Species Occurrences of Native Western Gray Squirrels and Invasive Eastern Gray Squirrels on Joint Base Lewis-McChord in Washington State

Abstract

Previous studies have shown that the western gray squirrel prefers dissimilar habitat to eastern gray squirrels and that these species of squirrels have different niches within 0.5 miles of each other and extraordinarily little overlap. Along with somewhat varied diets, the squirrel species can coexist in different gradients within an ecosystem with WGS existing in open oak woodland prairie gradients with specific preference for isolated areas away from urbanization. EGS is found near waterways and will encroach into urbanized areas with the ability to thrive in invasive overgrowth of plants. Within this study these different types of habitats were observed along with existing tree species and vegetation to investigate the niches of WGS versus EGS to gather species counts to consider whether there is an overlap between species. Sites were set up with squirrel hair capturing devices to lure squirrels in to see an exact count of squirrel species present at JBLM. There was a bar graph made that revealed WGS were encountered at five percent of the sample sites in open oak woodland, Ponderosa pine and Douglas fir existing near prairie and EGS were encountered at thirty-five percent of the sample sites near an urbanized area with abundance of Douglas fir and Scotch broom in less open areas revealing that EGS were the most frequently observed species across all ninety-five sites. A google Earth map indicates the variation of vegetation with satellite imagery of where EGS and WGS occupy which also shows them inhabiting some different territory than they have been found in the past. Historically there were data accounts of WGS occurring in the Spanaway marsh area where isolated, open prairies and oak woodland habitats used to be established. WGS counts decreased as they have been replaced by EGS after overgrowth of Scotch broom and urbanization has taken over Spanaway marsh vicinity, but species still do not overlap. Future research should expand the study area into WGS habitat that was not observed within isolated, open prairie, and oak woodland. Other considerations would be to use vegetation mapping to get a further understanding of where the WGS occurs and why along with investigation into predation and possible hybridization with EGS.