THE UNIVERSITY OF ARIZONA
Cooperative Extension
COLLEGE OF AGRICULTURE AND LIFE SCIENCES

LOGIC MODEL for PROGRAM DEVELOPMENT and ASSESSMENT

Situation	INPUTS	OUTPUTS		OUTCOMES – IMPACT		
		Activities	Participation	Short	Medium	Long Term
Millions of acres of forested lands in the Southwest are threatened by bark beetles and wildland fire. Forest restoration treatments create large quantities of *Ips* host materials, creating ideal conditions for outbreaks. Currently, there is no treatment that has been proven to keep *Ips* species bark beetles out of logging slash.	Staff – 1 research technician, 1 extension specialist, 3 student technicians Staff Time – 712 hours Money - $15,130 Materials – Field supplies Equipment – vehicle and saws Partners – 2 US Forest Service Entomologists	Establish and carry out verbenone slash treatment experiment. Project meetings. Prepare manuscripts for submission to peer reviewed journal and extension bulletin. Transfer knowledge to other forest health protection personnel.	Extension specialist, research technicians Extension specialist, research technicians, US Forest Service Entomologists Extension specialist, research technicians Extension agents, State Forest Health Specialist, and US Forest Service entomologists	Gain an understanding of the utility of this technology. Determine the economic feasibility of treatment. Increase land managers knowledge of potential problems in slash creation.	Overall awareness of slash treatments will be raised. Dramatic rises in *Ips* populations will be avoided through the potential use of verbenone treatments and increased knowledge of the problem.	Restoration treatments will be able to proceed at the necessary rate without acerbating bark beetle populations Increased landowner knowledge of bark beetles will lead to better forest management, with more consideration of forest health issues

Assumptions:

1) The structure of the ponderosa pine forest is overly dense and in light of the long-term drought is in a stressed condition.
2) Bark beetles are a natural disturbance factor affecting forest density.
3) Thinning overly dense stands is increasing in response to state and federal management plans.
4) As thinning increases bark beetle populations will increase without the implementation of improved slash management guidelines.
5) Anti-aggregation pheromone technology has been used as part of IPM programs to reduce the effects of bark beetles in stands at risk.

Environment:

1) The federal government has budgeted millions of dollars for thinning to occur in the WUI in the Southwest.
2) Most regional/global climate change models indicate that the Southwest will be drier and warmer.
3) The public is looking to the public universities and the forest services to find answers for managing bark beetle outbreaks.
4) The University of Arizona Forest Health Program is well positioned to conduct research to solve applied problems.