

Study Report: Army cutworm (*Euxoa auxiliaris*) moths summering in Great Basin National Park

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Abstract

During their periodic outbreaks, native army cutworms (*Euxoa auxiliaris*) consume seedlings of exotic cheatgrass to produce cheatgrass “die-offs.” The larvae pupate in late spring and emerge as miller moths that follow the blooms of flowering plants to high elevations for the summer. “Millions” of moths were found in Great Basin National Park after larval outbreaks and cheatgrass die-offs in 2014. Understanding *Euxoa auxiliaris* outbreaks and migrations in the Intermountain West will let us better predict cheatgrass die-offs. Predicting die-offs will let us take advantage of these times of reduced competition from cheatgrass to seed desirable species in cheatgrass-invaded areas. Unfortunately, I wasn’t able to visit Great Basin National Park in 2021 to look for army cutworm moths; I plan to return in 2022.

Background

Since 2003, die-offs of exotic cheatgrass (*Bromus tectorum*) have occurred sporadically in low, dry areas of the Intermountain West. During their periodic outbreaks, native army cutworms (*Euxoa auxiliaris*) consume seedlings of cheatgrass and the exotic mustards (Brassicaceae) that often grow in cheatgrass stands to produce the die-offs.

Army cutworms overwinter as larvae and feed at night. Larvae pupate in late spring and emerge as miller moths that follow the bloom of flowering plants to high elevations for the summer. “Millions” of moths were found in Great Basin National Park after larval outbreaks and cheatgrass die-offs in early 2014.

Army cutworm outbreaks seem to occur in the Intermountain West after these events follow each other:

1. a dry winter and summer
2. heavy late summer rain
3. many adult moths return in fall to lay eggs
4. dry weather resumes through winter.

Understanding *Euxoa auxiliaris* outbreaks and migrations in the Intermountain West will let us better predict cheatgrass die-offs. Predicting die-offs will let us take advantage of these times of reduced competition from cheatgrass to seed desirable species in cheatgrass-invaded areas.

This study

Unfortunately, I wasn't able to visit Great Basin National Park in 2021 to look for army cutworm moths; I plan to return in 2022.

Although I didn't find any army cutworms in the intermountain west in early 2021, the larvae damaged crops in the Great Plains during this time. That outbreak produced a bumper crop of miller moths and a flurry of news reports of bothersome moths that followed the migrants to the northern Rockies early this summer.