



Fifth Ave., Suite 850
Des Moines, IA 50309-2317
515-244-1194 Phone
www.iaenvironment.org

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VIA EMAIL

Laurie Nowatzke
Measurement Coordinator, Iowa Nutrient Reduction Strategy
Iowa State University
College of Agriculture & Life Sciences
303F East Hall
Ames, IA 50011
lwissler@iastate.edu

RE: Comments on Draft Iowa Nutrient Reduction Strategy: 2018-19 Annual Progress Report

Dear Ms. Nowatzke:

The Iowa Environmental Council (“Council”) offers the following comments on the draft 2018-19 Annual Progress Report (“Report”) of the Iowa Nutrient Reduction Strategy (“NRS”). These comments represent the views of the Iowa Environmental Council, an alliance of over 75 organizations, at-large board members from business, farming, the sciences and education, and over 500 individual members.

GENERAL COMMENTS

The Council makes the following general comments about the Report:

- **The breadth of reporting on the Iowa Nutrient Reduction Strategy is impressive and deserves commendation.** Iowa sets the standard for consistently producing an annual report on a state NRS. Publicly available data is vital for stakeholders to understand the state’s progress toward nutrient reduction, and robust annual reporting should continue to be a priority for the state.
- **Continued reliance on funding as a metric for voluntary efforts is misplaced and will not achieve the state’s goals.**
The Report highlights the government and private funding for “NRS-related” efforts, but fails to address critical issues that demonstrate the inadequacy of the voluntary approach to conservation practice implementation. Increases in financial incentives have failed to result in an equivalent increase of practice implementation. There has been advocacy for voluntary change for decades, but the state is not achieving its water quality goals. Furthermore, the funding for conservation practices does not look at the flipside of the coin

– the funding for subsidies and crop insurance that incentivize production over conservation.

- **The “Human” component demonstrates the inadequacy of the existing voluntary approach for nonpoint sources.**

The Report found “there was relatively little change in attitudes” statewide and “no change” in significant watersheds. The state is not on a reasonable pace to meet the goals of the Nutrient Reduction Strategy, and the lack of change in attitudes demonstrates that it will not increase the pace of progress. Even in the Iowa River watershed, although knowledge about the NRS increased among farmers, there was minimal change in farmer attitudes toward the NRS.¹

Additionally, since the adoption of the NRS in 2013 and increase outreach events related to the NRS, we have not seen an increase in adoption rates of conservation practices.² This challenges the assumption that education will lead to attitude change and therefore behavior change. It is very difficult to change attitudes merely through education, let alone behavior – which is also influenced by factors such as economics and the hassle of doing something versus doing nothing.³ Tracking outreach efforts should continue, but the outreach must be proven to actually change behavior and, ultimately, improve water quality. The ample outreach efforts to date have led to little or no change in attitude or behavior. As a result, implementation of the strategy should be adjusted to require basic standards of care for nonpoint sources.

- **Demonstrated progress toward the nutrient reduction goal remains inadequate.**

The NRS has a stated goal to reduce nutrient export by 45%. Although this report now contains nitrate export data, which is commendable, the report still does not compare such data to the baseline or benchmark data to demonstrate how much progress has been made toward that goal. This comparison can be easily made – see comments below under Water Component.

Further, the report has left out all references to the NRS science assessment scenarios that would provide an alternate way to track progress. Despite the state’s reluctance to use the scenarios to measure progress, in lieu of any other data, benchmarks, or targets, they are one of the only ways to assess progress on the NRS. Scenarios should therefore remain part of the reporting until the state develops and includes targets and benchmarks for progress reporting.

¹ Report at 17.

² “Progress Toward Nutrient Reduction Strategy Goals,” Iowa Environmental Council, available at https://www.iaenvironment.org/webres/File/NRS%20Implementation%20FINAL%207_16_19.pdf.

³ Heberlein, Thomas A. *Navigating Environmental Attitudes*. New York: Oxford University Press, 2012.

DETAILED COMMENTS ON SPECIFIC ISSUES

IEC completed detailed reviews of the information in the Report. Based on our review, we have several specific comments and questions.

