

The Forestry Source

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Virginia's Southern Pine Beetle Prevention Program Focuses on the Positive

By Joseph M. Smith

The importance of pine to forestry in the southern United States cannot be understated, and neither can the importance of keeping tabs on the southern pine beetle (*Dendroctonus frontalis*)—the most economically important forest pest native to the South. According to the USDA Forest Service, southern pine beetle (SPB) outbreaks in recent years have resulted in unprecedented forest losses estimated to exceed \$1.5 billion.

The SPB's range extends from New Jersey to Texas, and it attacks all pine species, but it prefers loblolly, shortleaf, Virginia, pond, and pitch pines. Although southern pine beetle outbreaks have declined in recent years, the Forest Service expects significant outbreaks to occur in the next few years, as drought and other environmental stresses continue to weaken host species across the South.

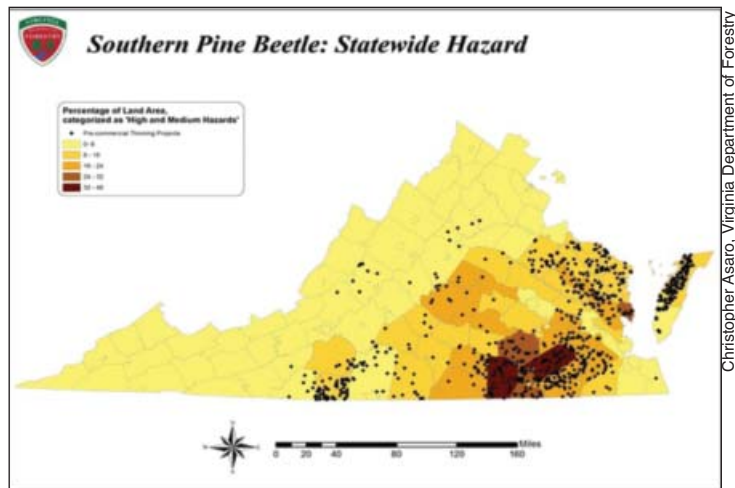
No one can say when those outbreaks will occur, of course, but those responsible for managing the South's forests aren't waiting around to find out. Since 2003, the Forest Service's Office of Forest Health Protection (FHP) has been working with southern states to implement a proactive approach to managing the SPB on federal, state, and private lands. In the past 13 years, FHP has distributed nearly \$30 million to states and national forests to accomplish prevention and restoration activities. Among the states that have received funding is Virginia, which launched its Southern Pine Beetle Prevention Program (SPBPP) in 2004.

"Virginia had a huge period of [SPB] activity in the 1970s, a smaller amount of activity in the 1980s, another burst of activity in the 1990s, and then another outbreak in the 2000s," said Christopher Asaro, forest health specialist with the Virginia Department of Forestry, who gave a presentation about the program at the recent 2013 SAF National Convention. "In terms of southern pine and the piedmont coastal plain, we really haven't had an outbreak affecting more than a few counties since the early 1990s. But all that being said, SPB is still an issue, it's still something you have to pay attention to."

Yet, as Asaro explained, the goal of the SPBPP is improving forest health, not just controlling the beetle.

"What I really like about the program is that it's a prevention program. We often get these big bug programs that focus exclusively on the insect—a single pest. That type of program has its place, but I think we rely on that model a little too much," he said. "With a focus on prevention, I think it gives you a lot more robust opportunities to do a lot of very positive things."

Among those positive things is a cost-share incentive to help landowners cover the cost of pre-commercial thinning (PCT)—the



This map shows the location of VDOF's PCT work (black dots) on an adapted Forest Service SPB hazard map indicating the percentage of medium and high-hazard area within each Virginia county.

program's main focus. According to VDOF materials, the incentive payment to landowners for approved projects is 60 percent of the direct project costs for pre-commercial pine thinning. VDOF services or outside consulting fees are not considered part of the project costs.

For PCT projects to qualify, they must be at least five acres; pine species must be loblolly, shortleaf, longleaf, pond, Virginia, pitch, or white pine; trees must be no more than 15 years old and no more than four inches average diameter at breast height; tree density must be at least 800 stems per acre; post-treatment residual density must be from 300 to 500 stems per acre; and the parcel must not be in public or forest industry ownership, or managed by a Timber Investment Management Organization (TIMO) or Real Estate Investment Trust (REIT).

Based on Forest Inventory and Analysis data, the VDOF estimates that there are about 120,000 acres of overstocked pine stands ripe for PCT. Since 2005, the agency has done about 45,000 acres of PCT in the state—about 4,000–5,000 acres each year, Asaro said. The VDOF's costs average around \$100 to \$125 an acre, with the landowner typically getting about \$60 to \$75 an acre.

More Than Thinning

In addition to PCT, the VDOF has also offered cost-share incentives to nonindustrial private landowners for longleaf pine restoration that includes planting, site prep, and release (either her-

bicide or burning) for up to five years after planting.

