



# Technical Bulletin

Forest Health  
Notes # 41  
Issued: 3/2011

## Risky Business: The National Insect and Disease Risk Map For 2011

Three entities within the U.S.D.A. Forest Service (Forest Health Monitoring, Forest Health Protection, and Forest Health Technology Enterprise Team) periodically create National Insect and Disease Risk Maps. These risk maps are the result of complex computer models that utilize many different variables such as measures of stand density (e.g. Stand Density Index), tree species distributions, pest distributions and rates of spread, drought, and stand age to predict the nationwide potential for forest mortality. The most recent NIDRM was completed in 2006, and can be viewed [here](#).

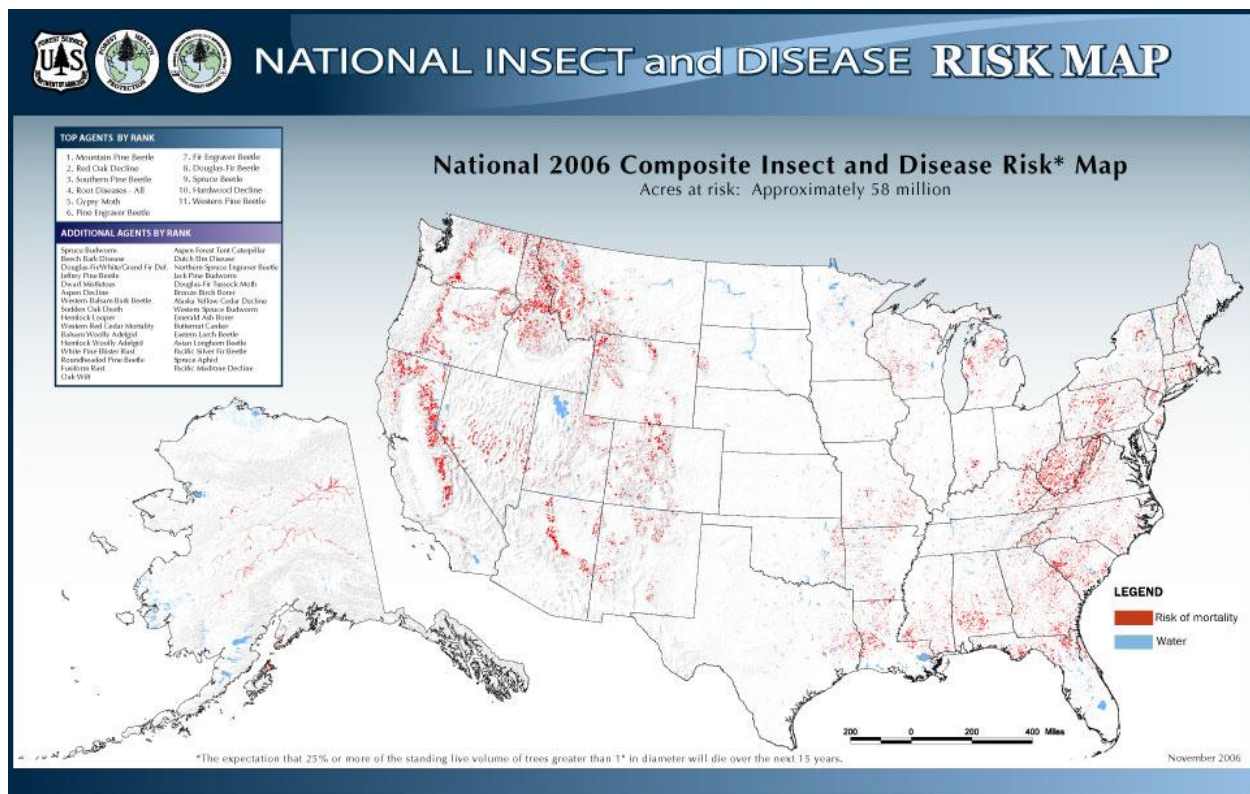


Figure 1: U.S.D.A. Forest Service 2006 National Insect and Disease Risk Map.

The NIDRM only indicates risk if a particular stand is expected to experience 25% or greater mortality of standing live volume of trees greater than 1" in diameter over the next 15 years (Fig. 1). The 2006 NIDRM estimated approximately 58 million acres at risk in the lower 48 States and Alaska. The Southeastern Region accounted for approximately 16 million of the at-risk acres identified by the 2006 NIDRM.

The NIDRM is a composite risk map...within the 2006 NIDRM, 188 different models which attempt to predict how individual tree species will react to various mortality agents were combined into an overall composite risk model. Several of the top insect and disease agents contributing heavily to the overall

composite NIDRM are of great interest to those of us in the Southeast. In particular, red oak decline, southern pine beetle, and various root diseases were the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> most important factors (respectively) in the 2006 NIDRM (Fig. 2). These potential threats (among many others) have dramatic consequences for Southeastern forests, and the NIDRM is an attempt to help steer legislation, management, monitoring, and research relating to forest health issues.

