

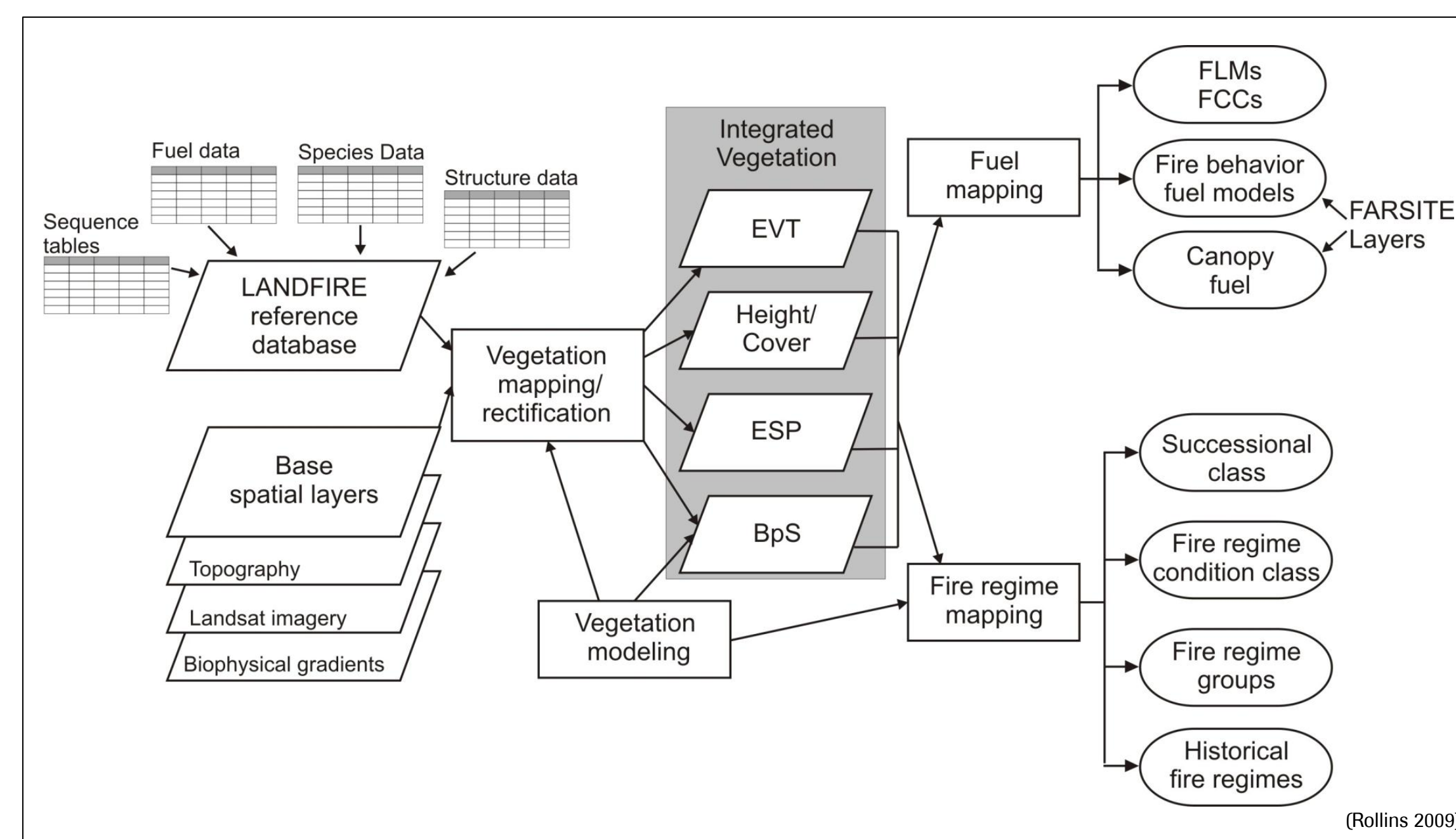


LANDFIRE: Data for Land Management

Process

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

Methods



Updates

LANDFIRE products are updated to reflect changes caused by management activities, natural disturbances and successional processes with the LANDFIRE Public Events Geodatabase (a collection of recent natural disturbance and land management activities), Landsat satellite imagery, Burned Area Reflectance Classification, Rapid Assessment of Vegetation Condition after Wildfire, Monitoring Trends in Burn Severity and ancillary data.

| | National | 2001 | 2008 | 2010 |
|---------------|-------------------|--|--|--|
| Description | Original products | Systematic improvements Existing vegetation type, cover, height | Updated for disturbance and succession | Updated for disturbance and succession |
| Completed | 2009 | 2011 | 2011 | 2013 |
| Imagery Date | 1999-2003 | 1999-2003 with newer imagery where change was detected | 1999-2003 with newer imagery where change was detected | 1999-2003 with newer imagery where change was detected |
| Current as of | Circa 2001 | Circa 2001 | Circa 2008 | Circa 2010 |

