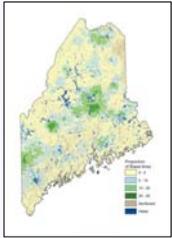
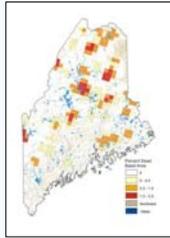


# Beech Mortality and Drought In Maine



Distribution of Beech



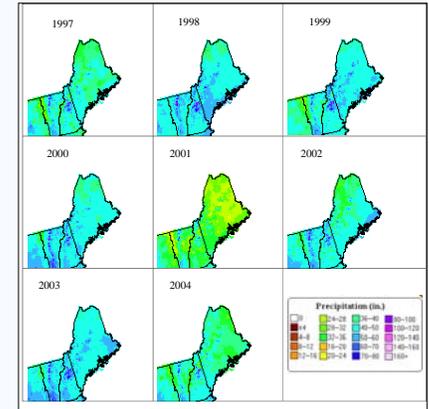
Beech Mortality

The FIA plots in Maine have shown an increase in beech (*Fagus grandifolia*) mortality from 0.9% between 1982-95 to 3.3% between 1995-2002. As a result of the recent surge in mortality, the net or residual growth of beech showed a decrease from +2.1% to -0.37%. This project will assess the cause of this development. The above maps are based on the 1995-2003 Maine inventories, and are in press (McWilliams et al. In Press. Forests of Maine. USDA Forest Service, Forest Inventory and Analysis, Newtown Square, PA)

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Annual precipitation in Maine from 1997-2004. Precipitation was half of normal in 2001, and the driest areas correspond to areas with high beech mortality.



Beech mortality in a hardwood forest of northern Maine, September 2004.



Dieing trees with yellow leaves develop dark "tar" spots. Beech scale is not prevalent.



← Recently killed trees have their bark on the lower stem covered with perithecia of *Nectria*.



Our project will investigate the relationship between drought stress, shallow rooting depth, *Nectria* fungus, and beech mortality by 1) improving detection of drought conditions through increasing the weather database, 2) using dendrochronology over the region to evaluate the relationship between drought and the onset of tree dieback and mortality, and 3) relating severity of mortality to shallow rooting depths and bark colonization by the *Nectria* fungus.