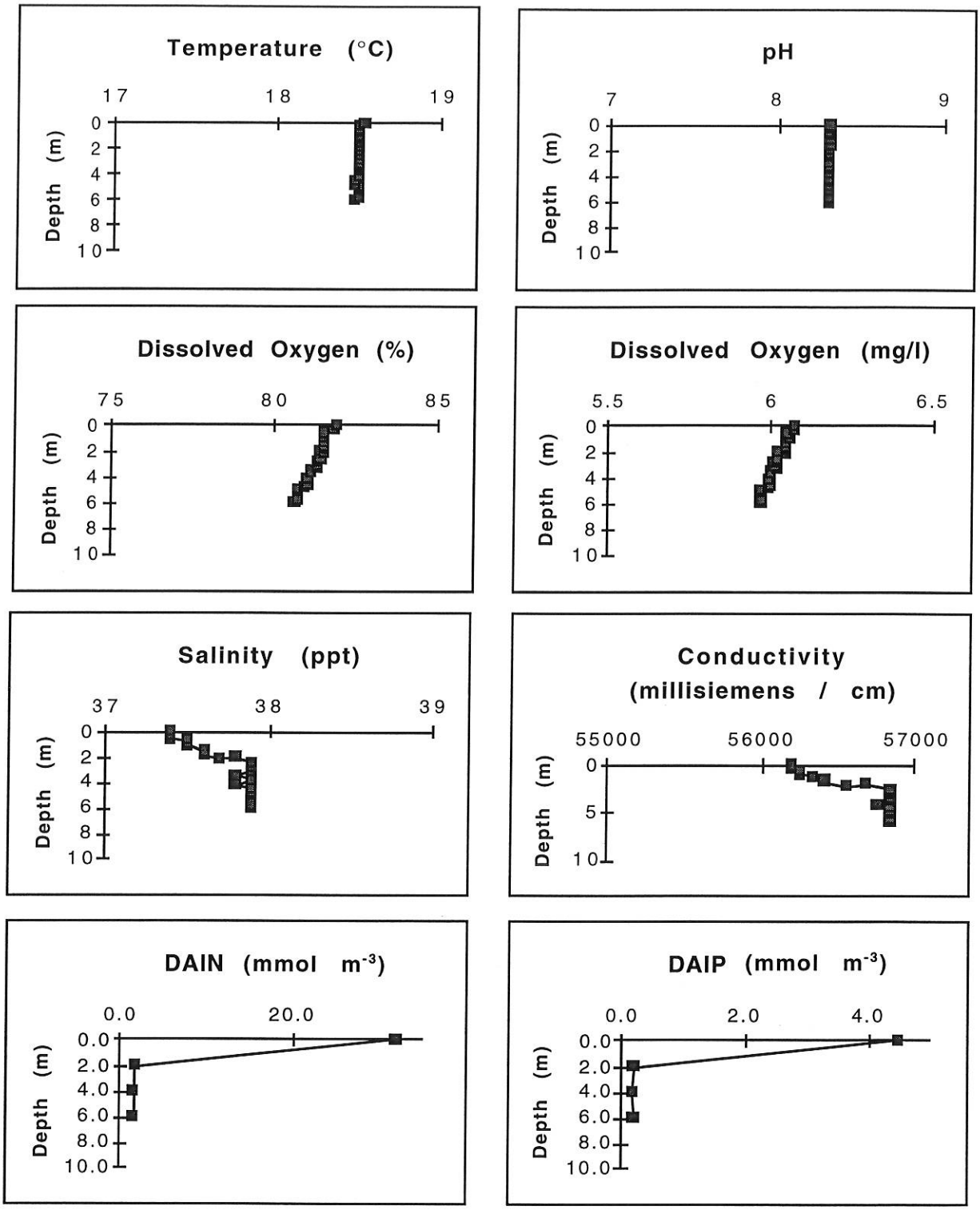

Figure 4.7: Depth profiles of temperature (°C), pH, dissolved oxygen (% and mg l^{-1}), salinity (ppt), conductivity (millisiemens cm^{-1}), DAIN and DAIP (mmol m^{-3}) taken approximately 50m from the PSD outfall during survey 7 (29/7/97).

