



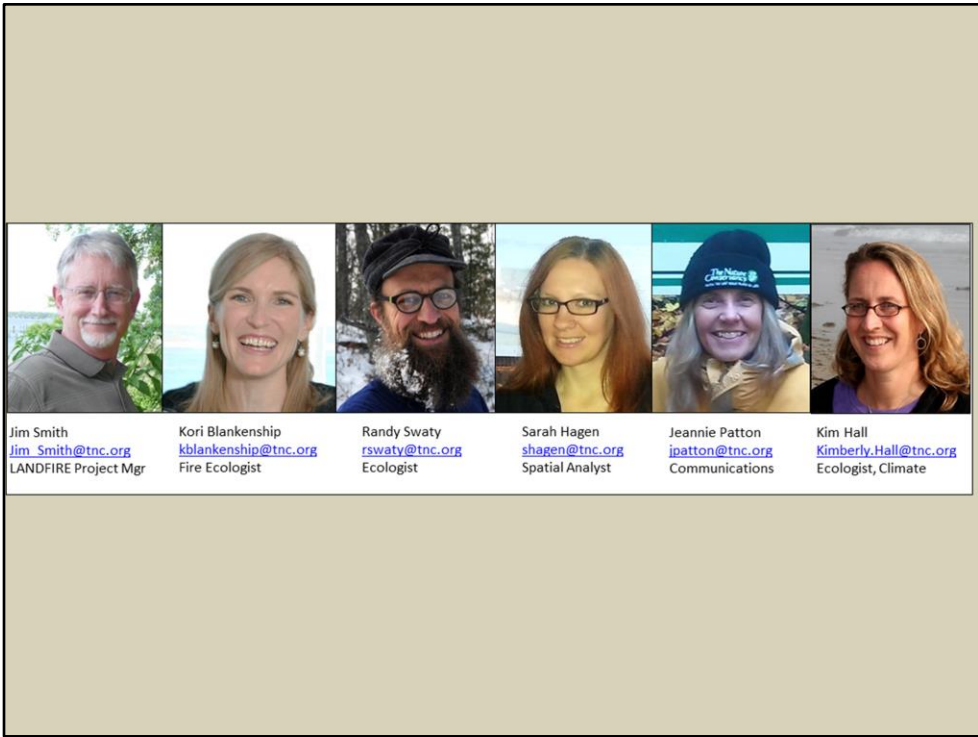
Biophysical Settings Review in the Pacific Northwest

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Presented to

Northwest Fire Science Consortium
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*LANDFIRE's mission is to provide agency leaders and managers with a common
"all-lands" data set of vegetation and wildland fire/fuels information
for strategic fire and resource management planning and analysis.*



- partner on LANDFIRE
- education, outreach, bps models

Today's Agenda



BpS Models 101

Using the BpS Models

Improving the BpS Models

Take Home Message

BpS models are important because they:

- Help us to understand complex ecological processes and relationships
- Provide a framework for exploring management actions

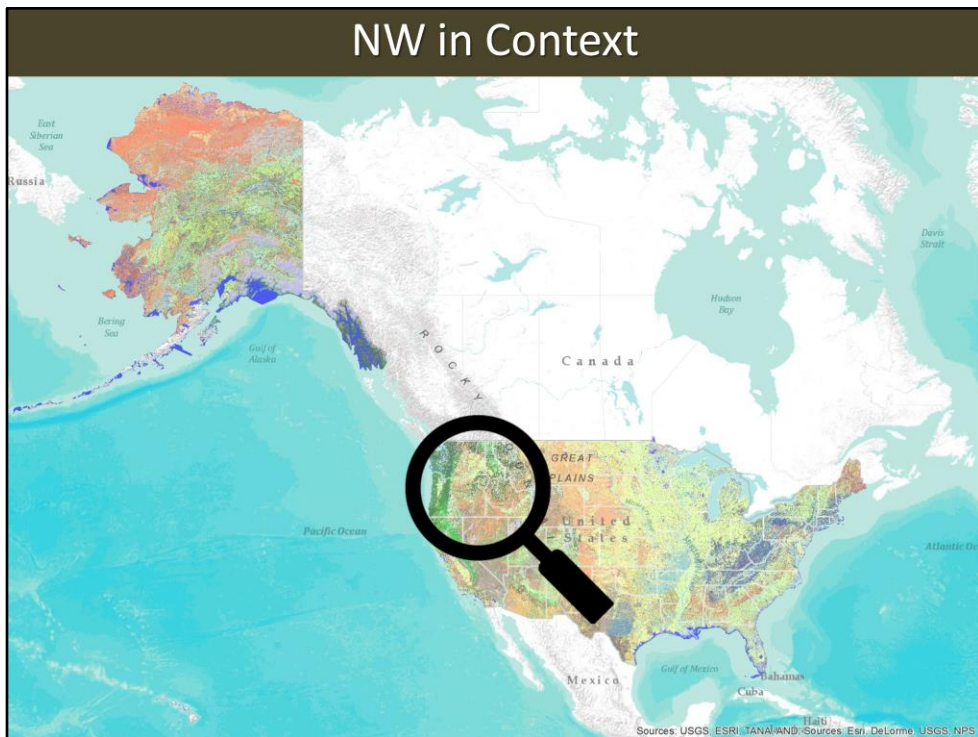


-focus on disturbance and succession dynamics

-help us understand complex ecological processes and relationships

-management, scenario testing, analyzing affects of alternative approaches to mgmt

