

# SUCCESS

REGIONS 1 & 4, STATE AND PRIVATE FORESTRY

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*Containers developed through this project are called “bug bombs”, and resemble pint or quart size ice cream cartons that hold 3,000 to 5,000 *Apthona* beetles.*

*Using a helicopter to release the beetles in the bug bomb containers has proven to be an efficient and economical method of releasing hundreds of thousands of bugs over several hundred acres in just a few hours.*

*Approximately a million bugs a year are collected at the Shake Creek site to be used in the effort reduce leafy spurge or in research projects on biological control*

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## Using Helicopters and Bugs to Control Leafy Spurge in Idaho

### **“Bug Bombs” Proving Effective and Efficient**

*An Idaho project to control a rapidly advancing infestation of leafy spurge has many agencies and organizations coming together to use biocontrol agents—bugs—as a management tool in combating noxious weed infestations throughout the state.*

The Shake Creek Project, 5 miles east of Featherville, Idaho, began as a collaboration among three branches of the Forest Service—the Forest Health Protection’s Boise Field Office, the Sawtooth National Forest, and the Rocky Mountain Research Station.

Over the 10-plus years the project has been underway, many other entities including the Bureau of Land Management, State of Idaho, County weed programs, cooperative weed management areas, and even southern Idaho school children have become involved in some aspect of the project.

In the 1990s, the Fairfield Ranger District of the Sawtooth National Forest began an intensive biocontrol program to help control the leafy spurge spreading into the lower half of the South Fork of the Boise River corridor. Leafy spurge spreads aggressively and can greatly reduce the carrying capacity of an area for wildlife such as deer, elk, and moose. Most of the infested sites are in remote and hard to access locations.

Forest Service staff wanted to determine if helicopters could be an effective means

of distributing biocontrol agents—*Apthona* beetles—to those remote sites to control the leafy spurge.



Same hillside, before (above) and 9 years after (below), *Apthona* release

Each year *Apthona* beetles are collected in mid-July for release. Timing is critical when releasing the beetles. After being collected, they need to be kept cold and quickly released.



Bug Crew members monitoring *Aphthona* beetles

The less time beetles spend in storage, the higher the rate of survival. Past releases of biocontrol agents at Shake Creek were done via foot or horseback, which proved to be time and labor intensive. It could take a day to reach a remote release site and many beetles did not survive the journey.

An important part of the *Shake Creek Project* was funded through a grant from the Forest Health Protection special technology development program.

The objective of the grant was to come up with an aerial release container that could transport and protect large numbers of bugs from collection through helicopter transit and release.

Not only did the containers need to be easy to handle, they had to effectively release the bugs once the containers reached land, and mark the site of the release for monitoring..

The containers developed are called "bug bombs", which resemble pint- or quart-sized ice cream cartons and typically hold 3,000 to 5,000 *Aphthona* beetles.

Monitoring results indicate using a helicopter to release the beetles in the bug bomb containers has proven to be an efficient and economical method of releasing hundreds of thousands of bugs over several hundred acres in just a few hours. This bug bombing technique has been used in other locations to efficiently distribute biocontrol agents to remote sites.

Summer field crews from local junior and high schools were used to establish the *Southern Idaho Biological Control Program*, known as "The Bug Crew". Those student crews are used to help collect and monitor *Aphthona* beetles at the Shake Creek site for redistribution.

Approximately a million bugs a year are collected at the Shake Creek site to be used in the effort to reduce leafy spurge or in research projects on biological control.

The booming population of *Aphthona* beetles at Shake Creek has led it to become a major source of biocontrol agents, supplying Federal, State, and County agencies, cooperative weed management areas, and researchers who need a reliable source where they can collect beetles for redistribution across the West.