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Stream Bed Movement and Habitat Disturbances from Small-Scale Suction Dredging

1) Flushing winter flows can greatly reduce the long term impact of dredging (Harvey, B.C., 1980);
2) Cross-sectional profiles indicated that the impact of the dredge piles relative to the stream width of the river was small. Dredge piles at Site 1 were largely obscure after 1-year following the scouring flows that accompany snow-melt. In Site 2 the dredge piles were clearly discernable after one year dredge (Prussian, A.M., T.V. Royer, and G.W. Minshall, 1999);
3) Where flushing flows occur, substrate changes are gone in one year (Harvey, B.C., K. McCleneghan, J.D. Linn, and C.L. Langley, 1982);
4) Changes in stream morphology was typically of short duration lasting until the next high flow (North, P.A., 1993);
5) High water flows and bed-load movement in winter filled dredge holes and flushed sediment from the study site streams (Somer, W.L. and T.J. Hassler, 1992);
6) Movement of unstable gravel beds downstream during the next year's peak flows filled the downstream pool (Thomas, V.G., 1985);
7) The effect of habitat disturbance are local and of short (North, P.A., 1993);
8) Effects were significant, but localized (Harvey, B.C., K. McCleneghan, J.D. Linn, and C.L. Langley, 1982);
9) Suction dredging effects could be short-lived on streams where high seasonal flows occur (Harvey, B.C., 1986);
10) Substrate changes were gone after one year (Harvey, B.C., 1986);
11) Operation of multiple dredges did not result in cumulative effects (Hassler, T.J., W.L. Somer and G.R. Stern, 1986);
12) Most visible effects were gone after one year (Hassler, T.J., W.L. Somer and G.R. Stern, 1986);
13) Salmonids spawned in the vicinity of the previous seasons dredging, but salmonid redds were not located in the tailing piles (Hassler, T.J., W.L. Somer and G.R. Stern, 1986); and,
14) Gravels dispersed by the high stream flows, which included dredge tailings, composed a portion of the suitable spawning gravels each year (Hassler, T.J., W.L. Somer and G.R. Stern, 1986).

Small-Scale Dredging Efficiency and Rates

1) Studies to date have not shown any actual effect on the environment by suction dredging, except for those that are short-term and localized in nature (USACE, 1994);
2) This is an official recognition, by the U. S. Army Corps of Engineers, that below a certain size, the effects of suction dredging are so small and so short-term as to not warrant the regulations being imposed in many cases (USACE, 1994);
3) The U. S. Environmental Protection Agency, has ignored this concept, although numerous studies, including the EPA's own 1999 study of suction dredging, repeatedly and consistently support the Corps finding de minimus effects (USACE, 1994);
4) Four-inch and smaller dredges have inconsequential effects on aquatic resources (USACE, 1994);
5) Reports consistently find no actual impact of consequence on the environment, and so almost always fall back to the position that the potential for impact exists (USACE, 1994);The majority of dredge operations studied did not work long periods or disturb large areas of the streambed (Hassler, T.J., W.L. Somer and G.R. Stern, 1986);
6) Dredging improved permeability and velocity of water in gravel (Lewis, R., 1962);

7) The unmodified dredge moved about 2% of the manufacturer's maximum rating (Griffith, J.S. and D.A. Andrews, 1981);
8) Two hundred of the miners interview, only 57 spent more than 500 hours dredging per season (McCleneghan, K., and R.E. Johnson, 1983);
9) The average time spent dredging was 235 hours per season (McCleneghan, K., and R.E. Johnson, 1983);
10) No cumulative effects were indicated by the water sample data (Huber, C. and D. Blanchet, 1992);
11) Suction dredging and hand tool operations in the active stream channel caused no noticeable impact to water quality (Huber, C. and D. Blanchet, 1992);
12) There were no detectable water quality changes from numerous suction dredge operations located on the same creek (Huber, C. and D. Blanchet, 1992);
13) A 6-inch dredge is appropriate where substrate gravel size is large, but a large aperture may be disruptive in a small channel (Lewis, R., 1962);
14) Dredge holes and piles in the center of the stream are usually gone in one year (Stern, G.R., 1988);
15) Dredge piles along the bank of the creek may linger. This is similar to piles left by historic miners (Stern, G.R., 1988); and,
16) When done properly, legal dredging must be allowed by law and effects are acceptable (USDA, 1997).
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