

Profile from the Field

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Minnesota Producer Experiments with Hogs to Control Buckthorn

Project Title: Control of Buckthorn with Hogs,
Cutting Feed Costs with Food Waste

Coordinator: Nancy Lunzer

Location: Ogilvie, MN

SARE Grant: \$5,979

Duration: 2010-2012

To read the full project report, go to
www.sare.org/projects and search for
project number FNC10-838.

Originally introduced by European settlers who liked the fast growth and thick hedges it produced, buckthorn is an exotic invasive species that forms an impenetrable understory that can cause long-term decline of woodland and wetland areas by competing with native tree seedlings and plants. As a result, both common and glossy buckthorn have been declared noxious weeds by the Minnesota Department of Agriculture.

Buckthorn re-sprouts from the buds at the base of stems if it's not cut close enough to the ground. Effective treatment requires either uprooting the plant, or cutting it and then treating the stumps with chemicals like glyphosate.

Minnesota producer, Nancy Lunzer, found herself struggling as she compared treatment options for the buckthorn on her 72.5-acre ranch. She has 34 acres of hardwood forest, 26 acres of pastureland, and 12.5 acres of cropland. She wanted to get rid of the buckthorn without destroying her natural windbreak and without leaching chemicals and silt into area wetlands.



With SARE support, Nancy Lunzer used hogs to help control the buckthorn on her Minnesota ranch. The results can be seen above, before (left) and after (right).
Photos by Jean Andreasen.

“Costs for controlling buckthorn in our area typically run \$170 to \$250/acre for the initial mechanical removal of a moderate buckthorn understory with an additional estimated cost of \$150/acre herbicide treatment (if landowner applies it) and \$300 if contracted,” Lunzer explained. “Plus, it would need to be treated annually for at least 4 years until the seed bank was depleted.”

Lunzer said the traditional methods of controlling buckthorn were not conducive to her land, which is home to seven species

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of reptiles and amphibians, 10 species of mammals, and 47 species of birds. The entire area of buckthorn on her property drains into wetlands, so chemical treatments were unappealing. Clear-cutting the area was undesirable to her because the mature trees provide a valuable windbreak.

Lunzer tried grazing goats on the buckthorn, but found they were not able to adequately control the buckthorn when they grazed it.

Then, in 2010, Lunzer applied for an NCR-SARE Farmer Rancher grant and was awarded \$5,979 to determine whether Berkshire hogs could clear a small area of buckthorn. Working with Tony Miller, a forester with the MN Department of Natural Resources, Lunzer devised a plan using Berkshire hogs the first year, and then Duroc/Berkshire pigs the second and third years. Six hogs were moved into a series of small enclosed areas, and partitioned with temporary electric fence. In addition to forage, the hogs were supplemented with corn and soybean meal and food waste.

“The hogs worked day and night rooting up vegetation in search of grubs, earthworms, roots, mushrooms, acorns, and butternuts,” said Lunzer. “They turned the top 6-8 inches of soil, digging out stumps, rocks, and roots; gleaning anything edible from the forest floor. They trampled the vegetation breaking it up under foot and driving it into the soil.”

According to Lunzer, the pigs cleared 2.25 acres of buckthorn in 2011. They worked the ground around the large trees and boulders without disturbing deep-rooted tree species

and without compacting the soil. Once the buckthorn was sufficiently removed, she removed the pigs, and the area was planted to shade tolerant grasses. Once the grasses were established, Lunzer followed the pigs with sheep during subsequent years.

“The most impressive result for this project was the ability to eradicate buckthorn from many of the most highly infested areas in the forest,” said Lunzer. “Those worthless areas were revived into pastures for grazing sheep. The buckthorn was removed and doesn’t seem to be making a comeback.”



According to Nancy Lunzer, hogs turned the top 6-8 inches of soil on her ranch, helping to eradicate buckthorn from infested areas. Photo by Nancy Lunzer.

Tony Miller, was pleased to see that the seed bank was depleted in the soil as evidenced by little or no buckthorn regeneration following the treatment.

“Since there doesn’t seem to be much hope on the horizon for a biological control, and considering the expense and effort required for chemical/mechanical control or the use of prescribed fire, the use of livestock definitely provides a promising alternative in some cases,” said Miller.

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