-looking at restoration opportunities



- LANDFIRE not the only data
 - NW is data rich
- Other STSM efforts: ILAP, FS NW research station, FS Eastside restoration strategy, Interior Columbia Basin
- LANDFIRE's role:
 - Coarser resolution – geography and detail in the model
 - Easier to map, links well to FRCC
 - Provide reference conditions (e.g. ILAP models do not)
 - All lands, forest and rangelands
 - Link to spatial data
- recognize that LF is not the only player in the data biz; we hope to educate about appropriate use so users can make informed decisions and choose the best data for their specific needs

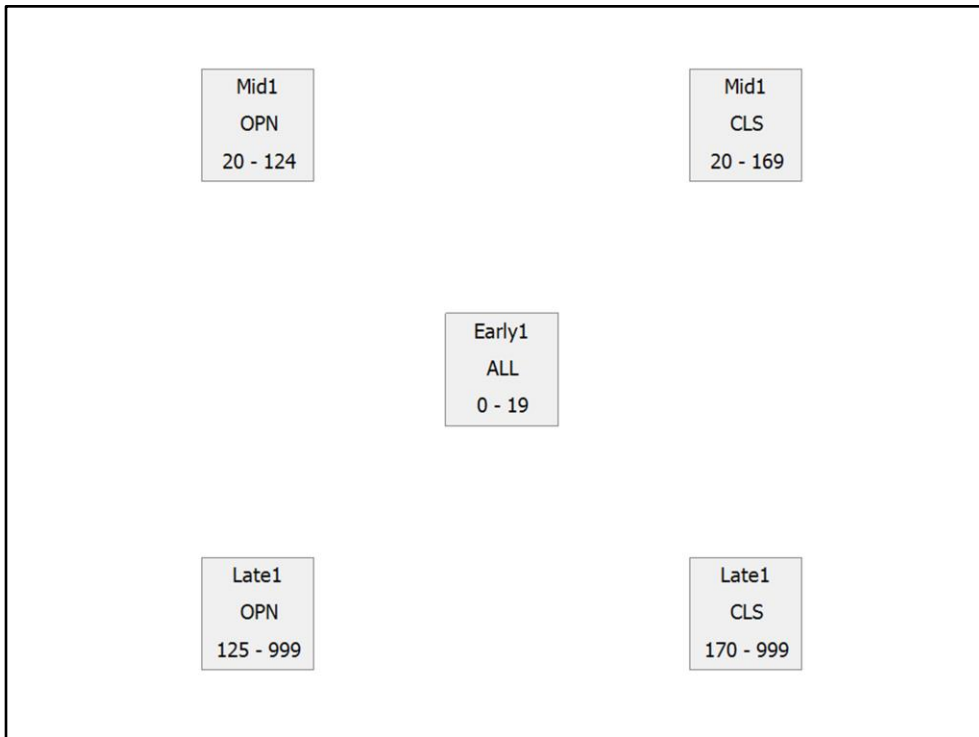
Mesic Ponderosa Pine



Models have 2 parts: description and quantitative state-and-transition model
Together they describe basic ecology of the bps prior to Euro-American settlement

