2012 Grasshopper Forecast for Montana

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Grasshoppers are common across Montana, especially in the eastern prairie counties where they often damage rangeland and cropland. The U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS, Helena) conducts late-summer grasshoppers surveys of rangeland in Montana. Based on these surveys, grasshopper populations increased dramatically, from one million acres with high numbers in 2006 to 17 million acres in 2009 (areas colored red in the maps below, 15 or more per square yard). Note that the hazard maps report previous year survey results, so the "2007 Hazard Map" reports actual numbers surveyed during August of 2006. This rapid increase triggered regional grasshopper alerts. However, damage was not as severe as expected due to the last two cold and wet spring seasons. The cool weather increased grasshopper mortality and the extra moisture allowed grasses to recover better from feeding damage. However, the 2011 survey (2012 Hazard Map) found that favorable late summer weather allowed the grasshoppers to recover and maintain their 2010 levels, and many egg-laying females were observed in the field. Grasshoppers are adapted to hot dry climates. With so many nymphs hatching out in 2012, a hot and dry spring may mean the grasshopper outlook will again be severe and damage to Montana's rangeland and cropland could be more severe compared to the last two seasons. Natural diseases are a wildcard for 2012 predictions. During prolonged cool weather many developing grasshopper nymphs emerging in April, May and June are killed by a combination of factors stemming from delayed maturation and higher susceptibility to disease. Several lethal fungal diseases of grasshoppers such as *Nosema* and *Metarhizium* spread more easily in moist, overcast conditions. Whether natural grasshopper diseases have increased enough to affect the 2012 populations remains to be seen. Grasshopper scouting will be important in 2012.