SRNL assesses bamboo crop

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Many people who grow bamboo in their yards soon regret it, and spend the rest of their days trying to kill it off. The U.S. Department of Energy's Savannah River National Laboratory (SRNL), however, is glad to have a bamboo nursery.

These are the kinds of bamboo that can be troublesome to property owners—the kinds with runners—but that feature is exactly what makes them possibly valuable to a place like the Savannah River Site.

The reason is the remediation of waste sites, such as old settling basins or waste disposal areas. A common approach includes capping such sites to prevent rain from seeping through the waste, potentially spreading contamination.

"We are looking at numerous kinds of vegetation to plant on closure caps," said Dr. Eric Nelson, of SRNL's Environmental Analysis Section. "The vegetation is there to prevent erosion and extract water from the cap. The caps are generally soil with clay and perhaps artificial layers below. Vegetation on a cap has to be quick-growing, shallow-rooted so as not to penetrate the layers, densely rooted, cold hardy, drought tolerant, and able to thrive in full sun. It also needs to be good at preventing invasion of other plants, especially pines. We thought bamboos would have good potential."

Of the thousand or so species of bamboo, SRNL selected two of the smaller species with runners for assessment (*P. bissetii* and *P. rubromarginata*). In 1991, they were planted in a one-acre plot about ten

feet apart.

The next step was ... to ignore them. Dr. Nelson next assessed the nursery 14 years later.

"The bamboo grew in well and there were relatively few other plants that invaded the plots. The bamboo was especially effective in keeping out pines," he said. "We did another assessment late last year with similar results. Bamboo, especially *P. bissetii,* is a good candidate for use on a closure cap."

Dr. Nelson said that a closure cap vegetative cover will require more study than this nursery. "Soils are important and moisture balance and nutrient cycles are also important. We also need to understand more fully the early growth and establishment of the bamboo and its performance in closure cap conditions. But it seems promising at this time, pending further research."

SRS has a number of closure sites with caps now, but in the future there will be many more, including caps over closed waste tanks. Their success is a matter of physical, environmental and regulatory importance. "This nursery has helped us define future research needs and operational issues," Dr. Nelson said.

Provided by Savannah River National Laboratory