



Figure 29. Dynamics of particular trophic groups at Cedar Creek and the influence of successional vegetation change, N addition, and plant species richness on consumer abundance and diversity.

(A) Based on **E014**. Grasshopper densities, averaged over all 22 fields in the old field chronosequence, fluctuated by an order of magnitude from 1988-1999. These fluctuations are best correlated with warm summers, which occurred in 1988 (drought year) and 1995.

(B) Abundance of deer mice in all 22 old fields of **E014** varied by over an order of magnitude with peak abundance lagging one year behind abundant oak mast crops.

(C) Granivorous rodents (primarily *Peromyscus maniculatus*) decline significantly with field age in **E014**, apparently in response to declines in seed availability associated with the dominance of C4 grasses, which produce much less seed per unit biomass, in later successional fields.