Bark Beetle Technical Working Group
Research Priorities List for CY2007
(wording updated from original meeting notes
by Cheryl Costello at the request of the BBTWG)

1. Improve methods to predict where, when, and how much bark beetle activity will occur on forest landscape

    a. Evaluate methods for determining the relationship between tree physiology and susceptibility to bark beetle attack, including stress factors and constitutive and induced resistance.

    b. Define methods for predicting the occurrence, rate of spread, size, duration and impact of outbreaks for individual bark beetle species.

    c. Refine methods of evaluating landscape – level susceptibility to bark beetle outbreaks.

    d. Determine the role of climate change in predicting bark beetle outbreaks.

    e. Utilize information from all possible sources to define what constitutes an outbreak.

    f. Integrate all of the above into operational, predictive models for significant bark beetle – host systems.

2. Clarify results and interactions between bark beetle populations, wildfires, and prescribed fire

    a. Define short & long-term ecological relationships associated with bark beetle populations, wildfires and prescribed fire.

    b. Encourage projects addressing National Fire Plan objectives.

    c. Develop tech transfer tools for bark beetle/fire interactions for the general public.

3. Evaluate, quantify, and describe the effects of no action alternative

    a. Quantify post-outbreak conditions on treated versus untreated lands.

    b. Examine differences in species composition, diversity or species shifts as a result of not taking specific management actions.

    c. Evaluate the consequences of bark beetle outbreaks in regards to forest ecological function, e.g. 1990's spruce beetle outbreak in Alaska.

    d. Assess the costs of "do nothing" alternatives.

    e. Document and summarize case histories.

4. Develop additional technologies for using natural attractants and repellents such as pheromones to protect forest resources

    a. Summarize current knowledge regarding effectiveness of semiochemicals.

    b. Develop an appropriate "clearing house" for semiochemical information (webpage, case studies, etc.).

    c. Develop new and improve existing semiochemical technologies.

5. Validate silvicultural techniques to meet various management objectives

    a. Evaluate and document current conditions of previously installed (10+ years) silvicultural treatments to determine risk to bark beetle.

    b. Determine slash-treatment alternatives.

    c. Determine fuels treatments that change hazard ratings for bark beetles.

    d. Assess the effects of fuel reduction treatments, including thinning, on bark beetle populations.

    e. Install demonstration areas where stands are silviculturally manipulated according to established risk rating to geographically refine risk models.

6. Develop additional technologies and strategies for using insecticides to selectively protect priority resource values on forest landscapes

    a. Evaluate insecticide delivery systems such as sprays, electrostatic, or injections.

    b. Determine the effectiveness of insecticides for less studied conifer species.

    c. Determine the effectiveness of using lethal trap trees.

    d. Summarize what is currently known about the effectiveness of insecticides.

7. Facilitate technology transfer, improve communication with land managers, and inform the general public

    a. Strengthen resource education and technology transfer.

    b. Strengthen taxonomy expertise and encourage training sessions to foster identification skills.

    c. Inform land managers and general public of the political/legal ramifications of what we do/don't do and should do/can't do.