

## The Behavioural Effects Of Helicopter Logging On Mountain Goats

STEVE GORDON, Sustainable Resource Management, 7077 Duncan Street, Powell River, B.C.,  
V8A 1W1 Canada

*Abstract:* This two-year study investigates the effects of sustained use of large heavy-lift helicopters on the daily and seasonal behavioural and habitat use patterns of mountain goats (*Oreamnos americanus*) in a remote watershed 60 km NE of the community of Powell River, B.C. Specifically, the study assesses whether the proportion of time goats spend foraging and bedding changes relative to levels of helicopter activity near occupied habitats. Mountain goats are yellow-listed (of Management Concern) in B.C.; the coastal goat ecotype is considered particularly sensitive due to low population densities and reliance on old growth forests for winter shelter and forage. A recent increase in the both industrial and recreational use of helicopters in coastal areas has heightened conservation concerns. Non-invasive observational techniques are used to record behavioural patterns and the effects of helicopter and logging activity on mountain goats. Using 20 – 60X weatherproof spotting scopes, instantaneous scan surveys are performed at 5-minute intervals. Goat behaviour is classified according to 5 non-overlapping behavioural classes. Overt responses to helicopter and falling activity and behaviours of note are also recorded. Results are recorded in field notebooks and the spatial location of goats is recorded on 1:5000 scale maps and air photos. Observation posts have been established in valley bottom and alpine sites. 2 separate herds of mountain goats are observed – a ‘treatment’ herd occupying habitat immediately adjacent to a stand of forest to be helicopter logged with a Boeing 234 “Chinook” helicopter, and a ‘control’ herd subject to no helicopter disturbance. Data collection trips are conducted prior to disturbance, during falling activity, during helicopter logging, and post-disturbance. Over 300 hours of behavioural data was obtained in the 2001 field season. A second field season in 2002 to collect additional behavioural data and assess habitat use patterns in both herds will occur. Data analysis will attempt to determine if the proportion of time goats spend in feeding, not feeding and bedded behavioural classes changes as a function of helicopter activity. The study results will be applicable to development of management guidelines for helicopter activities adjacent to mountain goat habitats in jurisdictions throughout North America and will also be applicable to the management of other ungulate species.