



# Keep Your Woods Healthy

## *Help your woods resist pest outbreaks*

In your backyard woods, insects and microorganisms abound, both in number of individuals and number of species. Native insects and microorganisms are key components in many ecological processes, such as nutrient recycling, decomposition, plant succession, natural pest control, and wildlife habitat. A woods devoid of insects and microorganisms would not be healthy; in fact, it would be nonfunctional!

A healthy woods is a functioning ecosystem with young, mature, and dead trees. Key qualities of a healthy woods are high diversity, resiliency to stresses, and sustainable benefits (for example: recreation, wildlife habitat, clean water, and timber).

### **Preventive measures**

Epidemics of native forest insects and pathogens occur as part of natural fluctuations in ecosystems. During these epidemics, tree mortality and growth reduction may be localized or widespread. Some forest management practices may cause more frequent and more severe outbreaks. Such practices include planting a single species, planting a species beyond its natural range, delaying harvest beyond tree maturity, excluding fire, and harvesting only the biggest and best trees. To promote a healthy woods and to prevent pest outbreaks, take steps to ensure diversity and vigor in your backyard woods.

### *Increasing species diversity*

Woods with a mix of tree species are often less susceptible to pest outbreaks than woods with a single species. As tree diversity increases, the diversity of all the associated organisms also increases, which leads to a more complex and stable environment. Therefore, do not retain just one or two tree species and remove the other species when selecting your preferred trees. If your woods has only a few tree species, you can add diversity by planting appropriate species that are currently lacking or by using harvesting techniques that will encourage more species to establish naturally.

### *Increasing age diversity*

A diversity of tree ages reduces the risk of pest outbreaks. By having trees of various ages—young, juvenile, and mature—along with species diversity, the entire woods is less likely to be favorable to pests. As with species diversity, age diversity also increases the complexity and stability of the ecosystem. A natural balance of organisms is more likely to develop as age diversity increases. For example, potential pests of young trees could be regulated by parasites and predators already well established on older trees. Age diversity can be increased by the timing and location of harvests.

### *Increasing stand vigor*

A healthy woods is less susceptible to pest outbreaks and is more resilient if an outbreak does occur. The vigor of your woods is related directly to tree density. When trees are overcrowded, competition for light, water, and nutrients results in lower growth rates for all the trees. These stressed trees are more likely to be attacked by pests, which can lead to pest outbreaks. A vigorous backyard woods with rapidly growing trees is resilient to stresses (drought, flooding, defoliation, and air pollution) and it can withstand these stresses longer and with less impact than one with less vigorous trees. (See the Backyard Woods Tip Sheet on Help Your Preferred Trees Grow for more information.)



This vigorous woods is not overcrowded and has good regeneration.