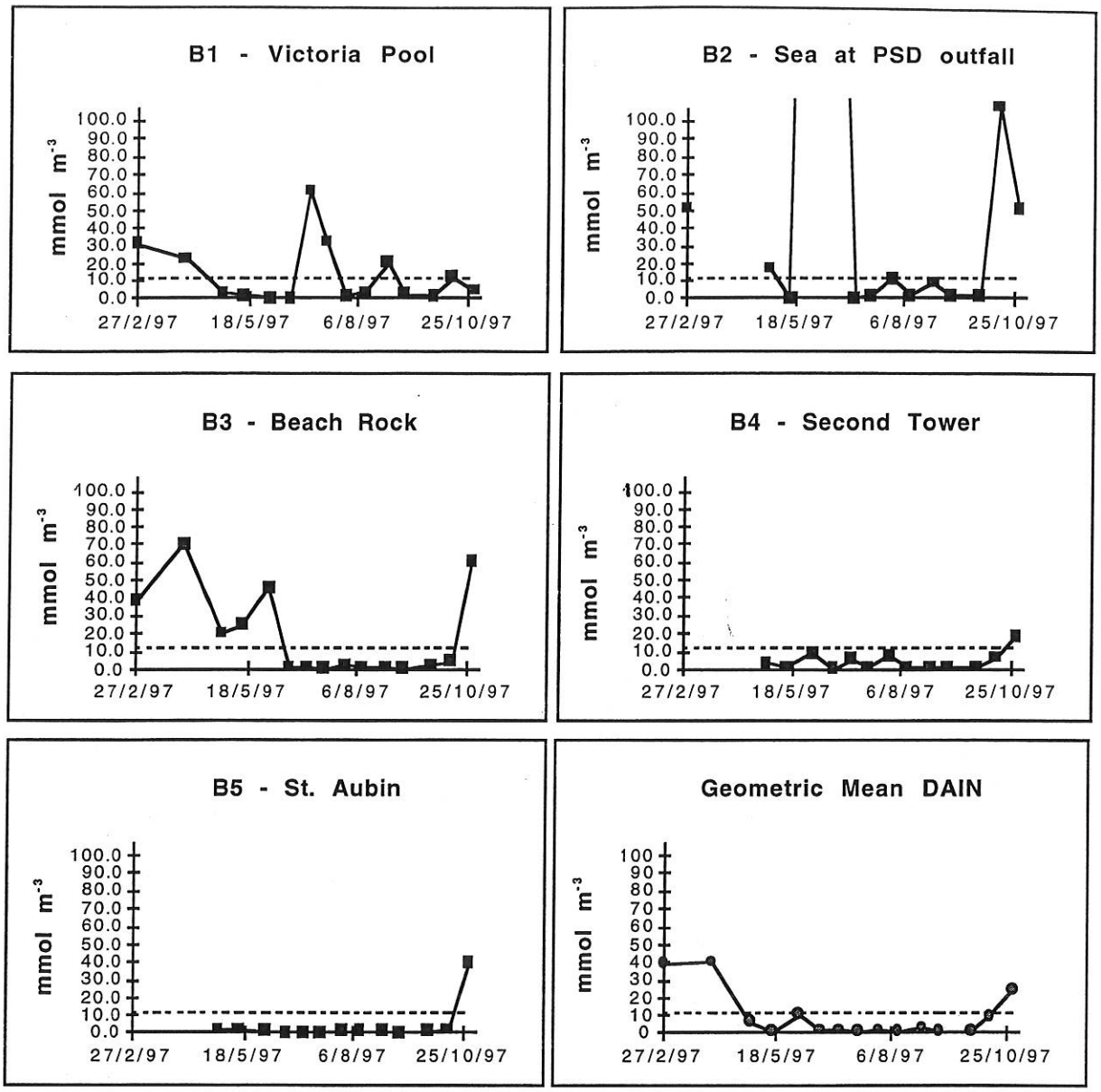

Figure 4.8: Nearshore DAIN concentrations sampled from the beach in St. Aubin's Bay (mmol m^{-3}). The extreme concentrations at B2 on 2/6/97 (688.5 mmol m^{-3}) and 17/6/97 (289.0 mmol m^{-3}) were possibly due to sampling from within the mixing zone of the PSD outfall. The high concentration at B2 on 14/10/97 can be attributed to sampling in the effluent plume from the Bellozanne STW, which was being discharged from the short outfall (i.e. at high water) at First Tower. The CSTT threshold of 12 mmol m^{-3} is indicated by the dashed line.

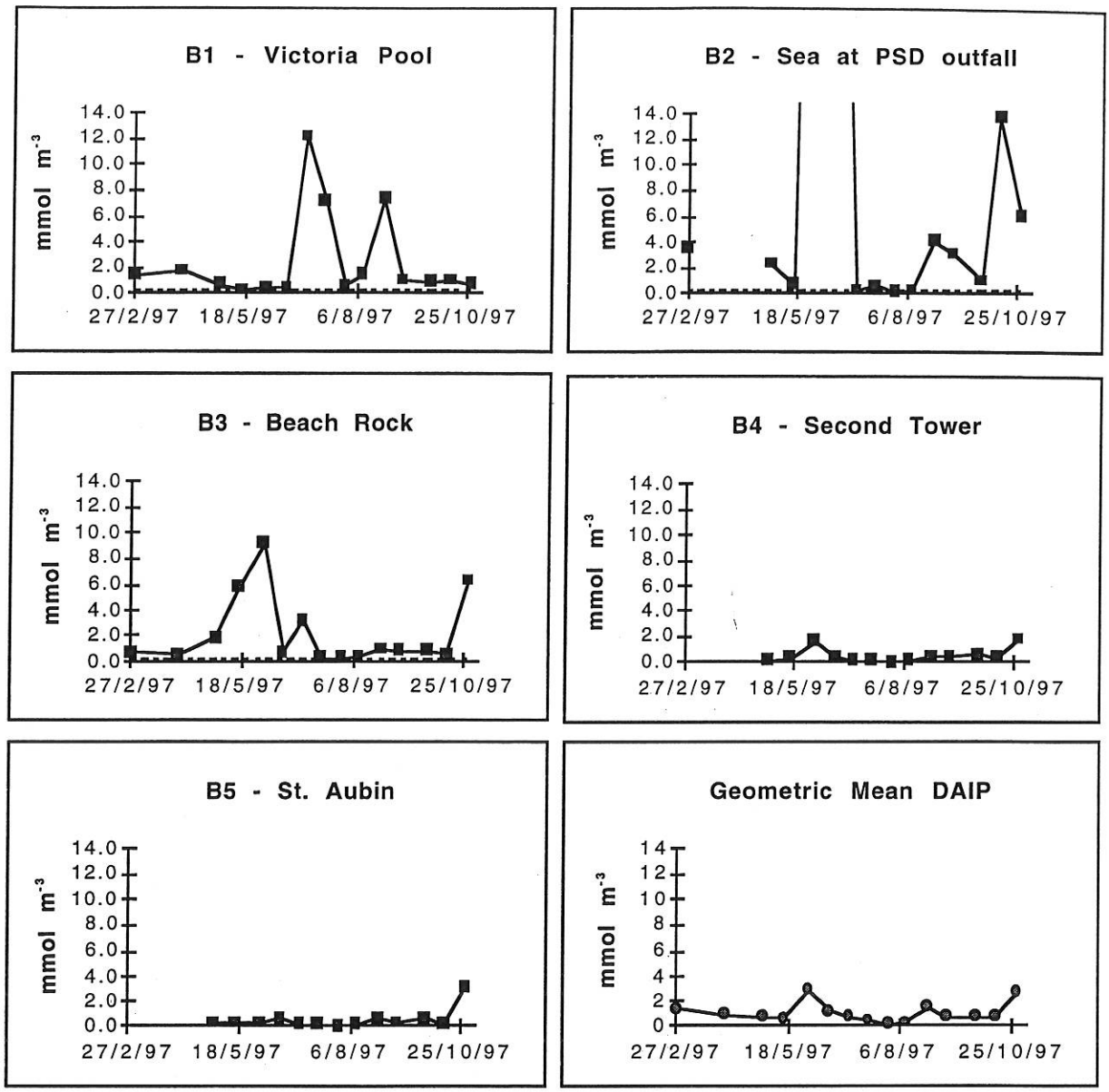

Figure 4.9: Nearshore DAIP concentrations sampled from the beach in St. Aubin's Bay (mmol m^{-3}). The extreme concentrations at B2 on 2/6/97 (116.9 mmol m^{-3}) and 17/6/97 (48.1 mmol m^{-3}) were possibly due to sampling from within the mixing zone of the PSD outfall. The high concentration at B2 on 14/10/97 can be attributed to sampling in the effluent plume from the Bellozanne STW, which was being discharged from the short outfall (i.e. at high water) at First Tower. The CSTT threshold of 0.2 mmol m^{-3} is indicated by the dashed line.

