

STATISTICAL EVALUATION OF PERIPHYTON SAMPLES FROM MONTANA REFERENCE STREAMS

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Since 2000, Montana Department of Environmental Quality (MDEQ) has been sampling and analyzing periphyton communities from streams throughout Montana considered representative of natural biological, physical, and chemical integrity of the region. A full discussion of these reference streams and criteria used to screen them can be found in Suplee et al. (2005). Through 2005, over 100 reference streams have been sampled throughout the state, enabling statistical analysis meeting generally accepted power requirements. This talk will address three statistical evaluations performed on these data: 1. Assessment of the similarity of floristic communities among reference samples; 2. Evaluation of the extent of inter- and intra- annual variability on metric values; and, 3. Characterization of the distribution of metric values calculated from these samples. Findings from these analyses directly support use and interpretation of periphyton sample data in conducting water quality investigations in Montana.