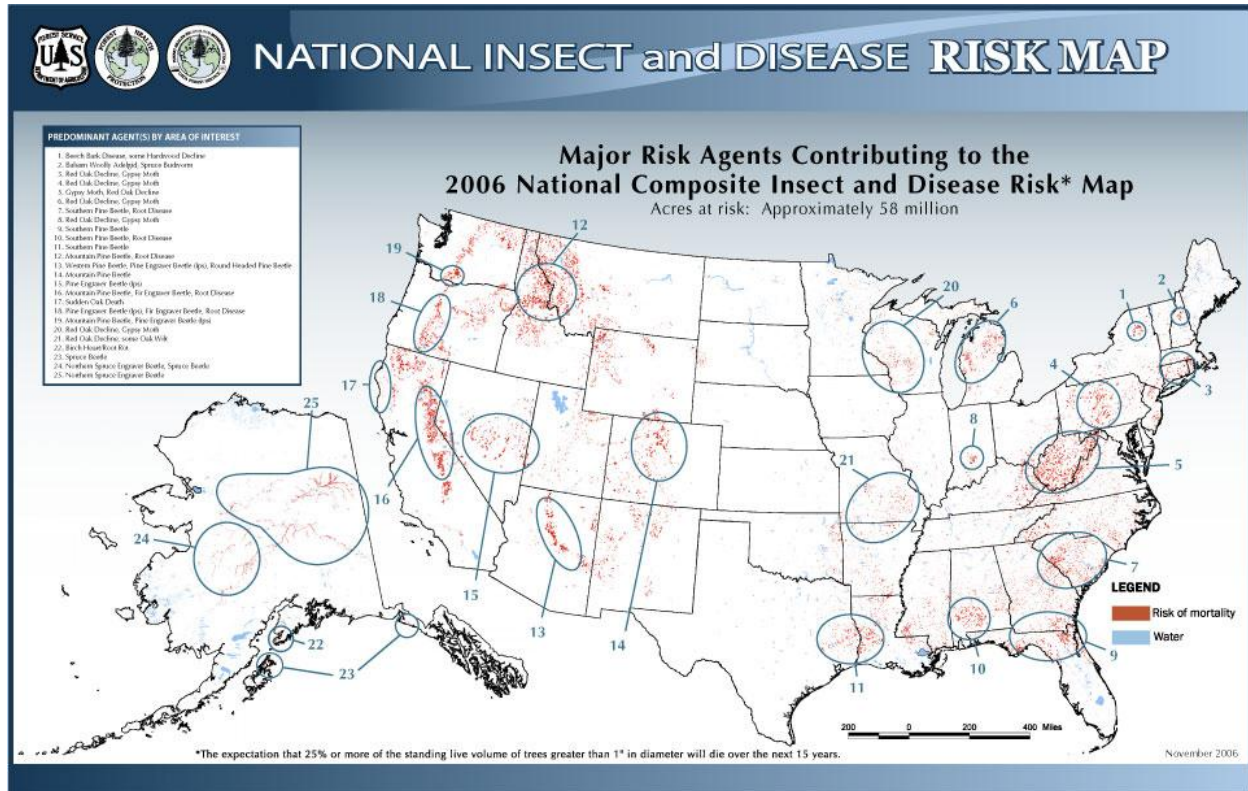


Figure 2: Major risk agents contributing to the U.S.D.A. Forest Service 2006 National Insect and Disease Risk Map.

A new iteration of the NIDRM is currently under development. I recently attended a NIDRM workshop with approximately 70 other forest health experts from multiple State, Federal, and Academic institutions from throughout the U.S.A. Our goal was to collaboratively evaluate the logic behind the modeling processes for each of the mortality agents of concern. Many agents of immediate or potential concern for the Southeastern U.S.A. will be included in the new model, such as southern pine beetle, oak decline, emerald ash borer, and laurel wilt disease. The new NIDRM should be finished and available during late 2011 or early 2012.

The Mississippi Forestry Commission, Forest Health Program will continue to monitor the development of the 2011 NIDRM over the coming months, and assist where necessary to help ensure that the NIDRM predictions for Mississippi are as reasonable as possible. When the new iteration is available, we will post an article detailing its findings and their implications for Mississippi Forestry.

If you are concerned that your timber is indicated as an at-risk (i.e. red areas in Fig. 1) area by the NIDRM, don't panic. The NIDRM is somewhat of a "worst-case scenario", because it operates under the assumption of what might happen if no forest management practices were carried out during the model's 15 year predictive range. One of the most important driving factors for most pest risk is stand

density (especially for southern pine beetle, which is historically the most destructive forest pest of the Southeast). Much of the risk represented in the NIDRM can be lessened through proper forest management practices, such as stand thinning. Additionally, any Stakeholders concerned about the NIDRM's risk predictions for Mississippi should contact their State and Federal representatives and express their support for Federal (e.g. U.S.D.A. Forest Service), State (e.g. Mississippi Forestry Commission), and Academic (Mississippi Agriculture and Forestry Experiment Station, MSU Extension Service, etc...) programs that are designed to promote forest health.

For more information, contact your Mississippi Forestry Commission Local Office or Dr. John J. Riggins ([johnriggins@gmail.com](mailto:johnriggins@gmail.com)). For more information on the Mississippi Forestry Commission Forest Health Program, contact:

Randy Chapin  
Forest Health Program Coordinator and District Forester, Southwest MS  
P.O. Box 749  
515 County Farm Lane NE  
Brookhaven, MS 39602-0749  
601-833-6621  
[rchapin@mfc.state.us](mailto:rchapin@mfc.state.us)