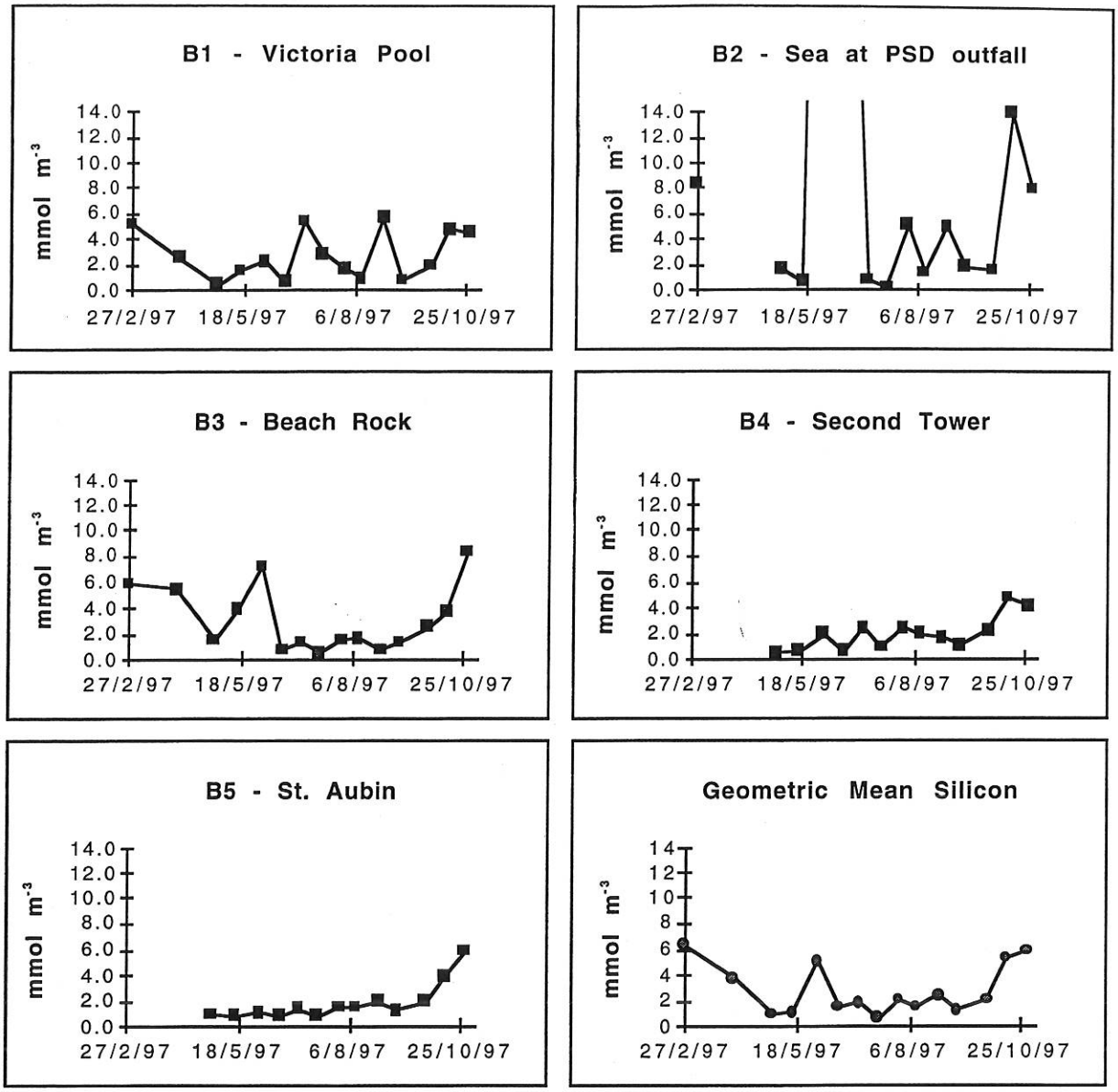

Figure 4.10: Nearshore dissolved reative silicon concentrations sampled from the beach in St. Aubin's Bay (mmol m^{-3}). The extreme concentrations (at B2 on 2/6/97 (97.6 mmol m^{-3}) and 17/6/97 (39.2 mmol m^{-3}) were possibly due to sampling from within the mixing zone of the PSD outfall). The high concentration at B2 on 14/10/97 can be attributed to sampling in the effluent plume from the Bellozanne STW, which was being discharged from the short outfall (i.e. at high water) at First Tower.