Our observations and comments on these assessments are as follows:

Part 1: Measured Progress

Funding

- **Reporting on funding for NRS-focused programs should be in a separate graph from federal programs.** Although the NRS estimated potential costs to achieve its stated goals, that estimate was premised on specifically targeting resources to implement practices that reduce nutrients – particularly new resources and new programs. The largest portion of the “NRS-related” funding is through the federal Conservation Reserve Program (CRP), a program that was already well-established before the NRS was adopted. CRP has multiple aims, not just nutrient reduction, and relies on voluntary sign-ups.⁴ A direct comparison of federal and NRS-focused funding is misleading due to the different goals of the programs and the scale and administration of funding.
- **Reporting on funding should be put into context.** Considering only conservation funding ignores production incentives that can more than offset the funding.

⁴ “Conservation Reserve Program,” USDA, available at <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/index> (identifying water quality, soil erosion and wildlife habitat).

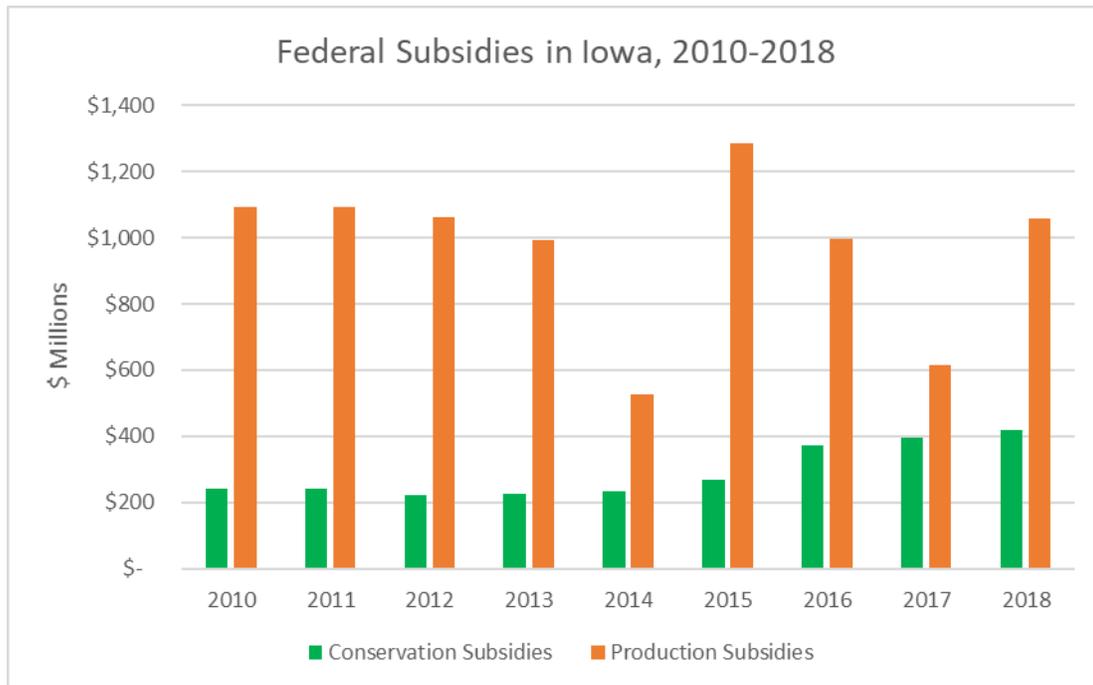


Figure 1: Comparison of federal Farm Bill funding for conservation programs and funding for programs that incentivize production in Iowa, including crop insurance, commodity subsidies, and disaster relief programs. *Data: Environmental Working Group Farm Subsidy Database via USDA.*

- **Funding assessments fail to address the temporary nature of certain management practices.** CRP contracts last 10 or 15 years,⁵ after which the land may be re-enrolled or may return to row crops. Looking at CRP funding without accounting for the net change in CRP funding ignores this fact. In 2018, Iowa had 158,395 acres of expiring CRP.⁶ Cumulatively, the state will have over 1 million acres expiring between 2020 and 2030. Annual expiration amounts vary significantly⁷ and should be included in the annual report when considering the funding for CRP. This also reflects the variability in CRP funding, over which the state of Iowa has no control.

