# Managing Soundscapes in National Parks: an adaptive management approach in Muir Woods National monument, California

Peter Newman, Robert E. Manning, Kurt Fristrup

**Abstract** — Research in national parks has begun to address the issue of human-caused noise and its resource and social impacts. This paper reports the results of a study conducted in the summer of 2007 that tested the efficacy and acceptability of management actions designed to reduce visitor-caused noise The study used an experimental or "adaptive" management" approach designed to test the effectiveness of temporal and spatial zoning to protect natural quiet in Muir Woods National Monument, California, an old growth redwood forest. The adaptive management experiment consisted of two treatments and an associated control. During all three periods, visitor-caused noise was recorded at a fixed location in the park and a visitor survey was conducted. The first treatment tested the effectiveness of a spatial zoning approach by establishing a "quiet zone" in Cathedral Grove through a series of park signs. The second treatment tested the effectiveness of a temporal zoning approach by establishing "quiet days" throughout the park through a series of park signs. The control period included neither of these treatments. Study findings indicate that both the "quiet zone" and "quiet day" treatments were effective in lowering the level of visitor-caused noise in the park as measured during the control period, and that visitors were highly supportive of these management actions.

**Index Terms** — Soundscapes; visitor-caused noise; adaptive management; Muir Woods National Monument; national parks.

**Peter Newman** Assistant Professor, Dave Stack, MS Candidate, Department of Human Dimensions of Natural Resources, Colorado State University, Fort Collins, CO 80521, Email: pnewman@cnr.colostate.edu

**Robert E. Manning**, Professor, Rubenstein School of the Environment, University of Vermont, Burlington, VT

**Kurt Fristrup** Senior Scientist,Natural Sounds Program, U.S. National Park Service, Fort Collins, CO.