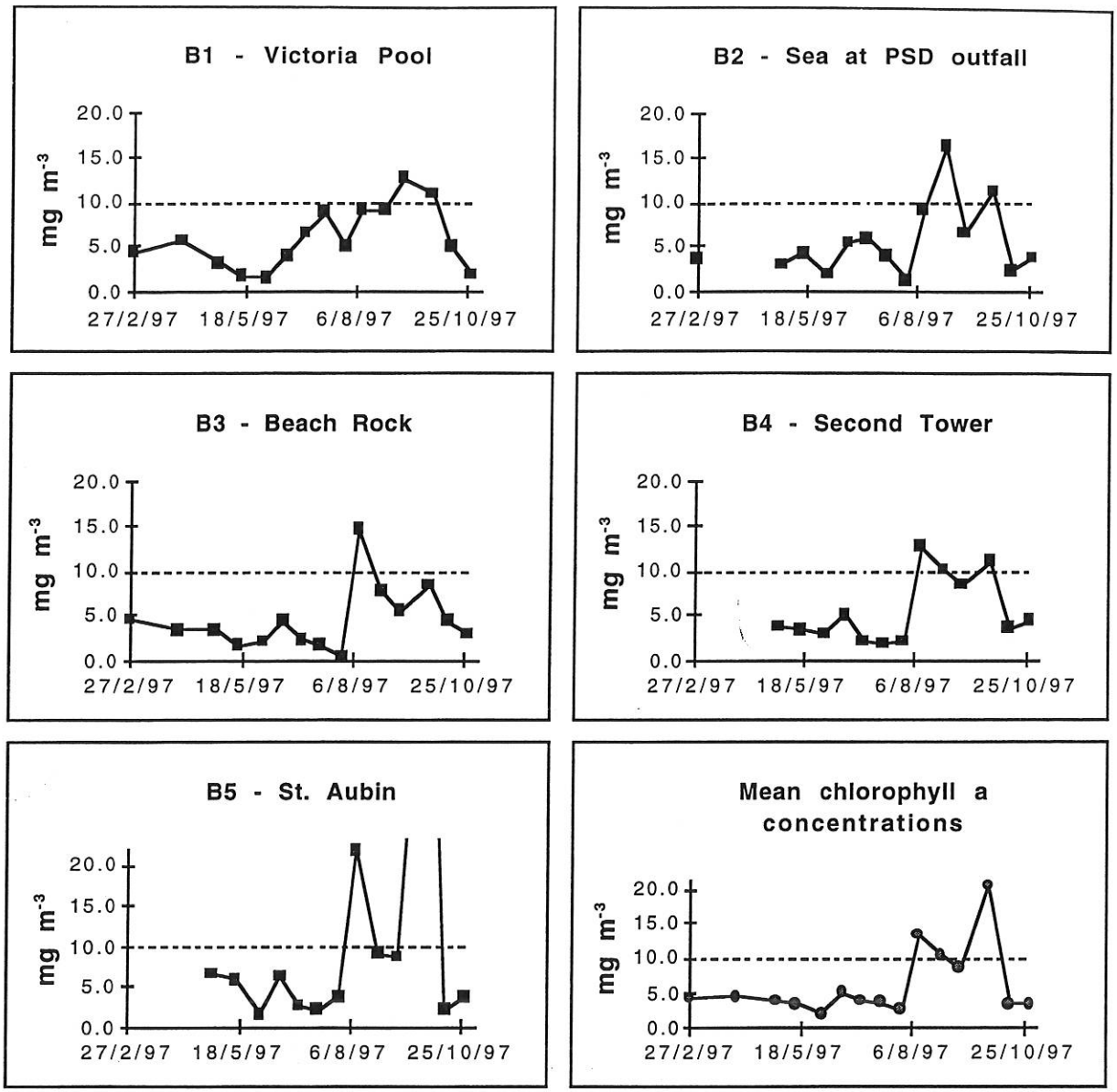

Figure 4.11: Nearshore chlorophyll *a* concentrations sampled from the beach in St. Aubin's Bay (mg m^{-3}). The extreme value at B5 on 30/9/97 = 60.2mg m^{-3}. The CSTT threshold of 10 mg m^{-3} is indicated by the dashed line.

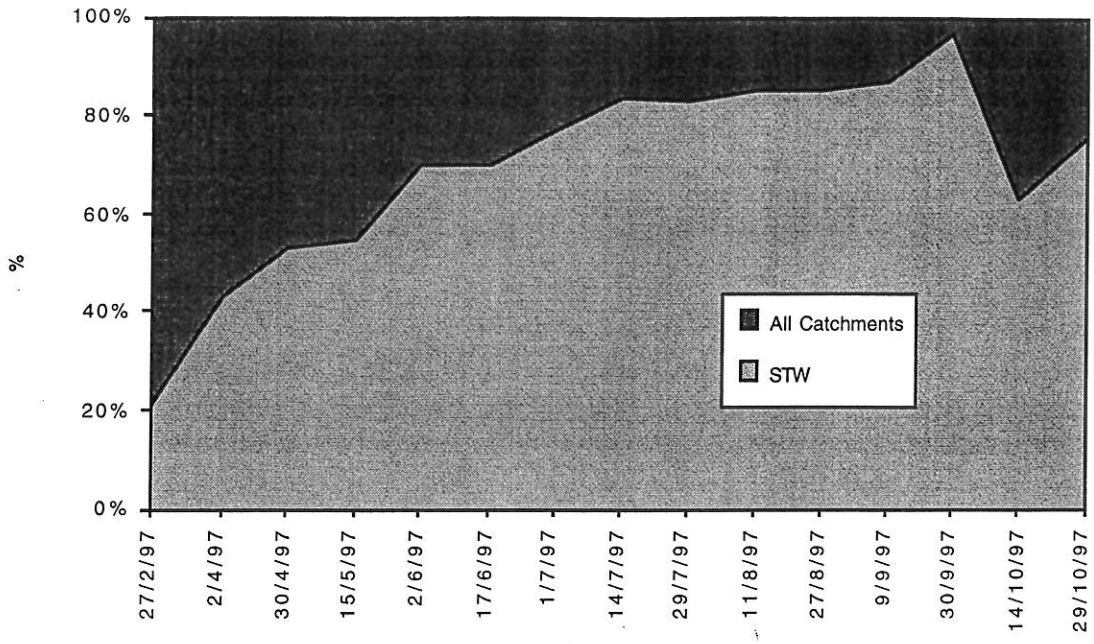

Figure 5.1a: Proportion of the total DAIN load entering St. Aubin's Bay contributed by the Bellozanne final effluent and from combined catchment sources.