SHOW DESCRIPTION

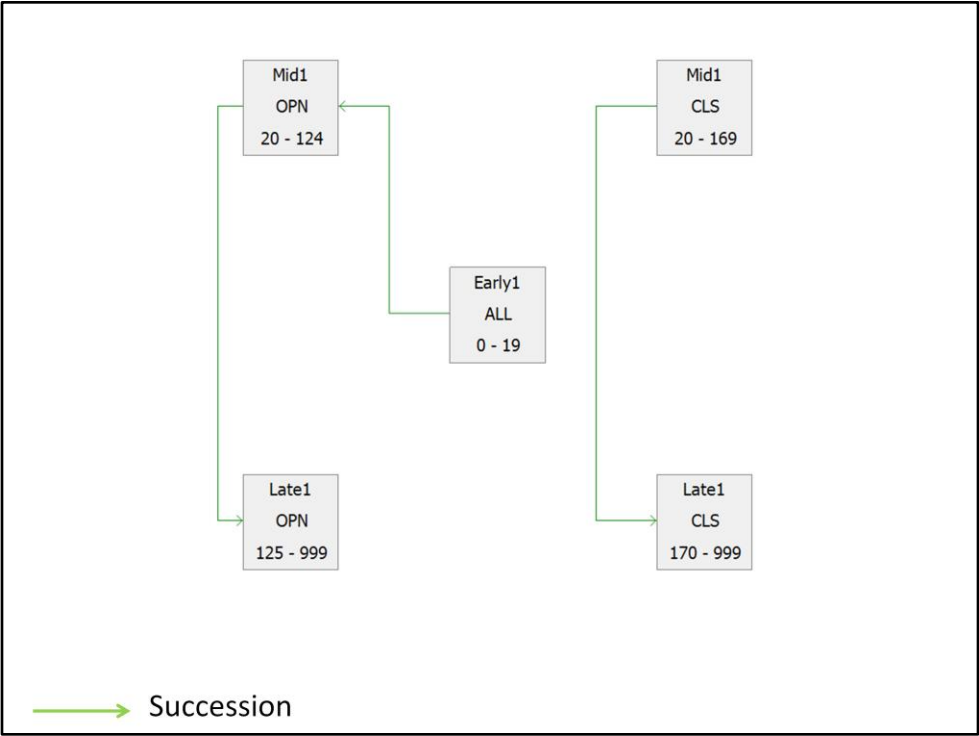


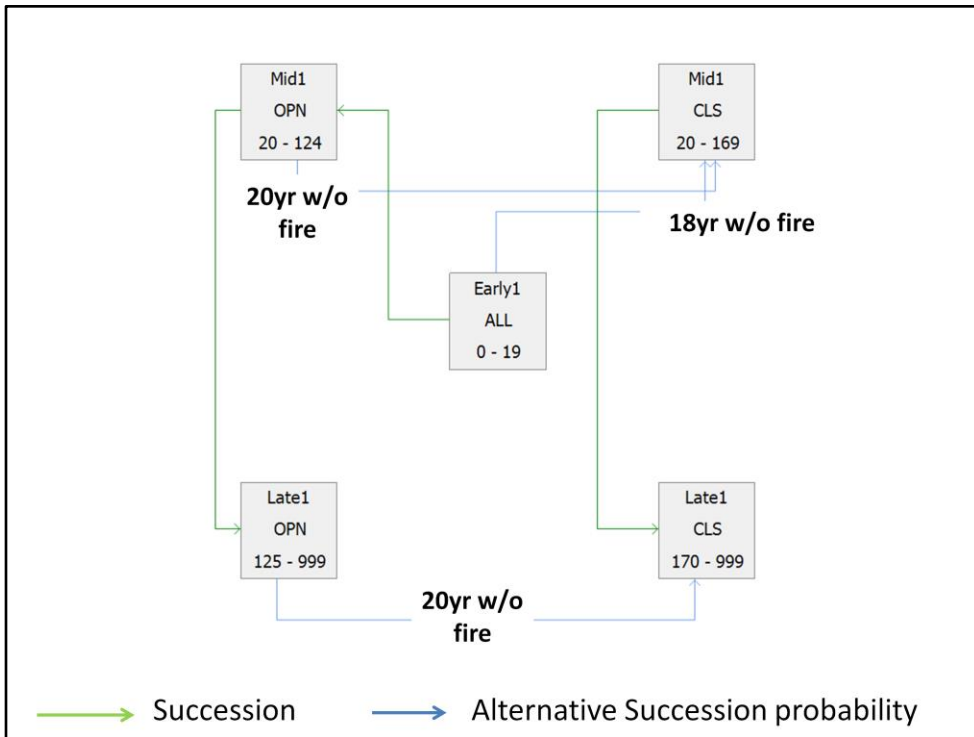


Model in ST-Sim

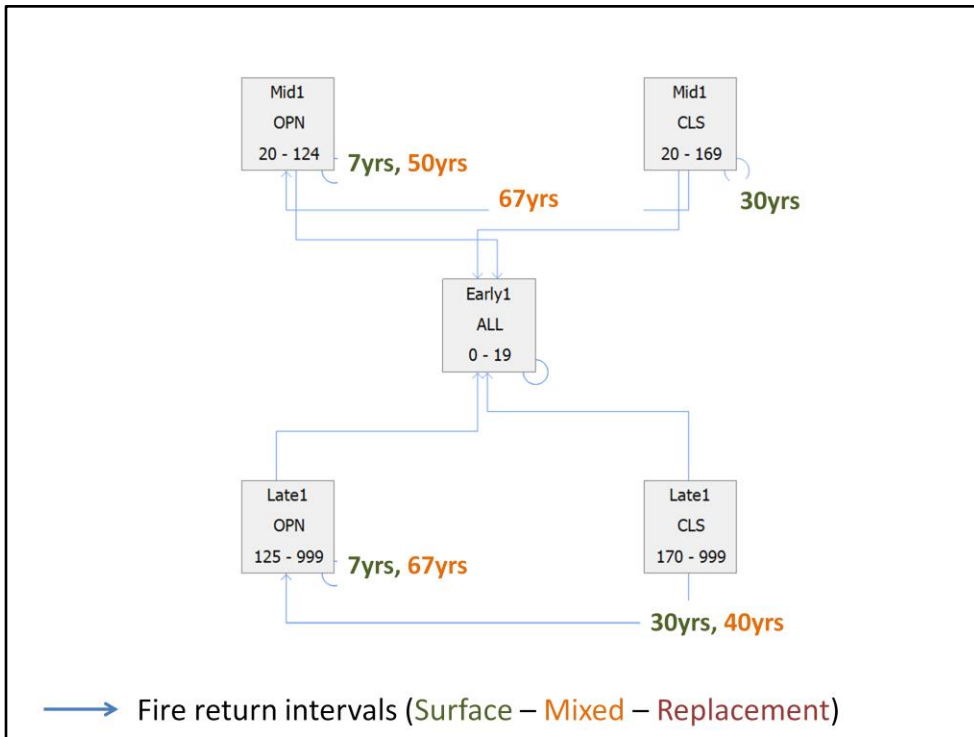
5 states

Show open vs. closed in description doc

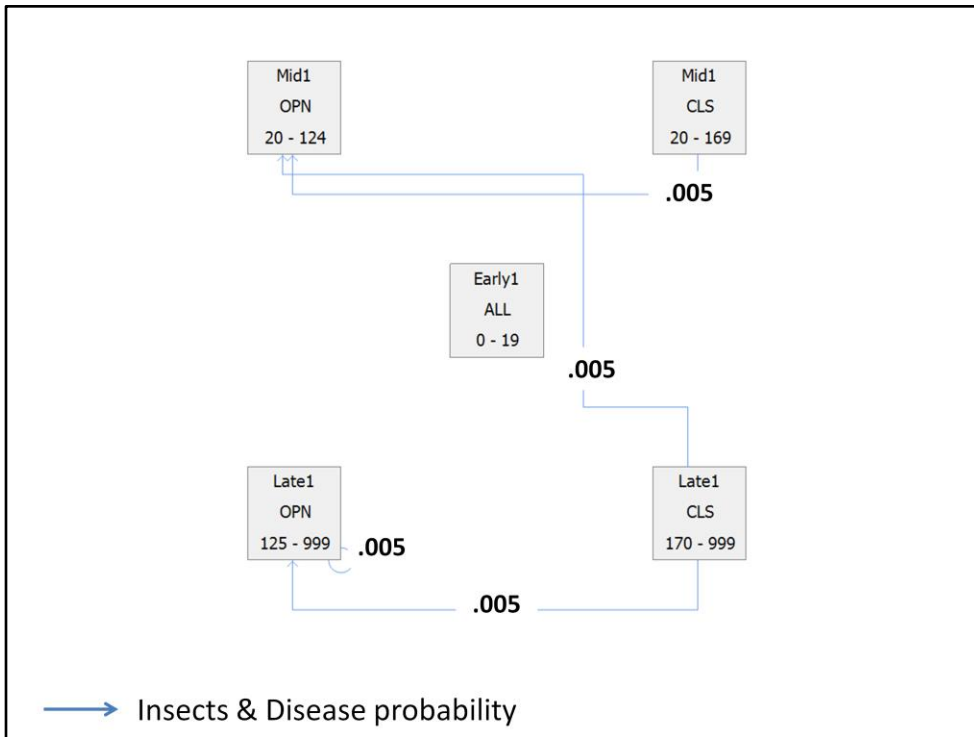




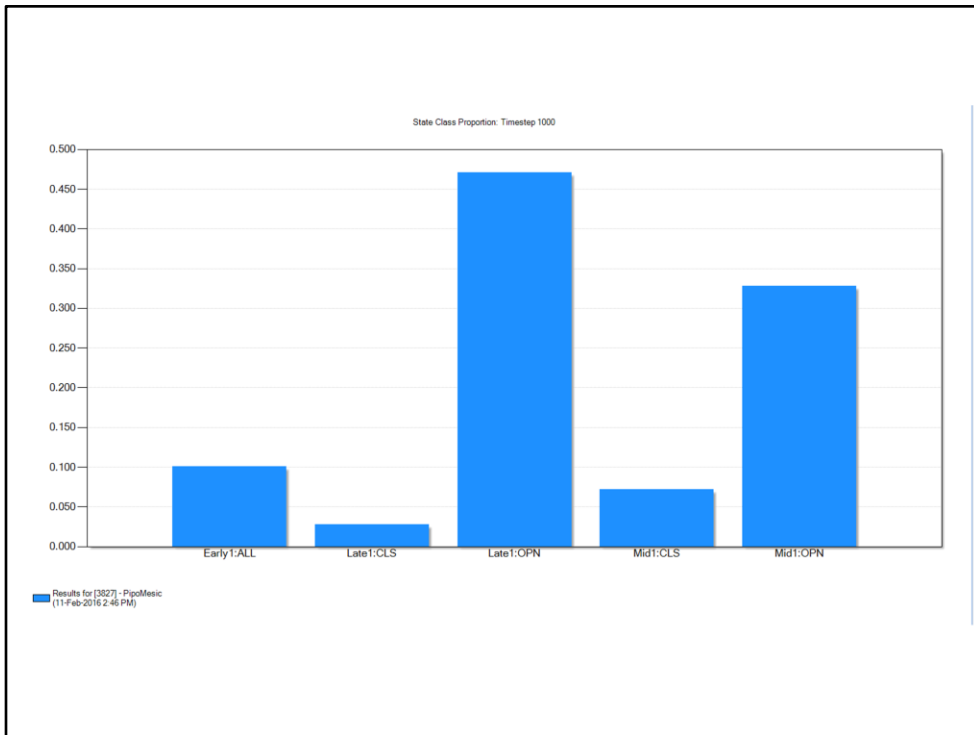
Succession and alt succession



All fire
