

FLAMMABILITY OF 34 NORTH AMERICAN OAKS

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Oaks and other members of the Fagaceae are widely noted for their relationships with wildland fire. These vegetation-fire feedbacks result in adaptive traits related to local fire regimes over evolutionary time. A primary adaptation in trees is the flammability of their senesced litter, which is a primary fuel sustaining surface fires in woodlands and forests globally. We coalesced previously disparate flammability data on 34 North American oaks and allies using identical laboratory methods. We used multivariate analyses to evaluate dimensions of flammability for the different oak species and discriminate similar clusters. Our analyses revealed that North American oaks span wide gradients in flammability, with some species approximating the most flammable species on the continent (*Castanea dentata*, *Quercus laevis*, *Q. kelloggii*, and *Q. garryana*, among others), several were intermediates, and some had poor flammability (evergreen oaks *Q. virginiana*, *Q. geminata*, *Q. durata*, and *Q. vaccinifolia*, among others). Additionally, we show some preliminary results of combining flammability data with bark data for a subset of these species. Additional research on other North American oaks as well as including other fire-adapted traits will offer greater clarity for how oaks have evolved with contrasting fire regimes and how these species may fare in future regimes.

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