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Pacific Southwest Research Station Scientists' Study Contributes To Colorado Senator's Efforts

ALBANY, CA (July 23, 2010) - In 2009, forest land managers collaborated in an area-wide treatment to reduce tree mortality resulting from mountain pine beetle (MPB) attack on approximately 270 acres in the Roaring Fork Valley near Aspen, Colorado, using a combination of pheromone applications and removal of infested brood trees.

Nancy Gillette, Principal Investigator, USDA Forest Service, Pacific Southwest (PSW) Research Station, Albany; William Murray, Project Manager, San Jose State University, San Jose; Maggi Kelly, Geospatial Lead, Geospatial Innovation Facility, University of California, Berkeley; David Wood, Pheromone Lead, Department Environmental Science, Policy, and Management, University of California, Berkeley; Jeff Webster, Forestry Lead, J. Webster Forestry Consulting, Redding, and Sylvia Mori, Statistics Lead, USDA Forest Service, PSW Research Station, Albany, led the California-based team.

At the invitation of the City of Aspen, Pitkin County and the nonprofit group *For The Forest*, Dr. Gillette's team designed the Smuggler Mountain Project to test two verbenone formulations combined with removal of infested brood trees (sanitation) for protecting stands from attack by MPB. Brood tree removal involves infested trees (mass and strip-attacked trees), which were identified and removed using snowmobile and helicopter logging. Nearly all infested trees were removed before beetle flight in July 2009. Brood tree removal has not been conclusively proven to mitigate bark beetle damage, but operational treatments suggest that it effectively lowers attack rates. A related study, "Aerially Applied Verbenone-Releasing Laminated Flakes Protect Pinus Contorta Stands From Attack by Dendroctonus Ponderosae in California and Idaho" can be seen in the journal *Forest Ecology and Management* at: <http://dx.doi.org/10.1016/j.foreco.2008.12.017>. A report from the Smuggler Mt. project can be found at: http://www.fs.fed.us/psw/publications/gillette/2009_gillette_SmugglerMtReport.pdf.

On July 24, 2010, U.S. Senator Mark Udall (Colorado) will join White River Forest Supervisor Scott Fitzwilliams, John Bennett, Executive Director of *For the Forest*, Pitkin County Commissioner

Chair George Newman, and others as they announce a new partnership with the U.S. Forest Service to fight the bark beetle epidemic in Aspen. Senator Udall will applaud the public-private alliance between federal and local groups to fight against the bark beetle outbreak. Udall will also update everyone on his bark beetle bill and other actions he is taking to fight the tiny bark beetles that are eating their way through Colorado's forests.

Dr. Gillette said, "The team was delighted to hear that Senator Udall is partnering with the Forest Service to limit the further spread of the pine bark beetle in the state of Colorado."

Colorado, like many states in the Rocky Mountains, is experiencing record-breaking outbreaks of mountain pine beetle, *Dendroctonus ponderosae*, resulting in unprecedented mortality of lodgepole pine, *Pinus contorta*. It has been predicted that 80-90 percent of the mature lodgepole pines in Colorado will be killed by the end of this outbreak, and similar scenarios are playing out in British Columbia where forest stands that were once carbon sinks have become carbon sources.

Although the scale of these outbreaks is challenging, there is evidence that MPB-caused tree mortality can be reduced at local scales through removal of infested trees and application of beetle anti-aggregation pheromones such as verbenone.

Dr. Gillette added, "Insecticides can have an adverse environmental effects, and the application of verbenone may provide some protection for the dense, old-growth stands required by wildlife."

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