Modeling Outyear Treatments for Large-Scale Landscape Restoration in FSVeg Spatial Data Analyzer

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Overview:

- FSVEG Spatial Data Analyzer is an effective tool for modeling outyear treatment effects across large-scale project areas.
- Imputation of Common Stand Exam (CSE) data allows for "wall to wall" modeling of treatment effects across large scale planning areas, without collecting more data.
- Users should thoughtfully develop their modeled treatments and alternatives and carefully select their temporal settings and output metrics based on the nature of the project under analysis.

Summary:

Effects analyses are an important requirement in federal land management. However, requirements are vague, so specialists must determine how to represent the effects of their treatments. FSVeg Spatial Data Analyzer is an effective tool in completing effects analyses for large-scale landscape restoration projects. The model, which imputes Common Stand Exam (CSE) data, allows users to model FVS treatments, analyze alternatives, and visualize treatment effects for every stand in a project area. In order to model treatment effects in FSVeg Spatial Data Analyzer, one must determine how to group treatments (prescriptions), apply appropriate treatments to represent the proposed action, establish temporal settings, identify output metrics to adequately describe changes to the forest vegetation resource, and identify alternatives. FSVeg Spatial Data Analyzer was used to model treatment effects on the forest vegetation resource within the Green Ridge Landscape Restoration Project Area on the Sisters Ranger District of the Deschutes National Forest. The process of modeling the effects of that proposed project and the associated challenges are discussed.

Key Concepts for FVS Users:

- Due to the spatial extent of the project area under analysis, an accelerated timeline, and the complex nature of the proposed treatment treatments, the modeled treatments were simplified from the prescriptions and the proposed action.
- Users should be cognizant of the establishment and regeneration parameters in any given variant, as that has a measurable effect on the model's outputs over an extended timeframe.

Management Applications/Future Directions:

- If utilized by planning silviculturists, FSVeg Spatial Data Analyzer has the potential to expedite forest vegetation effects analyses required for large-scale landscape restoration project areas and provide more comprehensive predictions across large planning areas.
- Forest Service planning staff would benefit from the development of a standard methodology for modeling treatments effects to improve clarity of expectations and expedite the process.
- Software and Versions Used:
  - FSVeg Spatial Data Analyzer
    - Product Version 3.9 – 3.15
    - Imputation Software yaImpute (SORNEC Version 1/8/2018)
  - Forest Vegetation Simulator
    - SORNEC (South Central Oregon and Southeastern California) Variant
    - Executable version 9/30/2021
- Project start date was 2/20/2019