 Excluded less frequent replacement intervals

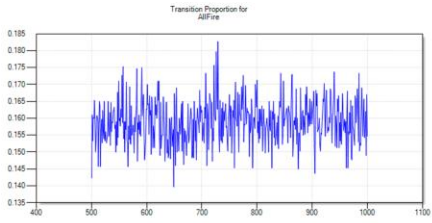


insects

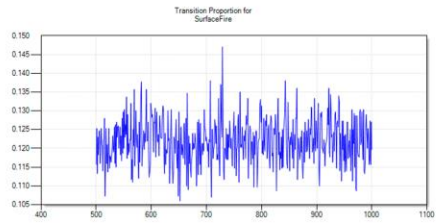
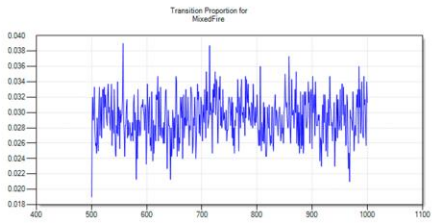
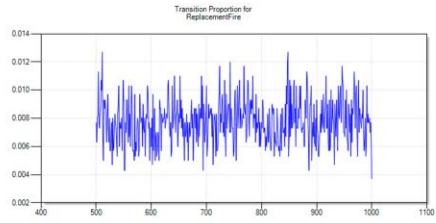


Ref con can be compared to current con

AllFire FRI = 6yrs



Replacement FRI = 125yrs



Results for [3827] - PipoMestic