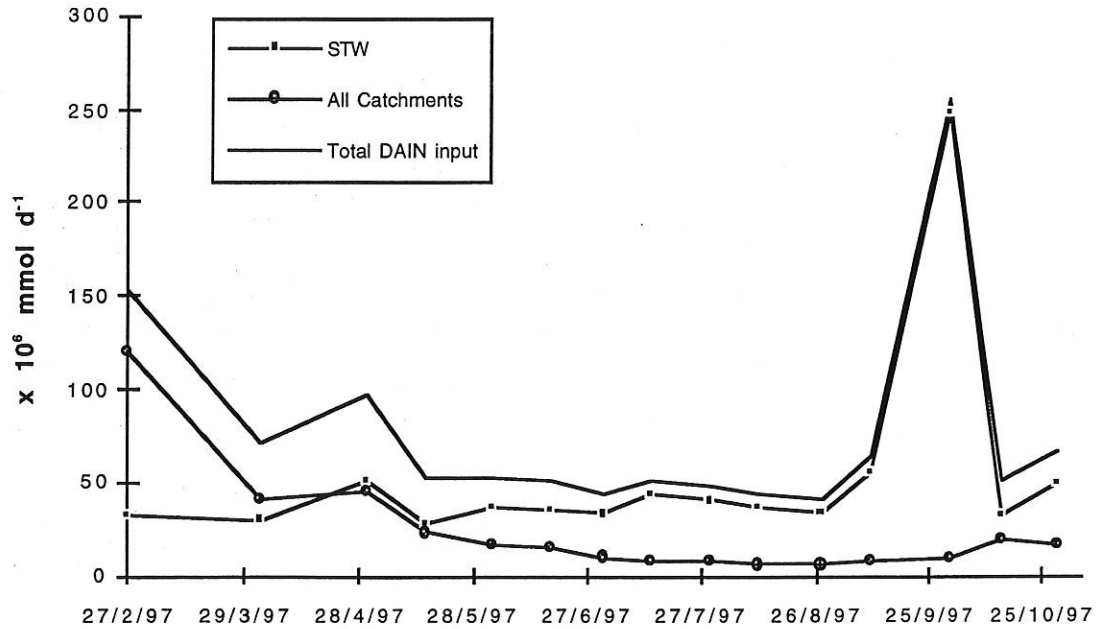

Figure 5.1b: Contribution of Bellozanne final effluent and combined catchment sources to the daily total DAIN load entering St. Aubin's Bay (x 10^6 mmol d^{-1}).

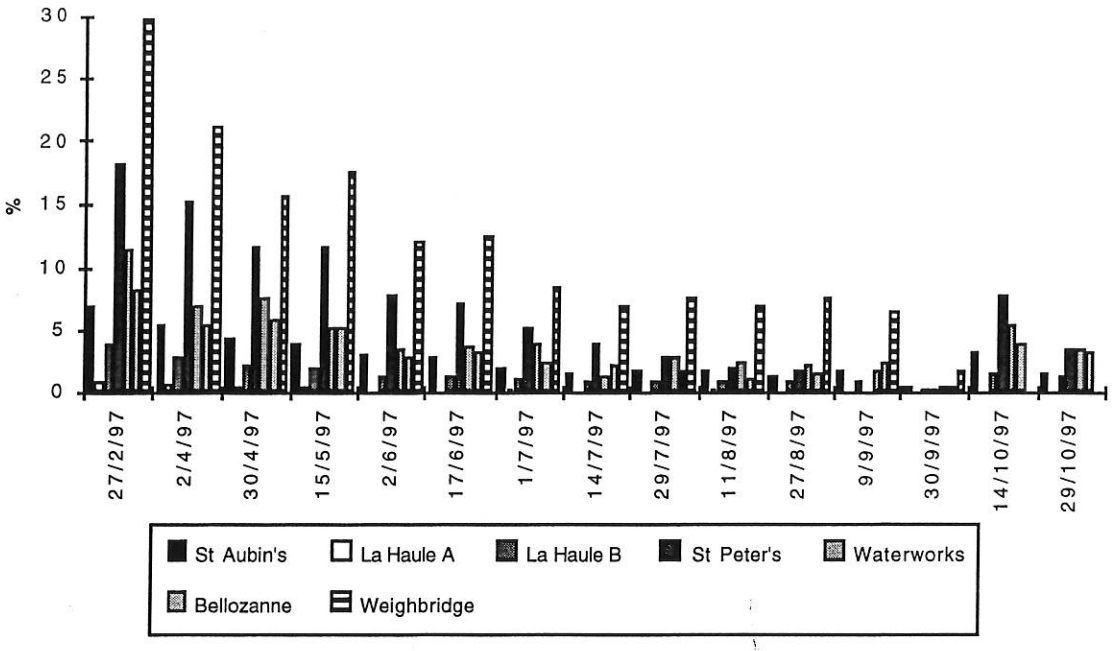

Figure 5.1c: Contribution of the various catchment sources to the daily total DAIN load entering St. Aubin's Bay (%).

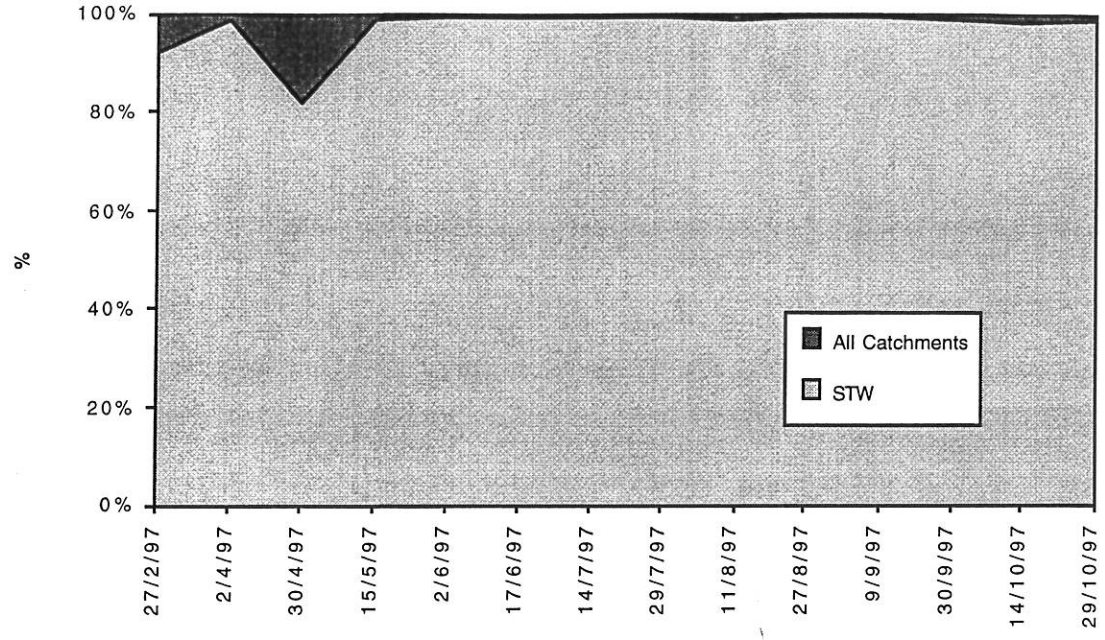

Figure 5.2a: Proportion of the total DAIP load entering St. Aubin's Bay contributed by the Bellozanne final effluent and from combined catchment sources.

