Quantifying and partitioning uncertainty in forecasts of Sudden Oak Death infection

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Understanding the dynamics of uncertainty in process-based models and forecasts of Sudden Oak Death (SOD) infection can improve forecast accuracy and informs better management strategies that account for uncertainties. Partitioning uncertainty to its sources reveals valuable avenues for building better forecasts, as knowing the dominant sources of uncertainty in a forecast can help guide data collection and other model improvements. Process-based models such as the Pest or Pathogen Spread model (PoPS) allows for detailed analysis of uncertainties and the partitioning of forecast uncertainty to its sources. Using two different methods of uncertainty analysis, uncertainty in PoPS predictions of SOD infection are quantified and partitioned to their sources. Preliminary results show that process and parameter uncertainty are responsible for a majority of the uncertainty in forecasted SOD infections.