(11-Feb-2016 2:46 PM)

Mixed FRI = 33yrs

Surface FRI = 8yrs

Creating the BpS Models

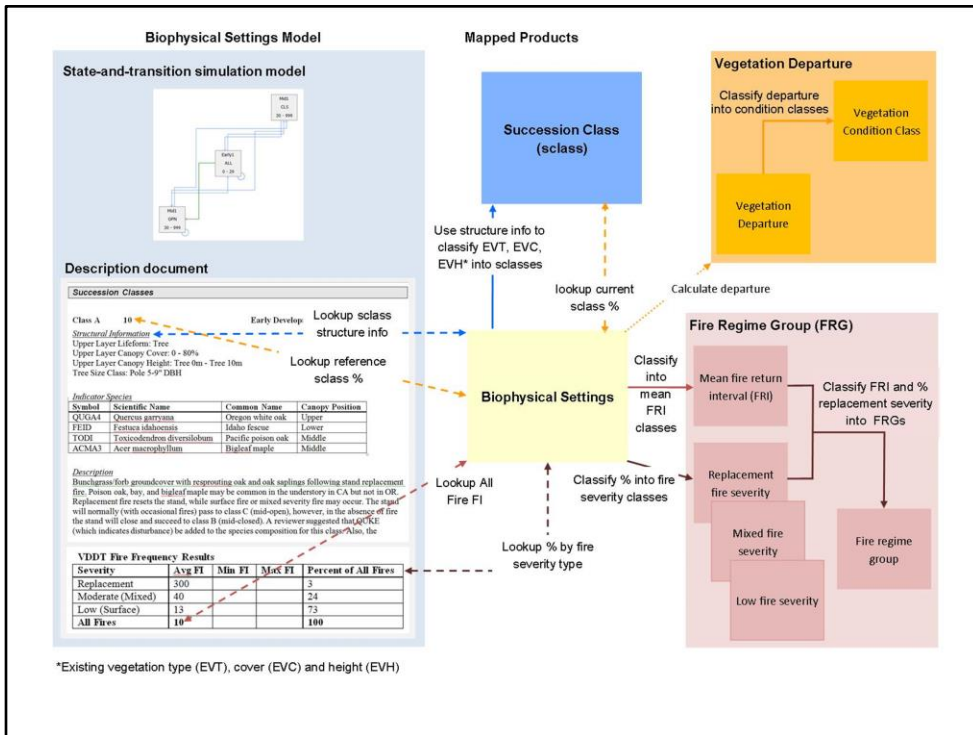


- collaborative process facilitated by TNC-LF
- represent collective ecological knowledge of hundreds of people around the country
- >700 contributors to the models, >40 expert workshops plus individual meetings

