
RELATING CLIMATE DATA TO WHITEBARK PINE CONE PRODUCTION IN SOUTH-CENTRAL MONTANA

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Whitebark pine (*Pinus albicaulis*) is a critical species for grizzly (*Ursus arctos*) and black bears (*Ursus americana*) in the Greater Yellowstone Area. Being able to predict the number of cones that will be produced in a year or two would help with the management of these species. There is a strong correlation between cone production and Black Bear harvest. Climatic variables from SNOTEL stations can provide an insight into cone production. If there are not enough growing degree days to start fall cones, there will be no cones produced in year three. Critical parameters that reduce cone production include poor soil moisture during year two and three and number of days with rain during pollination in year two. Cold spring temperatures can also reduce cone production. Within whitebark pine transects, individual trees may produce a different number of cones. These can be related to tree age and/or increased moisture from upslope areas. Cone production from ten Whitebark Pine transects in the Rock Creek-Stillwater-Boulder area of south central Montana observed by Montana Department of Fish, Wildlife and Parks has been compared to climatic data from three NRCS SNOTEL stations in the vicinity. The effects of various parameters on cone production and results of estimating the cone crop will be presented.