⁵ "Conservation Reserve Program," USDA, available at <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/index>.

⁶ "CRP Contract Expirations by State," USDA, available at <https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/Conservation/Excel/stateexpired1630.xls>.

⁷ For example, 2017 had more than double the expiring acres of 2016. *Id.*

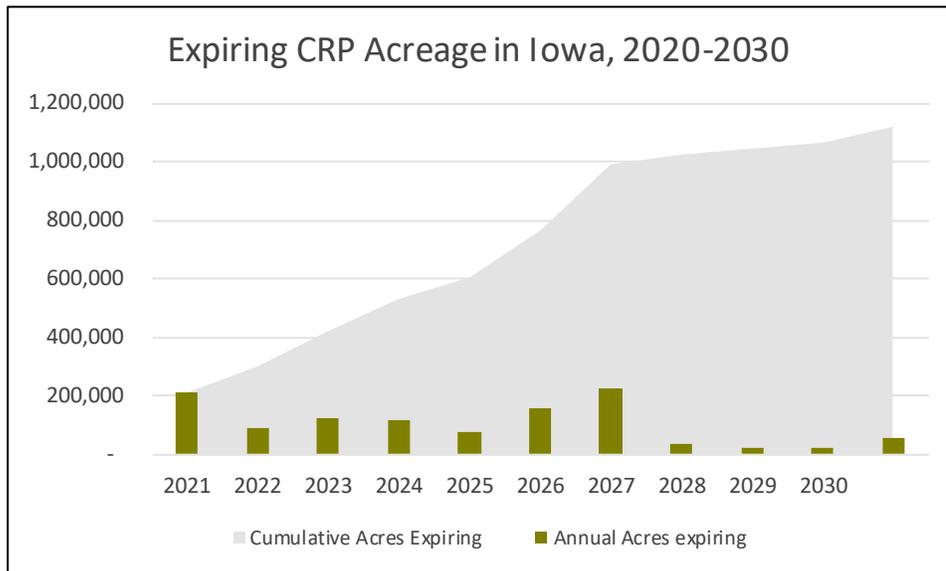


Figure 2: CRP contract acres set to expire 2020-2030. Data: USDA

Human Component

The lack of changes in knowledge and attitudes is disappointing and should result in changes to implementation strategies. The fact that a quarter of farmers surveyed claim not to be very familiar with the NRS and there was minimal to no change in attitudes toward the NRS (with no articulation of what these baseline attitudes are) suggests that education efforts are not adequate to result in behavior change and broad implementation of conservation practices.

We recommend the Report answer the following questions:

- How does the state plan to address the fact that “there was relatively little change in attitudes” statewide (15), and “no change” in important watersheds (17)?
- How have outreach efforts affected on-the-ground conservation practice adoption?
- Do data show that farmer awareness of the NRS is correlated to or has resulted in conservation practice adoption?
- What actions will the state take to improve knowledge and behavior of people whose participation is necessary to achieve the goals?
- Are there plans to conduct future attitude surveys that look at longer-term attitudinal shifts and practice adoption?

At what point does lack of attitudinal shift result in change of NRS implementation strategy to reach the 45% reduction goal within a reasonable timeframe?

Land Component

- **The state has completely, and without explanation, removed reference to scenarios from the NRS science assessment.** Without benchmarks and targets for the NRS, there

is no other way to assess progress toward nutrient export reduction. The scenarios show how the state can actually achieve nutrient export reduction, so they should continue to be reported on, even if the outcomes are unsatisfactory. Alternatively, the state could report on nutrient export data to track progress – see comments under Water Component.