Strengths	Limitations
Cover ~500 BpS	Don't include management or climate change
Connected to spatial data	Modeling constraints
Relatively easy to use, supported by LANDFIRE	Non-spatial
Good documentation	Difficult to validate, limited information
Suitable for large landscapes	Refine for local use

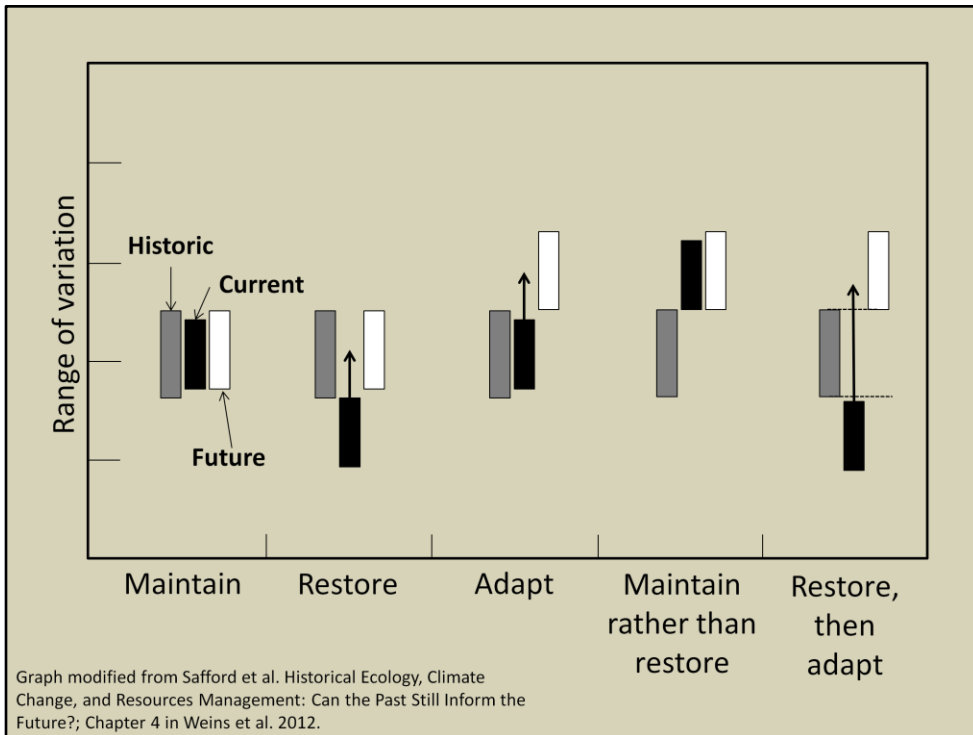
Support – tutorials, guides on line

Documentation – state assumptions in the description, numbers in model are explained in the description



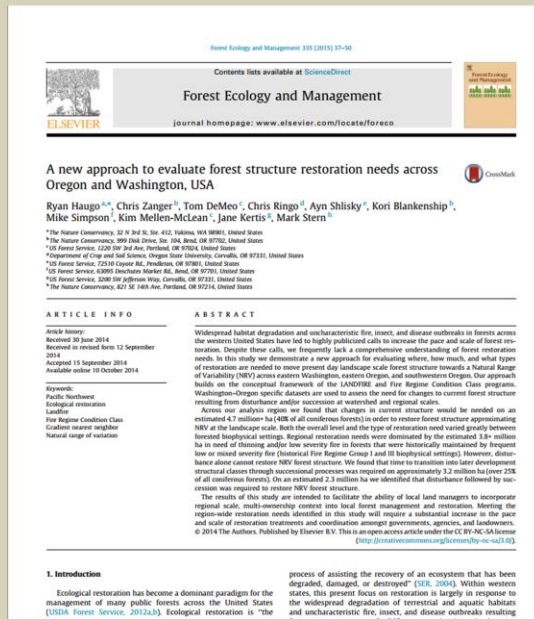
-LANDFIRE use of model info

-fire frequency and severity, FRG, succession class, VCC



- Historic condition is not necessarily desired condition
- hx information provides important context when evaluated w/ current and expected future conditions

Restoration Needs Study



- Study demonstrates a new approach for evaluating where, how much, and what types of restoration are needed to move present day landscape scale forest structure towards a Natural Range of Variability (NRV) across eastern Washington, eastern Oregon, and southwestern Oregon.
- Used LANDFIRE models to define the NRV

