



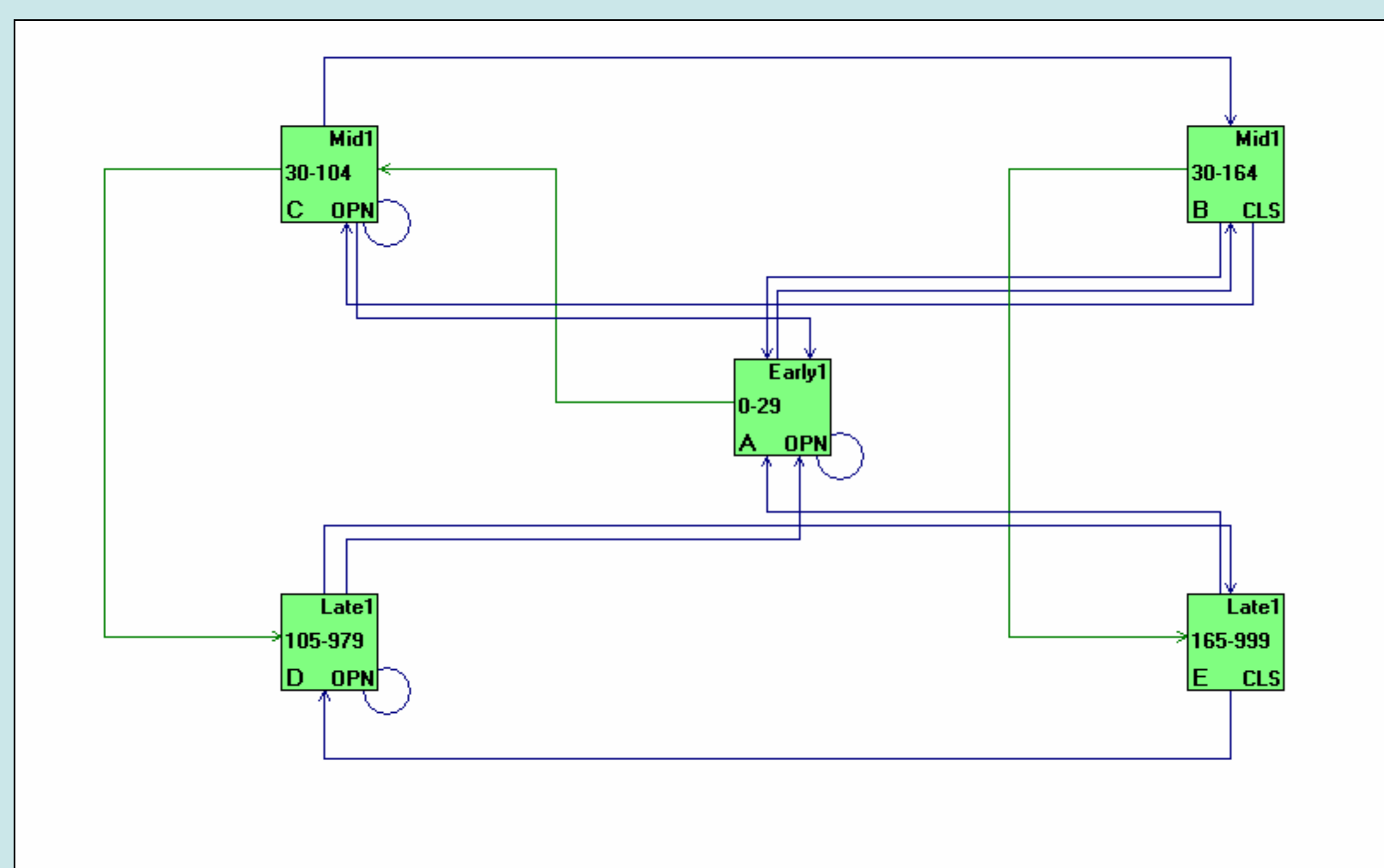
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THE LANDFIRE MODEL LIBRARY

Modeling the Past to Plan for the Future

Overview

The LANDFIRE Program in collaboration with vegetation and fire experts around the United States produced over 1,000 state-and-transitions models – one for every ecosystem (called Biophysical Settings or BpS) mapped by the Program. Each model consists of a quantitative state-and-transition model (STM), originally developed in the Vegetation Dynamics Development Tool (VDDT), and a description document. Together the model and description describe the vegetation dynamics, structure and composition of each BpS prior to Euro-American settlement.



A LANDFIRE STM may have five or fewer states and will include quantitative information for any disturbances that the modelers felt were important.