“Longleaf pine is prone to be resistant to bark beetles, not to mention a whole host of other insect and disease problems that plague loblolly pine. So, from that standpoint, planting more longleaf is a prevention tactic,” Asaro said.

Of course, to say that the VDOF is merely planting more longleaf is something of an understatement. After identifying a population of about 200 native longleaf pines in the southeast corner of the state, the agency launched a Virginia Longleaf Pine Restoration program that includes cone and seed protection, cone and seed collection, seedling production, research, training, and plantings on state forests.

The landowners planting longleaf on their property as part of the SPBPP are not getting native Virginia seedlings yet, but that will change, said Asaro.

“Once our orchard reaches production, the goal is to start giving those to landowners. Most of the stuff that’s planted now, under our program, is from North Carolina, which is okay, but we’d like to get more Virginia stuff out there.”

The VDOF also instituted a logger incentive program in 2009 that offers a \$2,000 payout to loggers for doing first commercial thinning on smaller tracts between five and 25 acres.

“A lot of states are uncomfortable with the idea of subsidizing first thinnings if they’re commercial, but the logic here is that we’re getting more and more fragmented forests, ownerships of smaller parcels that are in no less need of management,” Asaro said. “Yet, it’s often not worth it for a logger to visit these isolated stands and incur the expense of moving all their equipment and their transportation, so the incentive gives them that \$2,000 to get those types of stands the needed management. It’s been a pretty popular program, and we’ve completed over 3,000 acres since 2009.”

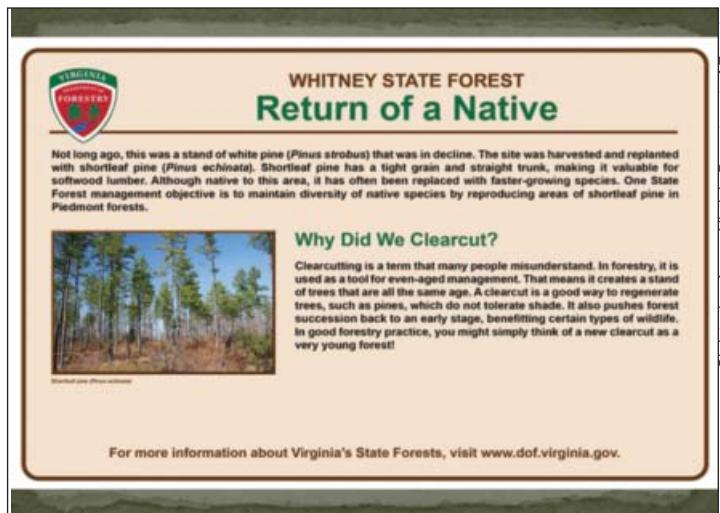
Since 2004, the VDOF has received almost \$4 million in funding for its SPB prevention efforts. At the height of the program in 2010, the agency was spending \$300,000 to \$400,000 per year on landowner cost-share assistance. In more recent years, the agency received about \$250,000, which prompted it to discontinue its longleaf restoration and logger incentive programs in 2013.

“Our emphasis [is] pre-commercial thinning, and we want to maintain that. We have a lot of applications in the docket right now, waiting for completion,” Asaro said. “We’re hopeful we can bring them back when the funding situation improves.”

Not Resting on Their Laurels

Although Asaro and his VDOF colleagues are pleased the SPBPP has led to the improvement of 45,000 acres in the state, they decided to evaluate the program to see if it could be more effective.

“We funded a graduate student at Virginia Tech—Adam



One of the VDOF’s signs designed to educate the public about the agency’s management activities on state land.

Watson and his professors Jay Sullivan and Greg Amacher—to look at the program and to evaluate it by doing a landowner survey to analyze the willingness to participate in the program and develop some economic models to explain why people do or do not sign up for it.”

What the VDOF learned was that most landowners participating in the program were primarily interested in improving the commercial value of their timber. The most common reason landowners chose not to participate was the lack of capital to invest in PCT.

“Cost-sharing has a positive and significant overall effect on a landowner’s willingness to participate and, if you were to rescind the cost-share amount, you could expect 64 percent less commercial thinning,” said Asaro. “There was not sufficient evidence to suggest there would be more willingness to participate if the cost-share rate was increased beyond 60 percent.”

The study, which was published in the journal *Forest Policy and Economics*, also found that landowners are more likely to participate in the cost-share programs when pine is present on adjacent ownerships.

“Targeting areas with abundant, contiguous pine ownership could boost program efficiency—that may be an important thing for us to consider if we do cut back on where we offer PCT due to limited funds,” Asaro said. “We’ll probably choose areas and counties to focus on rather than just keeping it open to the whole state. And if landowners with larger land holdings are more likely to participate, they represent another potential target to boost program efficiency.”

Smith is managing editor of *The Forestry Source*.