The Renewable Fuel Standard is killing the environment

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According to the National Oceanic and Atmospheric Administration, this year's "dead zone" in the Gulf of Mexico, where oxygen levels are so low that sea life is killed or maimed, was larger than three U.S. states. One significant cause is agricultural runoff jettisoned from the Mississippi River, which feeds the massive algal blooms whose decomposition depletes water oxygen. Like many other ongoing environmental problems affecting the Midwest, this one is aggravated by the Renewable Fuel Standard.

The RFS is intended to promote the production of biofuels such as ethanol and biodiesel. Designers of the policy envisioned corn ethanol leading initial growth in biofuel sales, followed by more advanced biofuel varieties that would be made from grasses or crop wastes rather than food.

Despite herculean R&D efforts, the innovations necessary to make these alternative fuels economically sustainable has yet to materialize, and most of the mandate to date is being fulfilled by corn ethanol. Ramping up corn ethanol production since the RFS's 2005 passage required additional corn harvest, either coming from cropland expansion or intensification of existing operations.

Both strategies have consequences for the environment.

The U.S. already produced massive amounts of corn before the RFS, which means that the best areas to grow corn were already being used for that purpose. Expansion followed in areas less suited for corn production-often environmentally sensitive or marginal land where inadequate rainfall left farms reliant on already-overdrawn aquifers.

Some of this marginal land had previously been protected by the Conservation Reserve Program, which pays farmers to leave particularly sensitive areas unfarmed. In the six years following a 2007 expansion of the RFS mandate, nearly half of expiring CRP signatories elected not to re-enroll. Throughout the Corn Belt's periphery, grasslands and shrublands, wildlife habitat and high-erosion zones have all come under the plow. The National Wildlife Federation documented that these significant losses in habitat for grassland birds caused a drop in both species diversity and abundance in the Prairie Pothole Region.

This damage has cascading effects. Growing corn on marginal lands and intensifying production means additional nitrogen fertilizer application. Runoff from this fertilizer enters nearby waterways, continues through the Mississippi watershed and down into the Gulf of Mexico, where it increases the size of the dead zone by 30 square miles for every billion gallons of ethanol produced. According to NOAA, this year's dead zone is nearly 7,000 square miles.

The environmental benefits of corn-based ethanol are not strong enough to justify any of this. The environmental case for biofuels rests almost entirely on their reduced emissions-but those themselves are a matter of intense academic controversy. A recent meta-analysis published in the *American Journal of Agricultural Economics* reviewed every paper released on the topic and concluded corn ethanol offers an unimpressive 0.23 percent total reduction in greenhouse gasses relative to gasoline.

There is good news. The RFS statute calls for the EPA to set new mandates in 2022 and to take environmental impacts into account while doing so. If the EPA takes this task seriously, it should reduce or repeal the corn ethanol mandate on environmental grounds.

Unfortunately, instead of deregulating fuel choice and benefiting the environment, the Trump administration recently rejected a modest staff proposal to cut the conventional ethanol mandate by less than five percent. Instead, administration officials are taking numerous meetings with biofuel trade organizations and legislators representing Corn Belt states, apparently seeking to make the mandate even stricter.

Research documenting how the RFS aggravates many of our hairiest environmental problems continues to pile up. Environmental organizations are beginning to mount major campaigns against the policy. As the Trump administration seems to be preparing to double down on Bush-era failed policy, one merely needs to look off our southern coast to see a portion of the cost.

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