The ecological impact of biomass reduction

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THIRTY-FIVE YEARS OF RESEARCH in temperate native grasslands has identified the ecological effects of biomass accumulation on (mostly mesic) grassland function and diversity. When grasslands remain undisturbed for many years, grasses tend to accumulate lots of dead leaf matter. The rate of accumulation will depend on site productivity, which is tied to grassland type, soil fertility and rainfall. In general, as dead leaf matter accumulates, it shades out the intertussock spaces where much of the animal and plant diversity exists. As a consequence, seedling germination declines – the dead leaf matter acts as a mulch whereas most native plants need open ground to successfully germinate and for initial seedling survival. Native forbs tend to be smothered by biomass and the reduced light results in low growth, ultimately leading to plant death. If dead leaf matter accumulates for long enough (say a decade or more), it has been shown that it will smother out the native grasses themselves, ultimately allowing exotic species to colonise the decaying leaf matter.

NATIVE GRASSLAND WITHOUT BIOMASS REMOVAL