Major LANDFIRE Versions

Scale

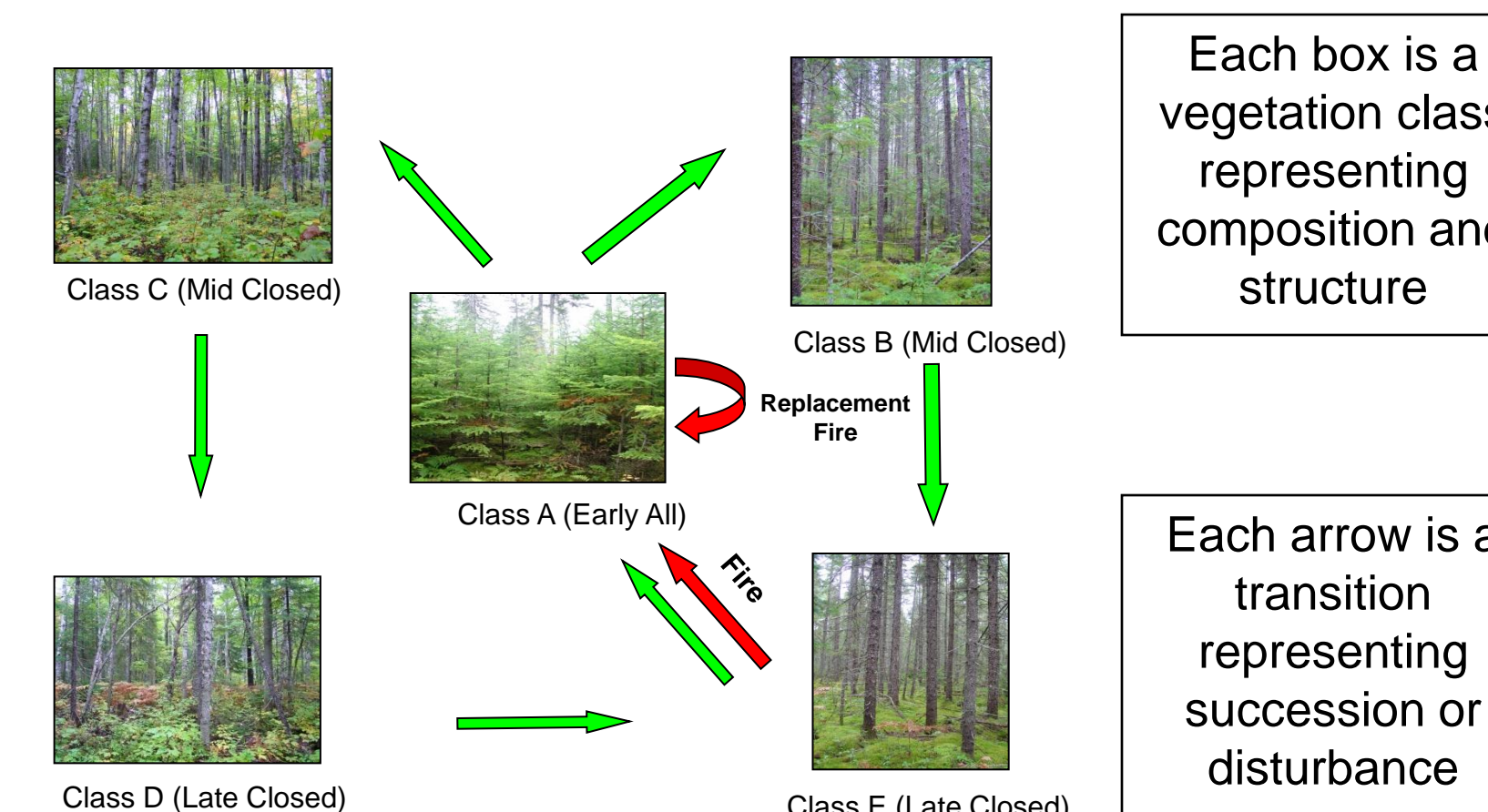
LANDFIRE products are designed to be used in support of strategic vegetation, fire and fuel management planning to evaluate management alternatives across boundaries. They were designed to work at: 1) national, 2) regional (large states or groups of smaller states) and 3) large sub-regional landscapes and Fire Management Units (such as significant portions of states or multiple federal administrative entities). The applicability of LANDFIRE products to support fire and land management planning on smaller areas will vary by product, location and specific use.

