

Residual Tree Response to Tanoak Decline Due to *Phytophthora ramorum*.

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Quantifying individual tree response to disturbance events using tree ring analysis occupies an important sector of forest research. However, such studies have seldom looked specifically at the effect of an exotic pest. In California, tanoak (*Lithocarpus densiflorus*) mortality has been unusually high in recent years due to infection by *Phytophthora ramorum*, an exotic pathogen. This research examined the response of residual trees in redwood/tanoak forest stands to tanoak mortality. Study sites were located in redwood/tanoak forests currently infected with the pathogen within the Marin Municipal Watershed District, Marin County, while uninfected sites with comparable forest age and species composition were located within Jackson State Demonstration Forest, Mendocino County. Use of stand reconstruction methodology may reveal "release" patterns in tree rings post-infection, increases in crown size, or detectable increases in height growth. Additionally, this work may yield information regarding time required for individual tree and stand level response to unprecedented disturbance events such as sudden oak death. Results can then be applied to predictions of changes in stand dynamics through time and direct applications in forest restoration.