SEMINAR

Thursday, November 7, 2002 4:30 p.m.
(refreshments at 4:15 p.m.)

366 Hollister Hall

To boat or not to boat? A case study on recreational impacts and conflicts on the Chilkat River, Alaska.

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Environment Seminar Series (CEE 601)
School of Civil and Environmental Engineering, Cornell University

Co-Sponsored by the Center for the Environment

Abstract

The Chilkat River, located near Haines, Alaska is well known for the annual gathering of 3-4000 bald eagles that takes place along its banks in November and December of each year. The Chilkat Bald Eagle Preserve, designated in 1985, seeks to preserve the unique habitat that draws these eagles and the salmon upon which they feed.

At the time of the Preserve's inception, recreational use levels on the river were extremely low, as evidenced by the lack of significant regulations in the Preserve's management plan. Recently, and driven largely by cruise ship passenger tours, use levels have risen to the point where state biologists have become concerned about habitat impacts. One specific concern is whether or not commercial jet-boat wakes impacting the banks of the river are affecting rearing juvenile salmonids.

A field study, conducted in the summer of 2002, made measurements of near-bank wave heights and turbidity. Waves up to 30 cm in height and suspended sediment concentrations up to 40 g/l were observed, suggesting that the hydraulic disturbances associated with the wakes were non-trivial. Crude estimates of near-bank energy dissipation and shear stress suggest that, depending upon channel size, boat wakes have the potential to be the dominant erosive mechanism. Recommendations were developed, which seek to minimize these potential impacts through the use of minimum operating distances and speed restrictions.

A public radio piece on this project can be found at http://www.engr.psu.edu/ce/hydro/hill/research/boat_wake.m3u

Further information on the Environment Seminar Series as well as a list of future speakers can be found at: http://ceeserver.cee.cornell.edu/eac20/cee601/

or contact Prof. Edwin (Todd) Cowen (eac20@cornell.edu).