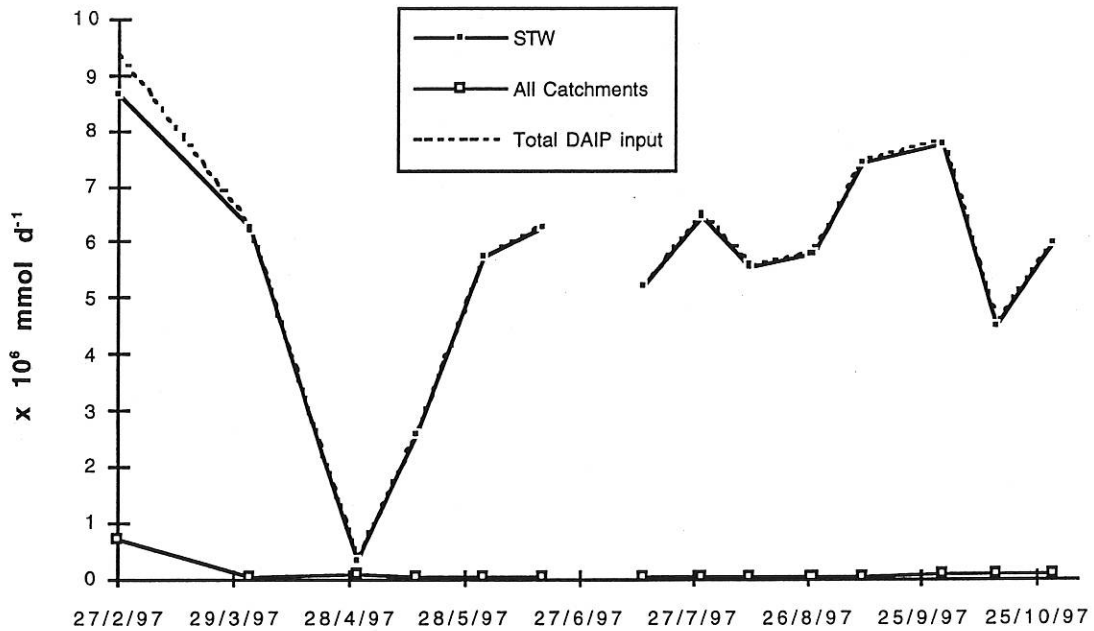

Figure 5.2b: Contribution of Bellozanne final effluent and combined catchment sources to the daily total DAIP load entering St. Aubin's Bay (x 10^6 mmol d^{-1}).

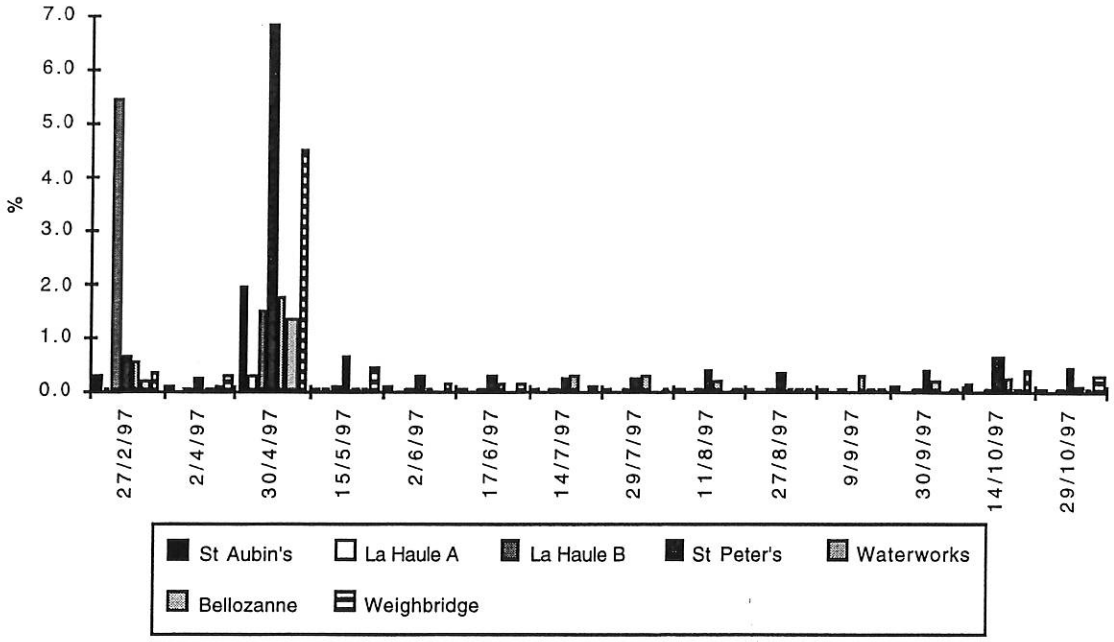

Figure 5.2c: Contribution of the various catchment sources to the daily total DAIP load entering St. Aubin's Bay (%).

