

Comments on the EPA's 2nd Triennial Report to Congress on the environmental and resource conservation impacts of the Renewable Fuel Standard (RFS).

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Quick summary of the report:

This new triennial report offers a comprehensive look back on the land use changes and associated environmental impacts that occurred during implementation of the RFS. The EPA's thorough assessment and attention to detail reveals that there is indeed consensus across every major source of data available--from the USDA, the USGS, and independent scientists--that cropland area expanded following the RFS, and that this has contributed to negative environmental consequences.

Background Comments:

- I'm a researcher at the University of Wisconsin, where our team studies agricultural land use change across the United States, including the relationship between biofuels and the landscape.
- This new report by the EPA accurately captures the state of the science and our current best understanding of the land and environmental impacts of biofuel production and use, and I think the EPA authors of this report should be commended for their objective review of the evidence and commitment to sound science.
- Looking back, at the time of the 1st triennial report in 2011, many of the impacts of biofuels on the landscape were still uncertain and had to be estimated using predictive models of anticipated land use changes. Since then, enough time has passed to observe the actual changes on the landscape and the effects of expanded biofuel production.

EPA's findings on Land Use Change:

- Digging into the report's findings, the EPA's rigorous review of the available data shows an indisputable increase in the acreage of biofuel feedstock crops like corn and soybeans following enactment of the Renewable Fuel Standard.
- By synthesizing the available studies, the EPA found between a 4 million and 7.8 million acre increase in the amount of actively managed cropland in roughly the 5 years following the RFS.
- These are huge amounts of land--equal almost in size to the land area of New Jersey--and really represent large-scale transformation of our landscape.
- The EPA also concluded that the environmental impacts associated with these vast changes in land use are, at least in part, due to increased biofuel production connected with the RFS.

Ecosystem health and biodiversity:

- Example impacts include widespread loss of habitat and landscape simplification, including significant loss of grasslands and wetlands in ecologically sensitive areas, like the Prairie Pothole Region in the Midwest and Northern Great Plains.
- They also concluded that increasing pesticide use for feedstock production was associated with negative impacts to pollinators, birds, soil organisms, and other ecosystem services.
- With respect to soil health, the EPA concluded that the "Conversion of grasslands to annual production of the dominant biofuel feedstocks typically adversely affects soil quality, with increases in erosion and the loss of soil nutrients and soil organic matter, including soil carbon."

Carbon emissions:

- It is important to note that the new triennial report does not update or report on the greenhouse gas emissions associated with biofuels.
- However, from our own [research](#) and other studies we see that the direct carbon emissions associated with the levels of land conversion reported by the EPA are significant, and that these *emissions from domestic land use change could reduce or even reverse the potential greenhouse gas savings of conventional biofuels.*

Concluding remarks:

- Overall, the EPA's conclusions match that of the most recent [scientific research](#) and [findings](#), and provide a common ground upon which to build and advance our understanding of biofuels and their impacts.
- Furthermore, by rigorously reviewing the existing data and evidence, this triennial report *helps lay to rest some of the tired debate* about whether these landscape changes and environmental impacts are occurring, and thus *enables more meaningful conversations about how to improve the sustainability of existing biofuel feedstocks, and how to support the development of cleaner, greener next generation fuels, including those from non-food cellulosic feedstocks.*
- In time, I think the new report will prove to be immensely valuable not only for policymakers and other stakeholders, but also for the scientific community, as it highlights the current state-of-the-science and identifies important areas of future research needs, providing a roadmap for future study.