

Take a drive along route 165 in western Rhode Island this summer, and you will see swaths of bare tree branches extending from the road edge into the forest. This sight is familiar – route 138, route 101, Richmond, Buck Hill, Moosup Valley, South Kingstown – much of the state has seen widespread defoliation and death of oak forests, causing serious disturbances in these ecosystems.

Disturbances – fires, insect attacks, storm damage – are important parts of forest ecology. Disturbance allows forests to regenerate, and encourages new growth and allows nutrients to recycle. Unfortunately, the causes and effects of disturbances change dramatically with human influence. Human-caused wildfire, invasive species damage, and climatic changes are affecting our forests in ways that the native ecosystems are not able to tolerate as well as the natural disturbances that these forests evolved with over thousands of years.

After mass defoliation from gypsy moth, there are negative effects that everyone should be aware of. In areas with heavy mortality of oak trees, there will be a significant reduction in acorns – an important food source for native wildlife, including both game and non-game birds and mammals. Shortly after the trees die, before new growth has a chance to move into the area, there could be increases in erosion and runoff. This may pollute small streams and other wetlands. Perhaps most alarming, the large amounts of dead wood and denser understories could increase wildfire risk, especially following times of drought and in historically fire-prone regions of the state.

In some areas, the effects of defoliation are catastrophic and options for management can be limited. In many cases, standing dead trees should be taken down as soon as possible to encourage new growth. If the wood cannot be used or sold, it should still be cut down and left close to the soil. Wood on the ground will retain more moisture and decay more quickly. This may appear unattractive at first, but there are some advantages. Decaying logs provide habitat for small mammals, amphibians, and insects that support bird populations. Seedlings and sprouts will still be able to grow up through the dead wood on the ground, and the debris may also help protect new growth from deer browse. If deer are particularly voracious – a possibility that may come with the reduction in acorns – landowners may consider allowing and encouraging as much legal hunting as they are comfortable with on their land, with special attention to taking does. Landowners are also encouraged to keep eyes and ears out for potential funding opportunities or other aid that may become available in the near future from various entities.

Parts of the state with a long history of wildfire are of particular concern. Standing dead trees can act as fuel ladders to the crown of forests, putting live trees at risk during a fire. As these trees weaken and fall, debris on the ground will increase. Though fallen wood will decay faster, it also adds to fuel loads on the ground.

Unfortunately, woody debris from dead trees is not the only wildfire concern. As the understory responds to increased sunlight, vigorous growth will fill in areas where trees have died. These areas of dense vegetation may provide ground-level fuels, and even ladder fuels as the understory grows into the midstory.

Though catastrophic fires are relatively rare in Rhode Island, there are steps that forestland owners and homeowners in forested areas should take to protect their homes and minimize risks to their woods. For forestland owners, it is important to work with your management plan (if you have one) to make sure your forest is healthy. Trails should be well-maintained, to provide access to firefighters and other emergency personnel in the case of a fire. Access to ponds, if present on the property, may also aid firefighters in the case of brush or forest fires.

For homeowners near forests, there are specific precautions recommended by fire prevention programs such as Firewise USA and Firefree™. Many of these precautions are common sense – keeping debris away from the home, cleaning leaves from the eaves, roofs, and gutters of homes and outbuildings, keeping a neatly mowed area around the home and outbuildings, and other simple steps to reduce fuel levels. Visit <https://www.nfpa.org/Public-Education/By-topic/Wildfire/Firewise-USA> for more information on Firewise®