



FHTET

Forest Health Technology Enterprise Team

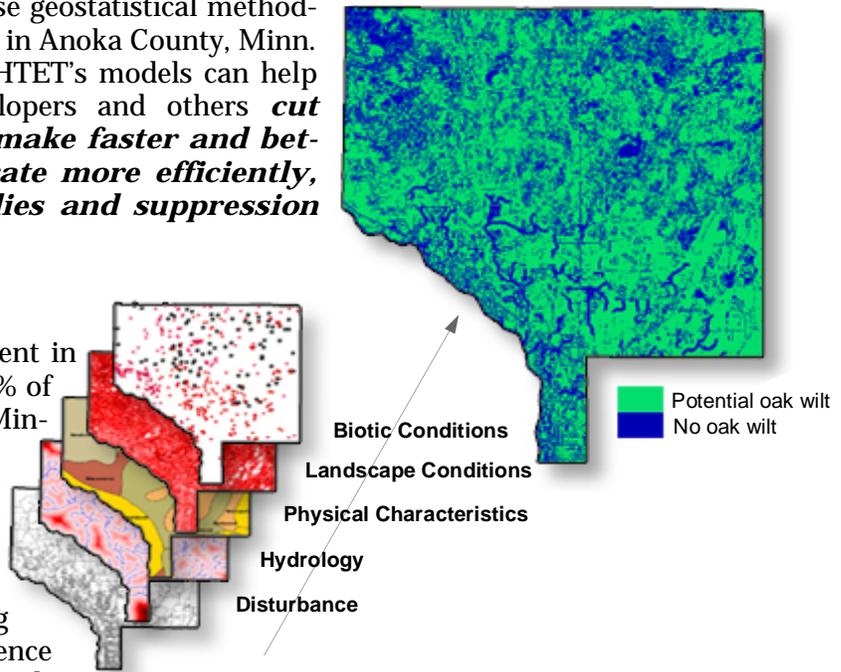
GEOSTATISTICS

PROVIDING TECHNOLOGY FOR FOREST HEALTH PROTECTION

FHTET has developed a way to use geostatistical methodologies to model potential oak wilt in Anoka County, Minn. With an accuracy rate of 88%, FHTET's models can help city planners, landowners, developers and others **cut costs, conserve oak forests, make faster and better-informed decisions, operate more efficiently, and prioritize oak wilt studies and suppression activities more effectively.**

Background:

Oak wilt, a fungal disease, is present in the oak forests which comprise 17% of Anoka County's land area. The Minnesota Department of Natural Resources projects that at its current rate of growth, oak wilt presence will double in Anoka County by 2008. Human development activity is increasing within the county; anecdotal evidence indicates there may be a spatial relationship between urban development and forest decline due to oak wilt.



Geostatistics offers a way to describe the spatial continuity that is an essential feature of many natural phenomena, and provides adaptations of classical regression techniques to take advantage of this continuity.

(Isaacs & Srivastasa, An Introduction to Applied Geostatistics, 1989)

What FHTET has learned:

- The model successfully predicts oak wilt presence across the county.
- Oak wilt will grow 19% faster among urban oaks than non-urban oaks.
- 38% of forested area previously thought to be oak-wilt susceptible is in fact not susceptible; as such, the county need not allocate capital and resources to study or treat these acres.

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