

Continuing Project Update

Assessing and mapping regional variation in potential site carrying capacity

CAFS 19.76

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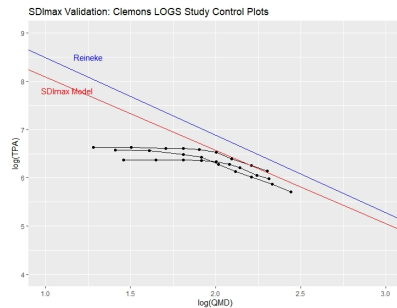
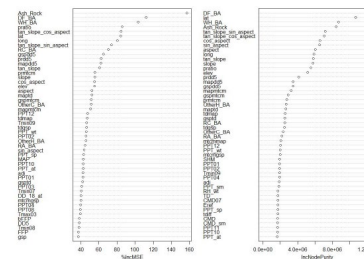
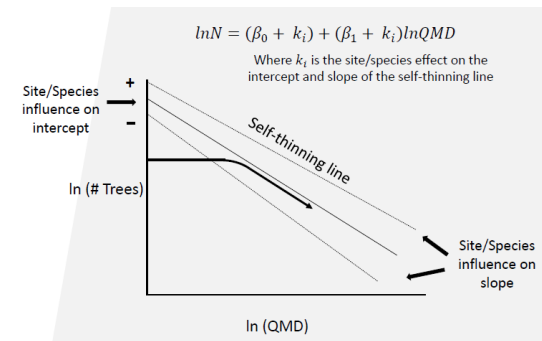
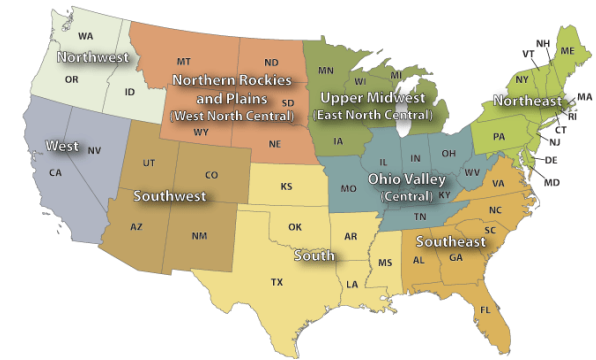
Project Overview

National x Regional SDImax Focus:

- Northwest, West, Southwest, Northern Rockies, South, Southeast, Northeast, Upper Midwest, Ohio Valley
- Species Focus:
 - Commercially important conifer/hardwood species by region
- Assess Site x Species x Silviculture Effect

Statistical Modeling + Validation:

- Variable Selection:
 - Machine learning with multivariate analysis
- Frontier Fitting
 - Quantile Mixed Models
 - Stochastic Frontier Regression.
- Validation with Repeated Measure studies



- For a more complete overview please review the CAFS June and December 2020 updates
- This presentation will focus on project update and path forward



- Project faced headwinds in 2020.....
 - Covid shutdowns delayed data acquisition and processing
 - Identified post-docs faced significant personal work-life challenges – no longer at the Uofl
 - Uofl data sharing agreement with FIA facing legal hurdles
 - Controlled Unclassified Information
 - Data transfer at the mercy of small shops and overtasked individuals



- Resolution
- Despite internal workloads, significant incoming data contribution by Hancock, PotlatchDeltic, PMRC, CRSF, SMC, FIA
 - Thank you to David Wilkinson, Dylan Whitaker, Cristian, Aaron, Jason Cross, Justin Holgerson
- In hand by late June, mid July
 - Not too late to contribute data – more is better!
- Uofl and FIA nearing agreement on CUI terminology in DSP for unfuzzed plot locations
- Looking at various options for processing/analyzing data
 - Temp hire Ryan Heiderman, work remotely 10 hrs/wk
 - National search for a post-doc
 - Hire an analytical savvy, graduated MS



- Project addition
- Upon reviewing incoming data, we will be able to assess silvicultural treatment effects on SDImax
 - Extensive stand treatment records in several collaborator datasets will enable us to include covariates for treatment in models



Update and Timeline

- Northwest SDImax models complete for Douglas-fir, Western Hemlock, Ponderosa Pine, Lodgepole Pine, Western Larch, Grand Fir
- National data acquisition slow, but incoming
 - Standardization and QA/QC by late summer/early fall 2021
- Resolve personnel hiring by late summer 2021
- Regional modeling begins fall 2021
- Regional Site x Species x *Silviculture* SDImax model rollout throughout 2022



- CAFS MS Intern – Logan Wimme
 - Utilizing UAV SfM for pre-sale inventory plot stratification
 - Hypothesis: UAS photogrammetry derived point cloud metrics improve plot placement and provide more robust volume/product estimates relative to traditional inventory sampling
 - Co-op internship with WA DNR and Landvest
 - Project proposal presentation late June at Western Mens
 - Drone flights to occur summer 2021 across eastern and western DNR forest stands