Products

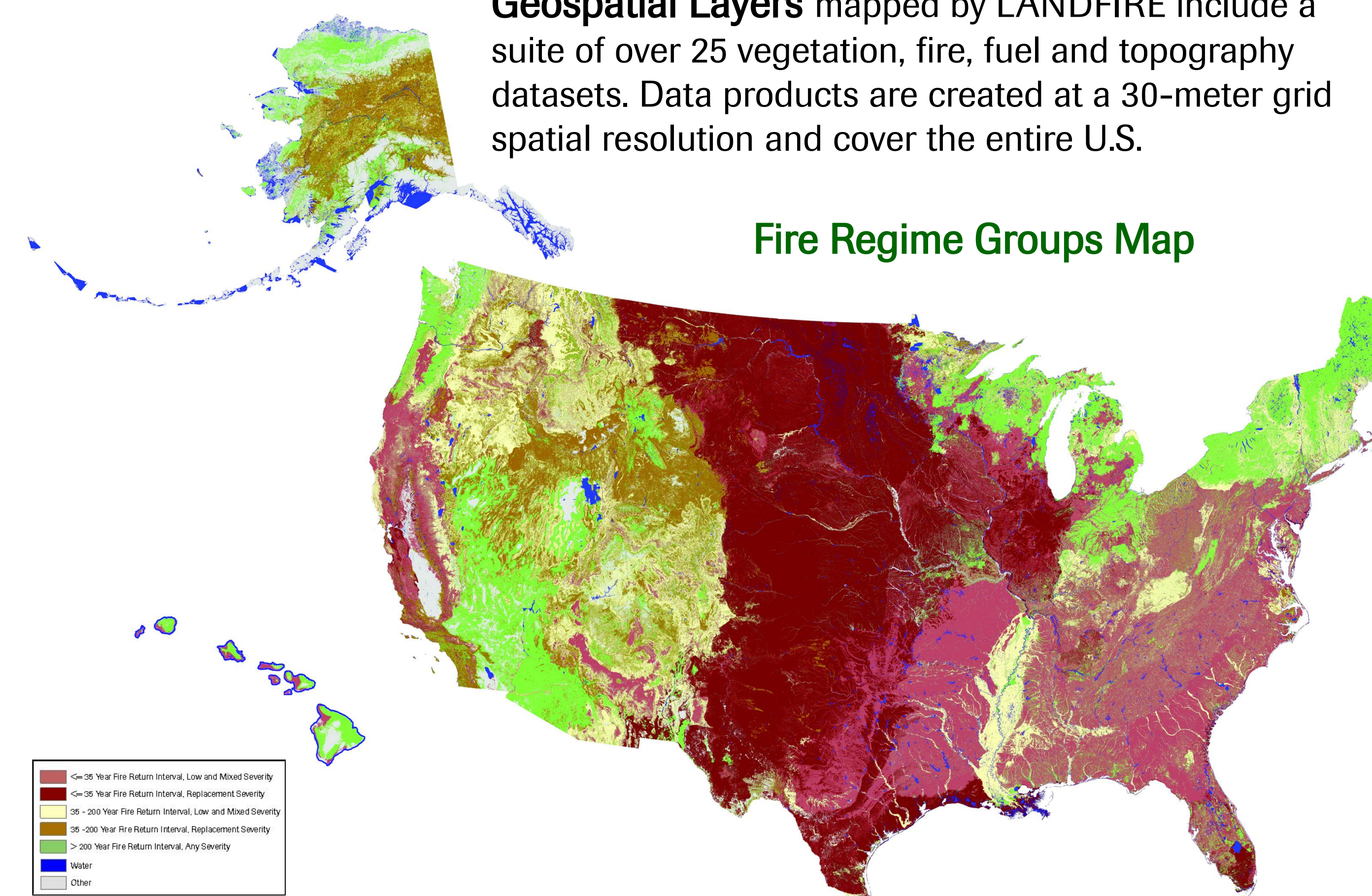
Vegetation Dynamics Models provide a quantitative representation of every Biophysical Setting mapped by LANDFIRE.

- The models can be used to:
- understand and set reference conditions,
 - represent current or desired conditions,
 - predict future conditions,
 - test land management strategies.

Northeast Lowland Spruce-Fir Forest Model



Geospatial Layers mapped by LANDFIRE include a suite of over 25 vegetation, fire, fuel and topography datasets. Data products are created at a 30-meter grid spatial resolution and cover the entire U.S.