Restoration Needs Study

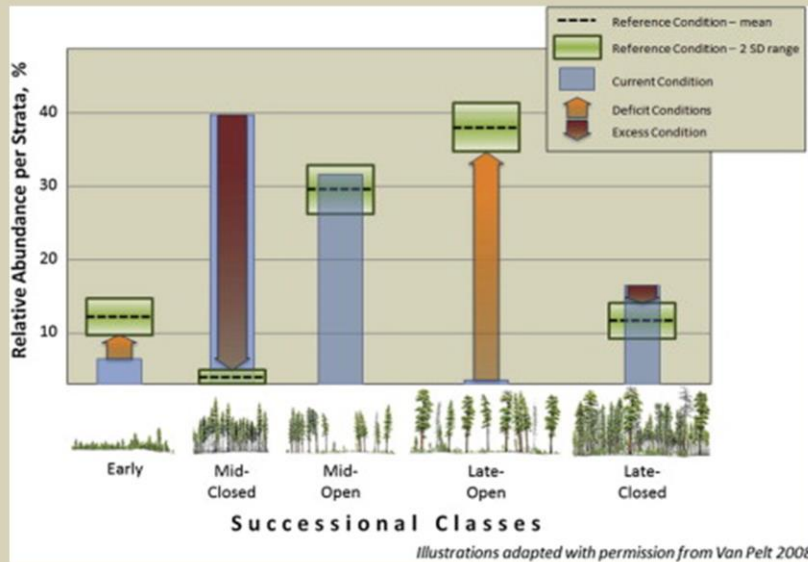


Figure from Haugo et al. 2015

Example of how the comparison of excess and deficit s-classes to natural range of variability reference conditions (NRV) are determined for a strata (biophysical setting × landscape unit). This example depicts the Dry Douglas-fir biophysical setting within the Oregon Blue Mountains – Upper Tucannon watershed (HUC 1706010706).

Restoration Needs Study

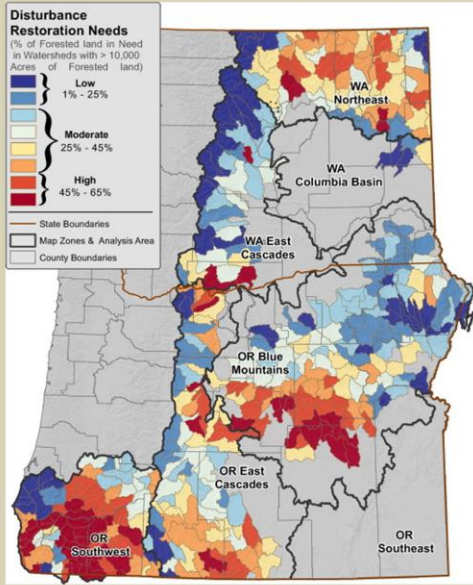


Figure from Haugo et al. 2015

All disturbance restoration needs as a percentage of forests within 10-digit/5th level hydrologic unit watersheds. Includes the thin/low fire, opening/high fire, overstory thin, thin/low fire + growth, and other disturbance + growth transitions.

Restoration Needs Study

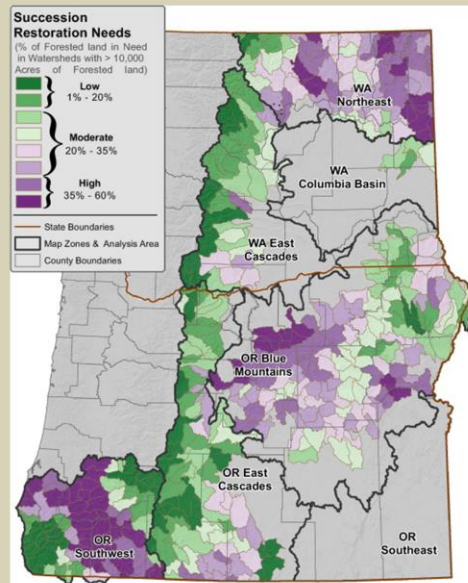


Figure from Haugo et al. 2015

Disturbance alone can't restore forests

All succession restoration needs as a percentage of forests within 10-digit/5th level hydrologic unit watersheds. Includes the thin/low fire + growth, other disturbance + growth, grow with fire, and grow without fire transitions.

Getting Started

The screenshot shows the Conservation Gateway website. At the top, there is a navigation bar with the text "Shared methods. Smarter conservation." and links for Home, Library, Science Choices, and Subscribe. Below this is a search bar with an "Advanced Search" button. The main navigation includes "Conservation Planning", "Conservation Practices", and "Conservation By Geography".

