



Model Invasive Species Control Project: Yellow Starthistle

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Background:

Yellow starthistle (YST) is one of the most serious rangeland weeds in the western U.S. Native to Eurasia, YST has long sharp spines associated with their yellow flower-heads and can grow up to 2 m tall. These invasive plants are highly competitive and typically develop dense, impenetrable stands that displace desirable vegetation in natural areas, rangelands, and along roads. On military installations, YST has a significant negative impact on training exercises. Heavy infestations of YST have prevented effective parachute training and caused “uncontrolled burns” on ranges at Fort Hunter Liggett, CA. For three years, a number of agencies have collaborated on a demonstration project at Fort Hunter Liggett to develop an “Integrated Weed Management Plan for Control of YST.”



Photo by Ken Spencer

Large infestations of yellow starthistle prevent parachute training on Fort Hunter Liggett.

Objective:

The overall purpose of this project is to provide Fort Hunter Liggett with best management practices for YST to sustain training and readiness on the installation. These best management practices will also provide templates for habitat specific management practices for other land managers who have YST infestations. The project’s final product will be a “users guide” to help design and administer cost-effective programs to manage yellow star thistle and related invasive weed species on military installations. The Legacy Program, Fort Hunter Liggett, and the U.S. Army Environmental Center have funded this effort.

Summary of Approach:

This research has focused on an integrated application of control measures to various habitat types at Fort Hunter Liggett. The integrated weed management options for YST applied during this project include mowing, grazing, burning, biological control, chemical control, and revegetation. Combinations of these strategies were evaluated for possible use on several different habitats on Fort Hunter Liggett including open grasslands disturbed annually by military training, grazing, agriculture, etc.; grasslands surrounded by oaks; grasslands supporting rare plant populations; vernal pool systems; and riparian corridors.

Benefit:

The results of this research will provide scientific and administrative habitat management plans to design and execute long-term, cost-effective strategies to reduce impacts of YST effectively as measured by military readiness and ecological criteria.

Accomplishments:

This effort received its final year of funding in FY 2003. Results to date are significant, but vary depending on habitat type. For grasslands and grassland/oak habitats, a combination of burning, followed by treatment with herbicide, and use of 5 insect biological control agents is providing significant control of YST (> than 94%). The U.S. Fish and Wildlife Service prohibits the use of herbicides in study area grassland habitats that support threatened and endangered species. In these areas, the combination of burning and biological control agents has reduced YST by over 37%. An integrated approach in vernal pool systems and riparian corridors was abandoned due to concerns over threatened and endangered species. In these areas, biological control agents may be the only or primary treatment option.

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