

## LANDFIRE Product Application Summary

### Determining priority areas for prescribed fire – A case study from Wisconsin

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**Application Location:** Wisconsin, USA

#### Objectives

- 1) Quantify and map fire dependent communities in Wisconsin.
- 2) Identify the priority areas for prescribed fire to maximize the probability of maintaining the full suite of fire dependent communities on the landscape.

#### Project description

This project, referred to as the Wisconsin Fire Needs Assessment (or FNA), was conducted with the input of a large group of stakeholders and partners. To quantify and identify priority areas for prescribed fire, we did a cost-benefit analysis focused on vegetation with a fire return interval less than 50 years. We then combined the information for fire-dependent vegetation with additional spatial data sets to assess the benefits, effort, and challenges associated with using prescribed fire in those communities across the state. The Wildlife Action Plan and community rarity were used to identify areas where the benefits to using prescribed fire are greatest. We also incorporated non-ecological factors, like the effort needed to maintain these communities (based on mean fire return interval) and the challenge of using prescribed fire in the Wildland Urban Interface. By accounting for effort and challenges in addition to the ecological benefits, we can begin to identify areas where there is potential for successful long term management with prescribed fire.

We used LANDFIRE for three main reasons: (1) it included both public and private lands, (2) it is publicly available, making the methods easy to replicate for other states, and (3) the assessment can be updated with future versions of LANDFIRE data with relative ease. There was also the benefit of having vegetation descriptions that included historical mean fire return intervals to include as part of our analysis. Other spatial data we could have used include the National Land Cover Database (NLCD) and a Wisconsin specific vegetation layer (e.g., WiscLand).

## ***LANDFIRE products used***

We used the LANDFIRE Exiting Vegetation Layer (EVT) from the most recent release (LF2012 / LF\_1.3.0).

Data Management: Prior to conducting the cost-benefit analysis, we ran a filter to exclude vegetation patches of less than four adjacent pixels. We attempted to separate pasture from hay in the pasture/hay EVT by excluding any pasture/hay outside of historic range of prairie and by comparing with NLCD data. Lastly, we combined similar EVT's into "community groups" to decrease the number of individual vegetation categories we were dealing with in the analysis.

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

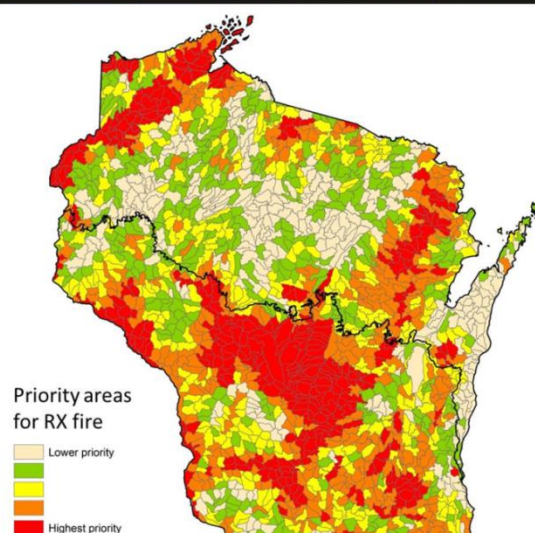
This assessment helps to highlight regions where prescribed fire will likely have high benefits and fewer challenges associated with Wildland Urban Interface. The initial results show high priority areas occurring in the central portion of the state, northwest and northeast, areas where large portions of rare fire-dependent community types occur. This assessment can also be combined with other spatial analysis projects as a way to incorporate the need for prescribed fire as part of a management plan, or could be used as a starting point for fine-scale analyses of the priority regions to develop fire management plans.

Regionally, this FNA can be combined with the results of a similar assessment completed for Michigan and the ongoing FNA for Illinois to provide a regional perspective on where prescribed fire is beneficial as a land management tool. Because our methods used publicly available data the same approach can be used by other states to develop similar products. By combining state assessments regional needs can be assessed across a larger landscape. This aligns with one of the goals of the National Cohesive Strategy to "maintain and restore resilient landscapes" in this case using prescribed fire.

The Tallgrass Prairie and Oak Savanna hopes to make the methods and data available for partners to use as part of future planning regarding prescribed fire.

## ***Online resources***

Additional information can be found on the Tallgrass Prairie and Oak Savanna Fire Science Consortium website: [www.tposfirescience.org](http://www.tposfirescience.org)



Map created by Sarah Carter