Products

- Vegetation**
 Environmental Site Potential
 Biophysical Settings
 Existing Vegetation
 Existing Vegetation Height
 Existing Vegetation Cover
 Vegetation Dynamics Models
- Fire Regime**
 Fire Regime Groups
 Mean Fire Return Interval
 % Low-severity Fire
 % Mixed-severity Fire
 % Replacement-severity Fire
 Vegetation Condition Class
 Vegetation Departure
 Succession Classes

- Fuel**
 13 Fire Behavior Fuel Models
 40 Fire Behavior Fuel Models
 Canadian Forest Fire Danger Rating System
 Fuel Characteristic Classification System Fuelbeds
 Fuel Loading Models
 Forest Canopy Cover
 Forest Canopy Height
 Forest Canopy Bulk Density
 Forest Canopy Base Height

- Disturbance**
 Disturbance 1990-2008
 Fuel Disturbance
 Vegetation Disturbance
 Public Events Geodatabase
- Topographic**
 Aspect
 Elevation
 Slope

Applications

LANDFIRE Supports:

Land and Conservation Planning activities that meet governmental regulations and certification requirements by providing nationally consistent spatial datasets, ecological models and other valuable tools

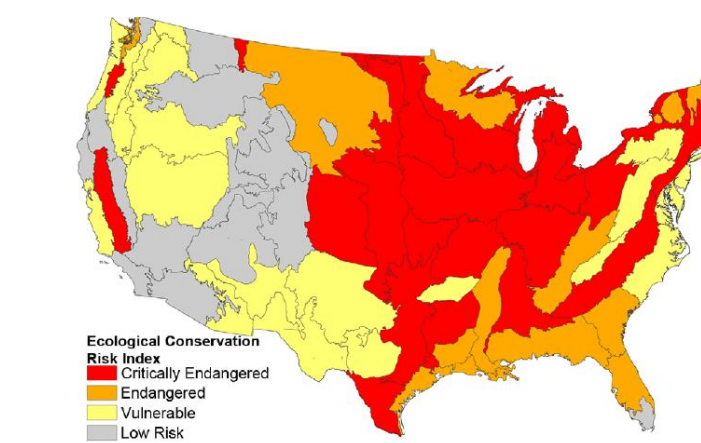
Natural Resource Assessments that use landscape-scale vegetation maps and dynamic vegetation models to support effective and efficient management.

Wildlife Habitat Analyses of areas that are potentially suitable for species of concern by providing science-based information regarding cross ownership, seral stage, vegetation height and cover spatial data sets.

Wildland Fire Management activities that require current information on vegetation, surface and canopy fuels and topography including all the geospatial layers required to run fire behavior and effects models such as FARSITE.

Conservation Risk Assessment

Swaty et al. (2011) used LANDFIRE National's vegetation condition class map to calculate conservation risk in the conterminous U.S. By their estimate, the inclusion of ecological information in the conservation risk equation doubled the number of critically endangered ecoregions.



Statewide Assessment

Colorado, New Mexico and Hawai'i each utilized LANDFIRE National spatial layers to complete their state-wide Assessment and Strategy for Forest Resources as required by the "re-designing" approach within the State and Private Forestry organization of the USDA Forest Service. The process was aimed at helping partners identify the greatest threats to forest sustainability and to accomplish meaningful, landscape-level change in high-priority areas.



Fire Management

LANDFIRE fuel and vegetation layers are used to support Fire Program Analysis, Wildland Fire Decision Support System, Hazardous Fuels Prioritization and Allocation System and the Cohesive Strategy just to name a few.



Landscape Conservation Forecasting™

Landscape Conservation Forecasting (LCF) is an approach designed to help land managers identify a set of restoration strategies that provide the most benefit for the available budget. LCF was developed by The Nature Conservancy of Nevada (Louis Provencher, Greg Low and Susan Abele) with assistance from LANDFIRE and has been used on more than 14 landscapes including the Great Basin National Park, Cherokee National Forest and Bureau of Land Management's Bishop District.

| Ecological System | Current | 20 Years | 20 Years |
|-------------------------------------|---------|-------------|------------------|
| | | Fire Regime | Ecological Model |
| Alpine | 7 | 7 | 100 |
| Aspen | 41 | 40 | 32 |
| Basin Wildfire - Big Sagebrush | 38 | 100 | 26 |
| Juniper Conifer | 32 | 100 | n/a |
| Low Sagebrush | 41 | 37 | 37 |
| Montane Sagebrush Steppe | 7 | 10 | 37 |
| Montane Subalpine Riparian | 21 | 33 | 27 |
| Mountain Mahogany Woodland | 30 | 40 | n/a |
| Mountain Shrub | 30 | 40 | n/a |
| Pinyon-Juniper Woodland | 20 | 10 | n/a |
| Tahoeconifer | 8 | 10 | n/a |
| Wet Meadow | 10 | 10 | 10 |
| Wyoming Big Sagebrush (boreal) | 20 | 10 | 10 |
| Wyoming Big Sagebrush (terrestrial) | 20 | 10 | 10 |

