

Use of Streambed Characteristics as Ecological Indicators of Long-Term Trends in Sediment Supply Associated With Forest Management on PALCO Lands¹

Kate Sullivan² and Matt O'Connor³

In recent years, PALCO has significantly advanced ecological protections on its lands as it manages according to provisions in its Habitat Conservation Plan Agreement with federal agencies. This includes the use of watershed assessments and extensive monitoring. A key element of watershed management includes ecological goal-setting and monitoring over time to determine if objectives are achieved. Streambed sediment characteristics have become widely used as indicators of stream conditions relevant to the productivity of fish and aquatic organisms. It is hypothesized that practices in use on PALCO lands will reduce sediment supply from past historical levels with a corresponding change in defined streambed measures. However, despite a basis in geomorphic theory and a robust scientific literature regarding the measurement of parameters in a research context, there are few examples and little discussion of the potential for trend detection in these characteristics. In this paper we consider the use of sediment characteristics in a long-term program monitoring trends in sediment-rich northern California streams.

¹ An expanded version of this paper was presented at the Redwood Science Symposium: What does the future hold? March 15-17, 2004, Rohnert Park, California.

² PALCO, P.O. Box 712, Scotia, CA 95565, (707) 764-4492.

³ O'Connor Environmental Inc., Healdsburg, CA 95448, (707) 431-2810.