

The effect of increased ground-level habitat complexity on mouse population dynamics

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Abstract

We investigated experimentally the influence of habitat structure on the population dynamics of house mice. Three habitat types were used. In one, dense stands of regenerating cypress pine were felled and left *in situ* to cover at least 40% of experimental plots, providing high complexity at ground level; in another, dense stands of regenerating pine were left intact, providing low complexity at ground level; in the third, open grassland adjacent to dense stands of regenerating pine also provided low complexity at ground level. Mouse populations occurred at higher densities in felled pine plots compared with both the standing pine and grassland plots, consistent with the hypothesis that the presence of increased habitat complexity at ground level reduced the impact of predation. Even though populations responded to the felled pine, they dropped to very low densities over winter, suggesting that the habitat was still marginal for the persistence of mice, probably due to a lack of food. The results are discussed with reference to their implications for the influence that habitat structure may have on the impact of introduced predators on native species.