

## LANDFIRE Product Application Summary

### Extent of Conterminous US Rangelands: Quantifying Implications of Differing Agency Perspectives

#### Citation

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#### Authors

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**Application Location:** 46°51'37.87"N, 114° 1'10.20"W (Missoula, MT; author's location)

#### **Objectives:**

The goal of this work was to quantify the extent of rangelands in the conterminous U.S. by developing an objective and repeatable approach to rangeland mapping.

#### **Description of project/analysis:**

Various definitions of rangelands exist, but the authors chose to use the Natural Resources Inventory (NRI) administered by the Natural Resources Conservation Service and Forest Inventory and Analysis (FIA) definitions and as a result, they developed two estimates of rangeland extent.

The authors mapped the extent of rangelands according to the NRI and FIA definitions using unmodified LANDFIRE 2001 Existing Vegetation Type (EVT), Existing Vegetation Cover (EVC), Existing Vegetation Height (EVH) and Biophysical Settings (BpS) geo-spatial data. The LANDFIRE Reference Database (LFRDB) was also used to develop and map the likely dominant species and representative life form associated with each pixel, which was required for mapping the NRI definition. Two GIS model, NRI-LANDFIRE and FIA-LANDFIRE, were developed using the input data to estimate rangeland extent.

The models estimated the extent of rangelands in the conterminous U.S. at 268 Mha and 207 Mha for the NRI-LANDFIRE and FIA-LANDFIRE definitions respectively. In addition, the NRI-LANDFIRE model estimated that 19Mha of former shrubland has been “afforested,” (i.e. land that was historically shrubland that now has greater than 25% tree canopy cover). The ~23%

difference in the estimates highlights the difference in the definitions and agency perspectives. The main areas of disagreement between the models occurred in oak, pinyon-juniper and mesquite woodlands and in forested flatwoods and former longleaf pine savannahs in the SE U.S.

***Value of this work to the natural resource management/conservation community***

- This work provides a reliable estimate of the extent of rangelands in the U.S. which is valuable for estimating carbon sequestration and forage availability, provides a baseline for measuring change in rangeland extent overtime and can support development of management and monitoring plans.
- The estimate of the extent of U.S. rangelands could be used to estimate carbon sequestration and forage availability, provide a baseline for measuring change in rangeland extent overtime and support development of management and monitoring plans.

***LANDFIRE Products used:***

Unmodified LANDFIRE 2001 Existing Vegetation Type (EVT), Existing Vegetation Cover (EVC), Existing Vegetation Height (EVH) and Biophysical Settings (BpS) geo-spatial data. The LANDFIRE Reference Database (LFRDB) was also used to develop and map the likely dominant species and representative life form associated with each pixel, which was required for mapping the NRI definition.

LANDFIRE data were chosen for this analysis because they were the only data available for the entire conterminous U.S. with the information required to complete the analysis.

***Supporting information/resources***

<http://www.treesearch.fs.fed.us/pubs/41872>