Applications

Restoration Needs Assessment



The northwest restoration needs assessment sought to answer the **questions how much, where and what types of actions are needed to restore forested lands in Oregon and Washington.** The project used the LANDFIRE models to estimate the historical range of variability (HRV), as measured by the stochastic variation across 10 model runs, in succession class distribution for 26 forested BpS. The assessment found that about 40 percent of coniferous forest in the region are in need of either a mechanical, fire or succession transition to restore forest structure to the HRV. *Haugo et al. in press.*

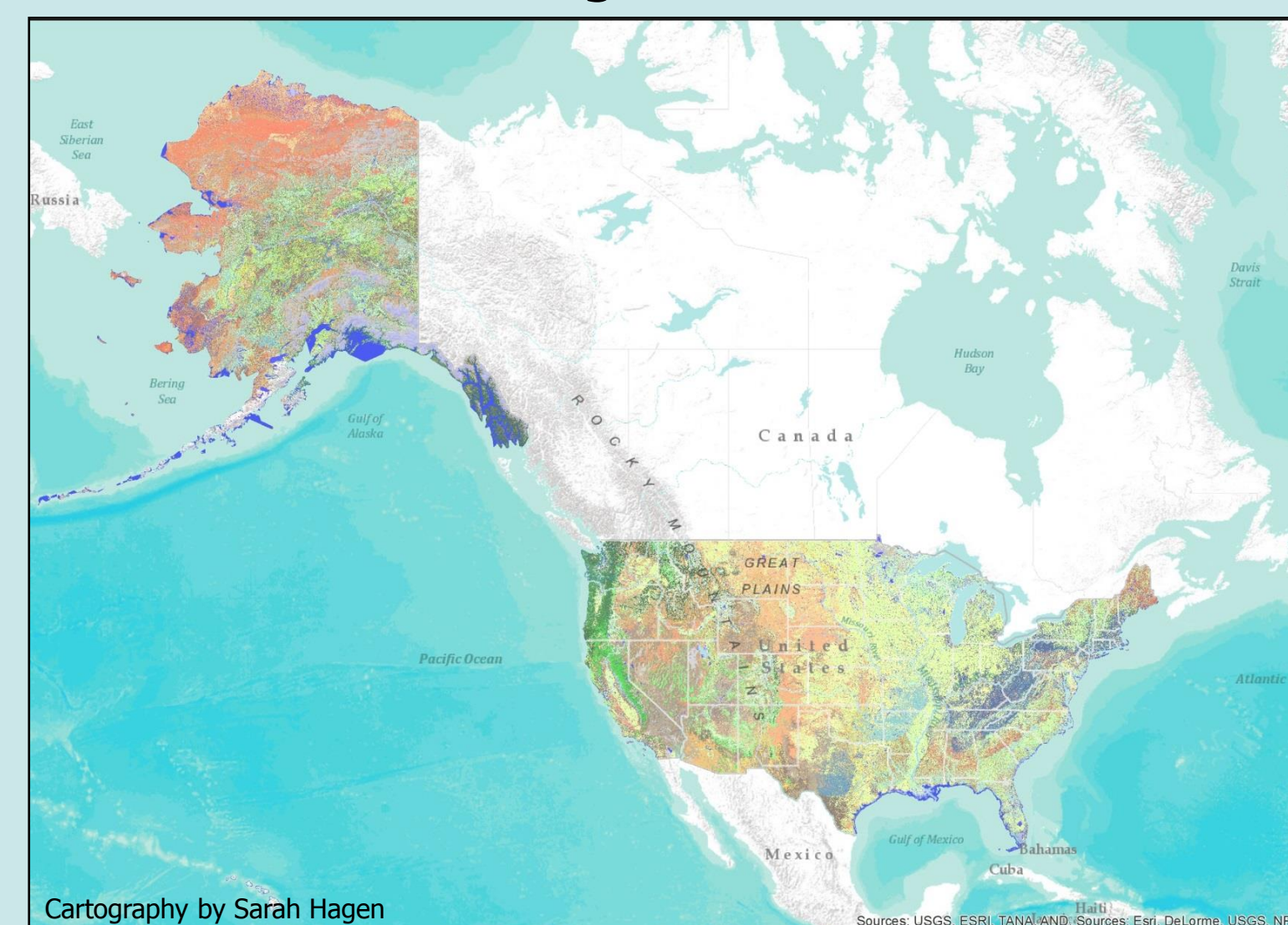
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Development

LANDFIRE is in the process of updating and improving its BpS model set. The three year review process will result in a “cleaning” and updating of the models resulting in a refined model library that will be easier to for users to access and explore.

