

## EFFECT OF HABITAT DISTURBANCE AND FOREST FRAGMENTATION ON SORICID COMMUNITIES<sup>TWS</sup>

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In 1992 we initiated a 5-year study on species biodiversity as a function of forest management practices in conjunction with the Forest Service and Plum Creek Timber Company. Twelve forested sites, similar in their stand composition, tree density and size distribution, were chosen in the Swan Valley of westcentral Montana. Of these twelve, four remained unharvested as controls, four were treated using conventional overstory removal practices and four were treated as per New Forestry protocols. For three years, 1994 - 1996, in conjunction with on-going amphibian studies, we collected shrews in pitfall arrays across all plots. Concurrently, various measures of habitat composition were collected at each trap array, specifically percent forb cover, percent woody cover, and mean basal areas of the canopy dominants, lodgepole pine, ponderosa pine, and Douglas-fir. Four species of shrew [pygmy (*S. hoyi*), common (*S. cinereus*), montane (*S. monticolus*), and vagrant (*S. vagrans*) shrews; N = 615 in 70,224 trapnights] composed the soricid community on these sites. Species associations were correlated with habitat characteristics across all sites using both discriminant functional and MANOVA analyses. No treatment by year interactions were seen. Significant decreases in capture of common and pygmy shrews were noted over the 3-year period. One slight, but significant treatment effect was seen; pygmy shrews increased on overstory removal plots. The overall lack in marked treatment effects may be due to the generalist nature of shrew foraging behavior. However, the increase observed in pygmy shrews on overstory removal sites may indicate a greater tolerance to drier habitat conditions.