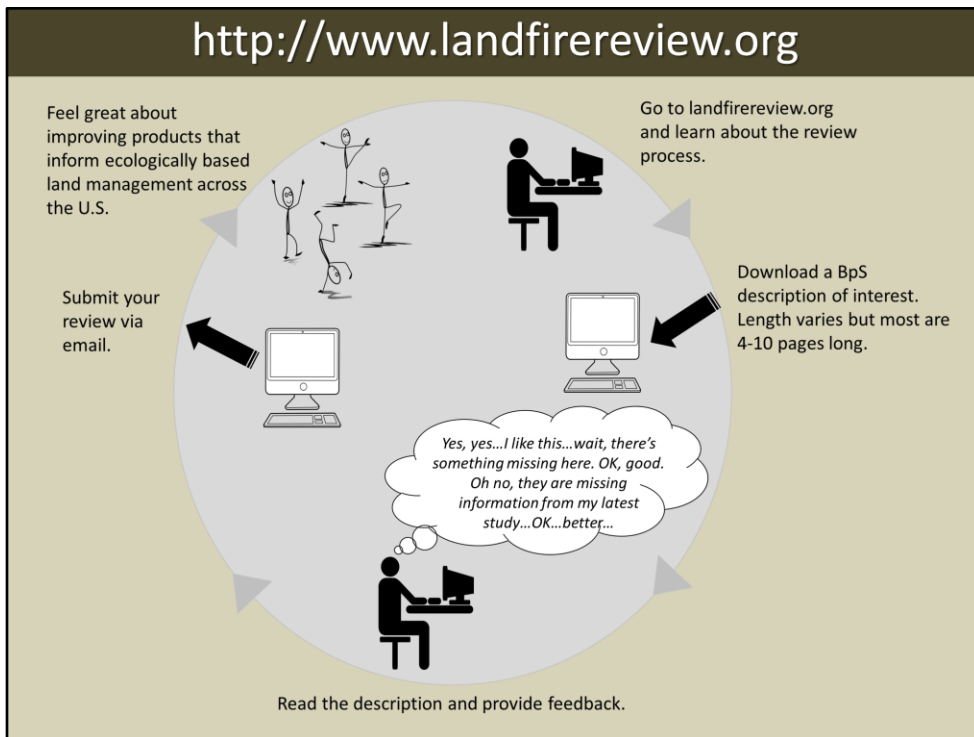
The left sidebar, titled "Conservation Practices", lists various categories: Water, Lands, Marine, Climate Change, Cities, Fire & Landscapes, Fire Learning Network, Fire Adapted Communities, LANDFIRE, Models & Spatial Data, Support, FAQs, Guides, Tutorials, Applications, Maps/GIS, Library, News and Updates, Contacts, Habitat Protection and Restoration, Fire and Climate Change, and Ecosystem Services.

The main content area is titled "Tutorials" and features a sub-header "These tutorials provide step-by-step instructions for using LANDFIRE products." Below this is a photograph of two people looking at a laptop. To the right of the photo is a "Resources" section with links to "LANDFIRE YouTube Channel", "LANDFIRE Program Help", "TNC-LANDFIRE Help", and "Wildland Fire Management RDSA".

Below the photo and resources, there are links for "BpS Models | G4D Data | Downloading Data | Vegetation Condition Class". The "BpS Model Tutorials" section contains a numbered list of four steps:

1. If you are new to state and transition modeling or to ST-Sim we recommend that you begin with the tutorial [Understanding a LANDFIRE Model in BpS-Sim](#). This tutorial explains the basic components of a model in ST-Sim. A LANDFIRE model is incomplete without its description document – learn [How to Link the BpS Model and Description](#).
2. The next step is to [Find a Specific BpS of Interest in the LANDFIRE ST-Sim Library](#). Not sure what BpS code you are looking for? Use our [BpS Model Search spreadsheet](#). If you would like help understanding the BpS codes, read about [Deciphering the BpS Code](#).
3. If you plan to experiment with a model, you will want to [Copy and Paste a Model](#) into its own library. Then, learn [How to Edit a Model](#) including adding or removing disturbances, changing probabilities and adding or removing classes.
4. Finally, you can [Run the Model and Graph the Results](#). If your analysis involves models and spatial data, learn [How to Link the Model with the Spatial Data](#).

- TNC-LANDFIRE team can help too



- No review since the models were delivered
- Review offers chance to improve models
 - incorporate new science, correct errors and inconsistencies

3 Good Reasons to Review

1. Multiply your impact
2. Improve the data used to manage land
3. “Fun”

1. translate your knowledge into vital products that are used in all sorts of applied and research settings
 2. Models have been used in dozens of land management applications and we want to make sure that we have the best data available to support these efforts
 3. Think about ecology and disturbance and succession
-
1. Please help if you can and if you are not sure how to get started contact me

Take Home Message

BpS models are important because they:

- Help us to understand complex ecological processes and relationships
- Provide a framework for exploring management actions



- LF models are not perfect
- useful: focus on ecological processes, tie to spatial data, cover forest and range systems
- Haugo et al. demonstrates how LANDFIRE data can compliment local data and enable broad scale analysis

Online Connections



LANDFIRE Program Home <http://www.landfire.gov>



Conservation Gateway: <http://nature.ly.landfire>



Twitter: [@nature LANDFIRE](https://twitter.com/nature_LANDFIRE)



YouTube: [LANDFIREvideo](https://www.youtube.com/LANDFIREvideo)



Bulletins/Post cards via e-mail

– Opt in: <http://eepurl.com/baJ BH>



Email: LANDFIRE@tnc.org

BpS Review website: <http://www.landfirereview.org/>

Questions? Comments?



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