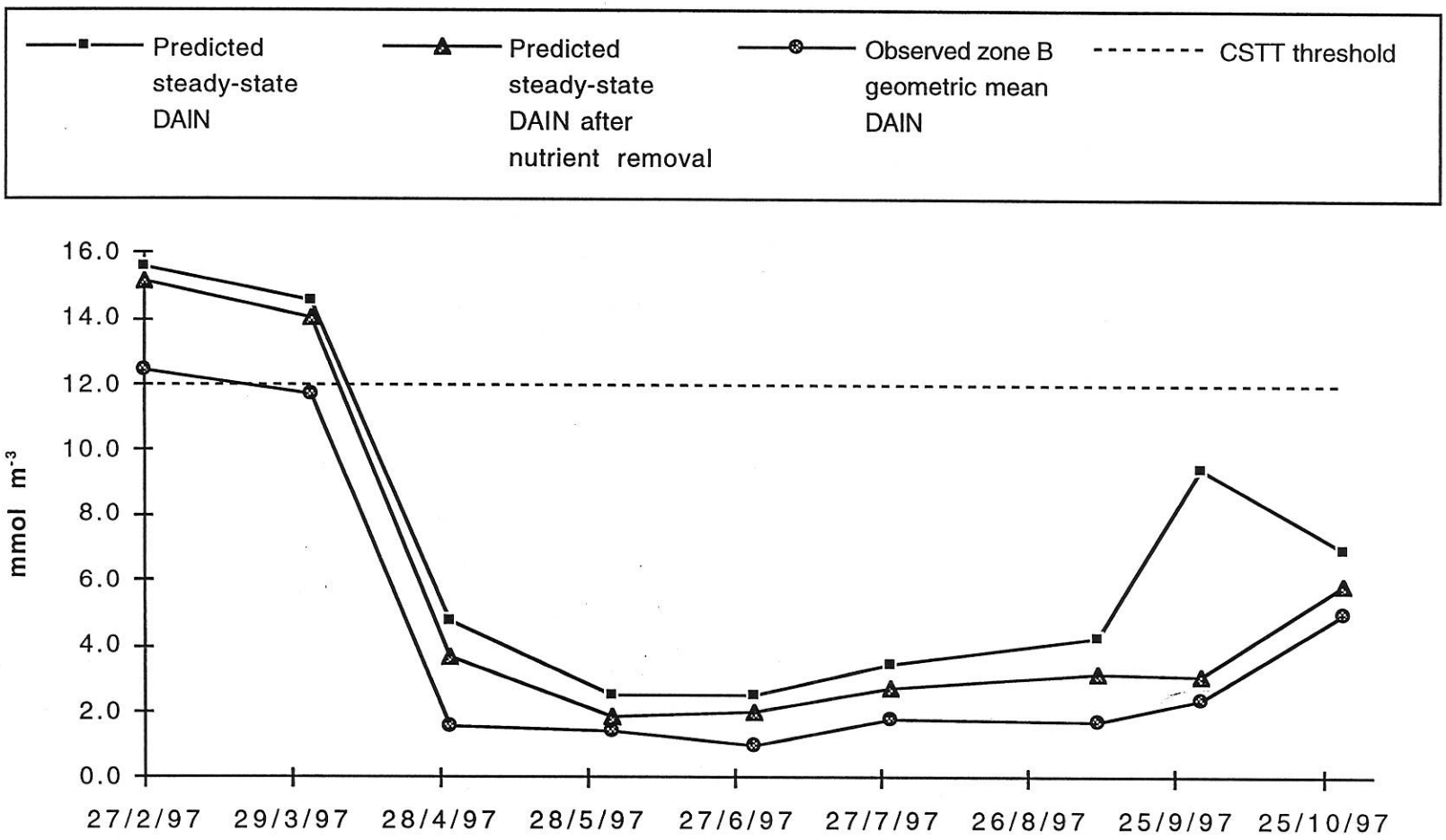

Figure 5.3a: Predicted mid-tide steady state DAIN concentrations (S_{DAIN}) within St. Aubin's Bay using observed data and proposed DAIN concentrations in the Bellozanne effluent after nutrient removal (10mg l^{-1} DAIN). The observed geometric mean DAIN concentration in zone B (St. Aubin's Bay) is also shown.

