

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: A Spatially Explicit Evaluation of the Bioenergy Potential of the Southwestern United States

Discipline: Natural
Type of Project: Research
Funding Agency: USGS
Other Partners/Cooperators: University of Montana
Effective Dates: 9/1/2011 - 8/31/2014
Funding Amount: \$103,625 [FY13: \$16,000; FY12: \$45,000; FY11: \$42,625]

Investigators and Agency Representative:

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Project Abstract: University of Montana's PIs will investigate the potential for biofuels development in the southwestern US to meet energy demand. Demand for alternative energy development in general, and biofuels development in particular (since biofuels are so easily used with existing engine technology), is increasing dramatically. Due to the high solar potential and relative lack of land currently used for agriculture, the southwestern US is being proposed as an excellent region for increased biofuels development. In addition, much of the development is being proposed on public lands, of which the southwest has many. Yet we have a surprisingly poor understanding of the potential for biofuels to actually meet significant energy demand, and modeling techniques offer an exciting opportunity to explore and help constrain the potential for this important alternative energy resource. Specifically, land managers and decision-makers have almost no information with which to weigh the pros of biofuels development against potential cons.

The objectives of this research project are:

- Investigate the potential impacts of biofuels development on western ecosystems
- Use remote sensing and modeling approaches to determine the potential for biofuels development at national, regional and local scales.
- Develop a suite of models to better predict productivity potential to help decision making.
- Include analysis that compares different biofuel crops in their efficiency and productivity.
- Explore how predicted climate change will affect the potential of western biofuel crops to meet energy demand.
- Provide land managers with information that will help manage public lands in the face of increased requests for biofuels development.

Outcomes with completion dates: August 31, 2014

Keywords: biofuels, energy demand, climate change, USGS, University of Montana