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Cold, Fresh Halocline South of Cape Blanco?

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The currents, temperature, and salinity at the Rogue River mooring site were compared for the “summer” period (May to October) 2000, 2001, and 2002 to examine the regional extent of the anomalous conditions off the Oregon coast. The overlaid low-passed temperature time series appear event-driven and don’t exhibit any particular long term trend. Temperatures did appear lower during most of July 2002 by about 0.5 C (eyeball estimate) than July 2000 or 2001. The corresponding salinities were not anomalously fresh except during two events which can clearly be identified as across-shore excursions of warm, fresh water from offshore (see poster). Monthly averages were computed to reduce the event-by-event character of the records. The monthly mean temperatures were cooler than previous years during May, June, and July at all depths but returned to near-normal in August and September. The deltas at 22, 35, and 66 m were 0.8, 0.6, and 0.4 C respectively. The alongshore near-surface currents were anomalously equatorward in 2002 by about 5 cm s -1 (-15 vs. –10 cm s -1) during May, June, and July but poleward by a similar value during August. The deeper currents were not significantly different from year to year. The T-S plots for the three years formed overlapping envelopes at 22 and 35 m. At 66 m, the water colder than 7.5 C was saltier during 2002 by about 0.1 psu. As an aside, we note that solitons observed at 22 m provide an indication of the true surface temperature and salinity above, allowing the extremes during the “fresh events” to be observed. These are waves of depression at this site off Oregon and push the surface water down to the 22 m depth as they pass by.

[No figures received.]