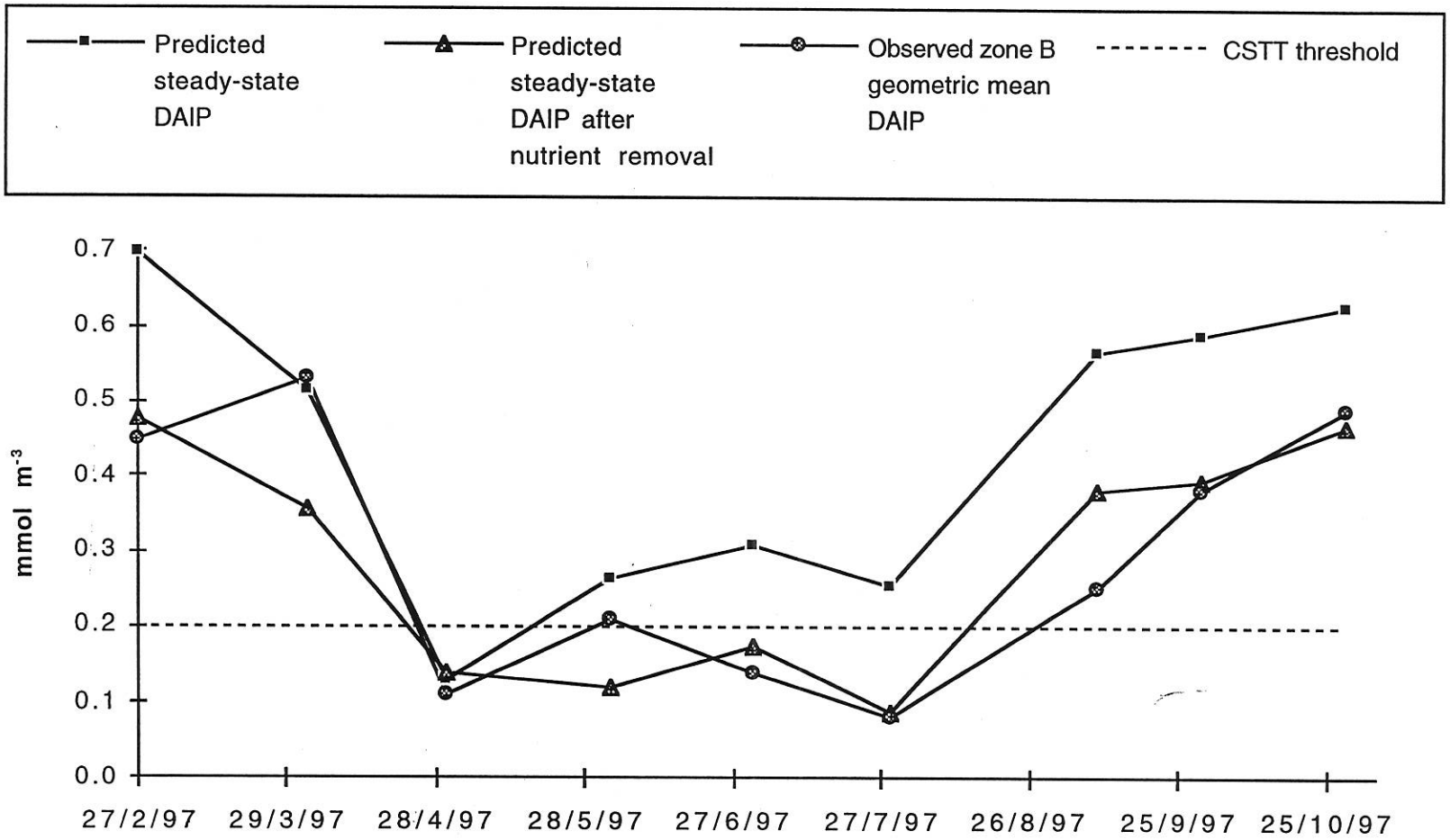

Figure 5.3b: Predicted mid-tide steady state DAIP concentrations (S_{DAIP}) within St. Aubin's Bay using observed data and proposed DAIP concentrations in the Bellozanne effluent after nutrient removal (1mg l^{-1} DAIP). The observed geometric mean DAIP concentration in zone B (St. Aubin's Bay) is also shown.

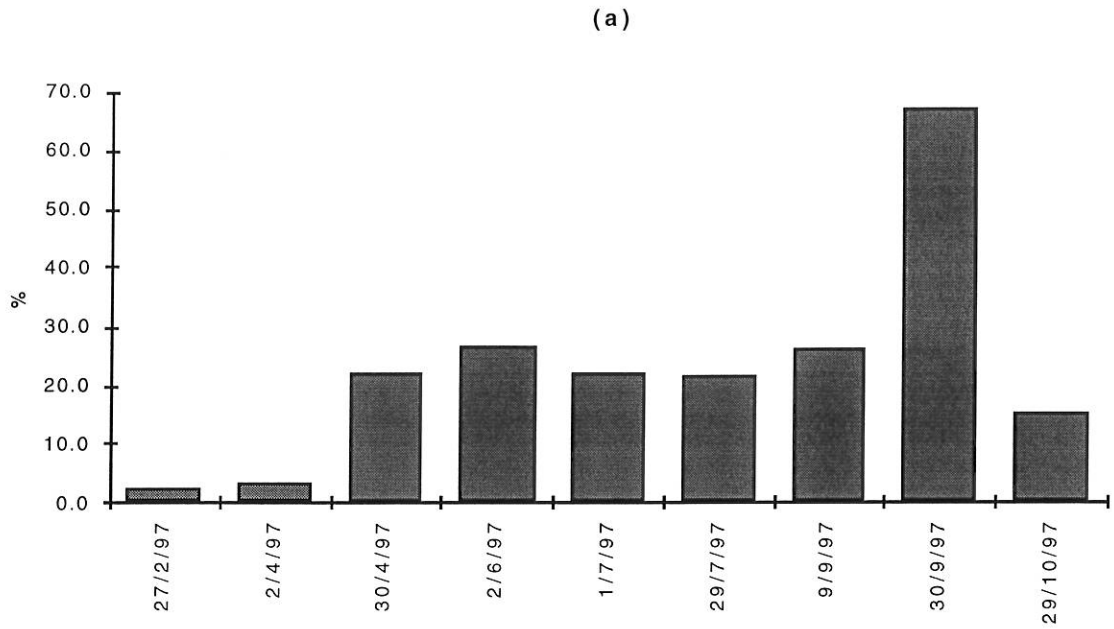

Figure 5.4a: Predicted reduction in mid-tide steady state DAIN concentrations (S_{DAIN}) within St. Aubin's Bay after nutrient removal from the Bellozanne effluent.

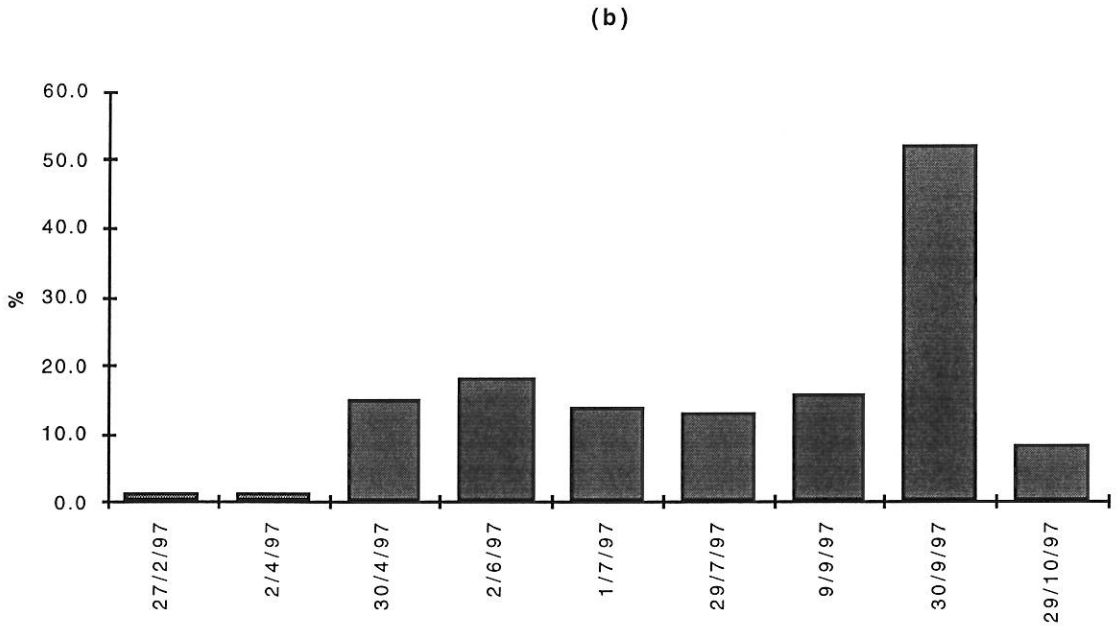

Figure 5.4b: Predicted reduction in mid-tide steady state DAIP concentrations (S_{DAIP}) within St. Aubin's Bay after nutrient removal from the Bellozanne effluent.