

## Temporal Patterns in *Epirrita autumnata* Dynamics: Parasitoids and Other Possible Factors

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**Abstract** Larvae of the autumnal moth *Epirrita autumnata* (Geometridae), are defoliating different parts of the mountain birch forests in northern Fennoscandia every 9-10 years. Larval densities of *E. autumnata* were monitored during two periods, 1955-1967 and 1984-2003, at Abisko, northern Sweden. Time series analyses of density data indicated that different factors were important in the two periods. The generation rate of change in moth density was fitted in multiple regressions with the population density of the previous year and parasitism rate, as well as other factors, for each period separately and for all years together. Parasitism explained most of the variability in the second monitoring period while winter temperatures were important in the first period. First-order effects and parasitism explained 74% of the variability for all years.