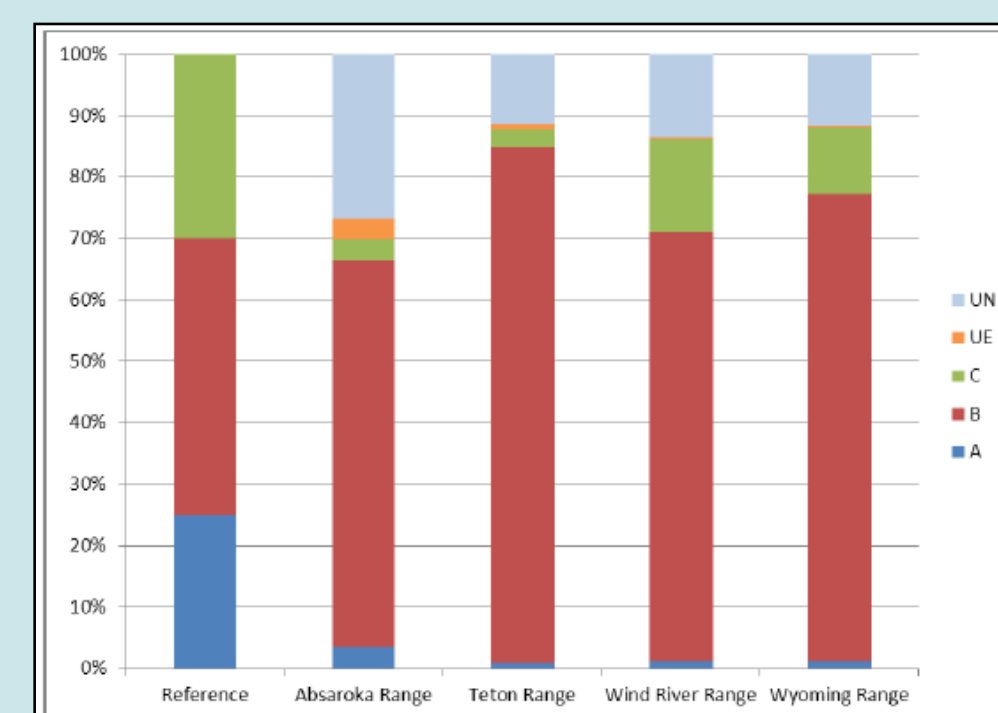
To Download LANDFIRE Models
Go to www.landfire.gov

Each model represents one of more than 500 Biophysical Settings mapped by LANDFIRE. In some cases there is more than one model used to represent an ecosystem across its range.



Vegetation Condition Assessment

The Bridger-Teton National Forest Vegetation Condition Assessment provides a comparison of reference to current conditions for the dominant BpS on the Forest. The LANDFIRE BpS models were used with minor adjustments to define the reference condition for calculating vegetation departure. The results indicate that most of the major BpS on the forest were moderately departed from reference conditions.



Graphical representation of reference and current succession class distribution for the Inter-Mountain Basins Montane Sagebrush Steppe BpS within four watersheds on the Bridger-Teton National Forest. Graph taken from: *Helmbrecht and others, 2012. Bridger-Teton National Forest Vegetation Condition Assessment.*

Clean

The “model cleaning” phase is now underway. The models have been moved from their native VDDT format to St-Sim. Un-mapped and duplicate models will be removed from the set. A more user-friendly model description document is under development.

Update

The phase two updating process will offer experts the opportunity to take a second pass at the models, updating information, correcting errors and generally improving our product.

Deliver

Model delivery is scheduled to occur in 2016. The improved model set will be available for the LANDFIRE 2015 re-map.

Repeat

We need help!

The LANDFIRE Program is committed to a collaborative modeling process. We cannot improve these models without help from experts in a variety of fields, including STM modeling and vegetation and fire ecology.

Model Facts
Number of Models: 2,164
Number of Model Contributors: >700

Ways to get involved:

- Tell us what needs improvement.
- Adopt-a-model.** Choose an ecosystem that you know something about and review its model.

Modeling Support

Need help with modeling? Here are some resources that might help:

- Reviewing and Modifying LANDFIRE Vegetation Dynamics Models
- Adapting LANDFIRE Vegetation Dynamics Models
- Application stories and peer-reviewed articles from users on our website and on the LANDFIREvideo YouTube Channel.



Find these resources and link to others from: <http://nature.ly/landfire>

Contact any member of The Nature Conservancy's LANDFIRE team for customized support.



LANDFIRE is a nation-wide multi-partner project designed to map and model vegetation, fire, and fuel characteristics using a consistent, peer-reviewed, scientifically based methodology.

