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VIII. Recommendations

1. Considerable effort is needed in 2001 to quantify the sources, nature and contribution of nitrogenous sources to the oxygen demand in the DWC. BOD tests suggest at least half to two thirds of the total 10day BOD in the DWC during 2000 was nitrogenous BOD. BOD tests should include dissolved BOD in order to separate the dissolved from particulate nitrogen sources. Additional nitrogenous load measurements are needed at upstream stations in order to quantify upstream ammonia and non-ammonia Kjeldahl nitrogen load. In addition, the oxygen demand from algal growth versus nitrifying bacteria should be partitioned in light/dark bottle community growth rate studies using isotopes.
2. Below standard dissolved oxygen concentration also occurs early in June. Considerable effort is needed to determine the cause of this early season oxygen demand and if there is any carry over effect later in the fall. This will require starting the sampling program sometime in June.
3. Tidal studies in 2000 demonstrated the high variability of tidal day material load. More frequent discrete tidal day measurements are needed to produce more reliable estimates of mass balance for variables that cannot be measured with continuous monitors.
4. Considerable effort is needed to determine the magnitude and mechanisms associated with the load shift between Vernalis, a station used to represent upstream load, and the DWC. Additional information is needed on the loss of algal biomass and turbidity measured by the continuous monitors as well as new information on loss due to settling, grazing and local agricultural pumping between Vernalis, Mossdale and the DWC.
5. Information is needed on the influence of water-year type on sources and mechanisms that affect oxygen demand. The 2000 sampling program should at least be repeated in a dry or critically-dry year.
6. High daily variability in the material load and water quality conditions also suggest a year or two of measurements are inadequate to properly quantify material load and water column processes. A long-term program should be developed that will build such a data set.
7. The continuous monitoring network established in 2000 provided detailed information on the nature of the oxygen depletion and this network should be continued and perhaps enhanced in the future. The full use of the monitoring network could not be assessed in 2000 because the focus was on establishing the network grid and water conditions were fairly uniform during this wet year. The

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network should be operated in future years, particularly during dry and critically-dry years.