- **IEC appreciates the direct acknowledgement of the connection between land use and nutrient loss.** This is a key factor that cannot be ignored. It is striking to see that land use has moved in the opposite direction of what would result in nutrient export reduction, as described on page 23. How does the state plan to address changes in land use that increase the likelihood of nutrient loss?
- **The estimates for cover crops need additional explanation.** The Report appears to rely on the fall 2016 estimate for cover crops, even though the Report is intended to address 2018-2019. It references but does not appear to rely on the more recent survey results from INREC. IEC has a number of questions related to the cover crop estimates:
 - Why does the Report use the fall 2016 number rather than a more recent estimate, as the previous annual report did?
 - Will future NRS annual reports only update this number every five years, after USDA releases survey results?
 - What is the methodology for the INREC survey?
 - What underlying data is reported for the INREC survey?
 - Will INREC treat the data as public data if it becomes part of the NRS?
 - Would INREC survey data be as reliable as the other methods of estimation?
- **We look forward to seeing the results of the commercial nitrogen fertilizer and manure study mentioned on page 28 in the next NRS progress report.** We hope to see a direct comparison of commercial fertilizer and manure application rates under the NRS to the application rates from the baseline and benchmark periods.
- **The graph documenting implementation of bioreactors has changed significantly from previous reports.** The number of bioreactors constructed in the years 2011, 2012, and 2014 have changed with this report. Compared to previous reports, the draft 2018-19 report has an increase of three bioreactors constructed in 2011, a reduction of seven in 2012, and a reduction of two in 2014. Although the total number installed has not changed significantly, changed numbers for individual years make it appear as though the adoption rate of bioreactors is increasing over time.

Please explain why the data has changed so dramatically, and if the adoption rate is in fact accelerating. See the figures below for comparison to previous reports.

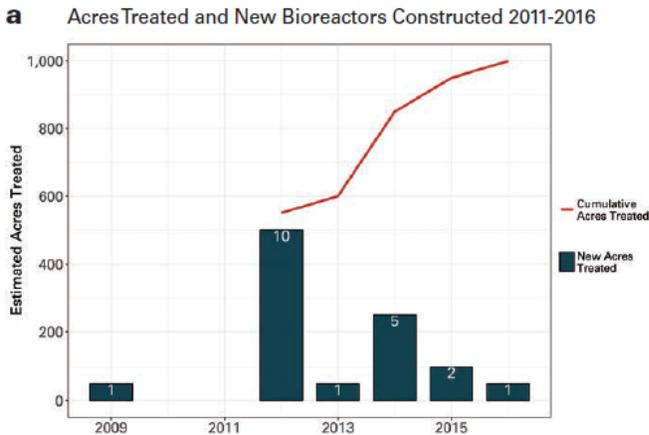


Figure 17. Acres treated by government-funded edge-of-field practices and cumulatively since 2011. The text inside the bars indicates the a,b) number of practices constructed each year, and c) the annual new acres treated.

- a. Bioreactors
- b. Wetlands constructed through the Conservation Reserve Enhancement Program (CREP)
- c. Terraces, water and sediment control basins (WASCOBs) and grade stabilization structures

Figure 3: Graph of bioreactor construction from 2016-17 NRS Progress Report, page 35.

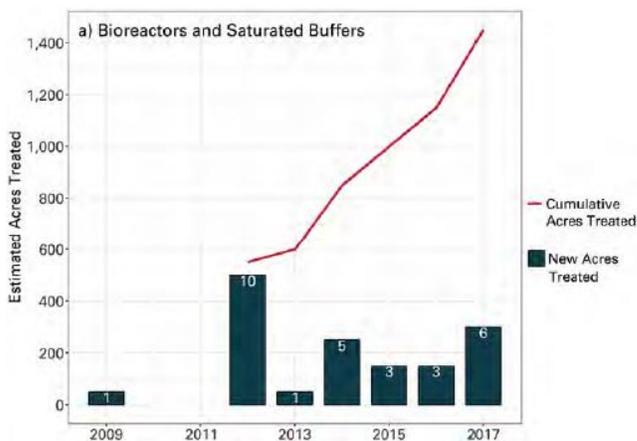


Figure 22. Acres treated by government-funded edge-of-field practices and cumulatively since 2011. The text inside the bars indicates the a,b) number of practices constructed each year, and c) the annual new acres treated.

- a. Bioreactors and saturated buffers
- b. Wetlands constructed through Conservation Reserve Enhancement Program (CREP)
- c. Terraces, water and sediment control basins (WASCOBs) and grade stabilization structures

Figure 4: Graph of bioreactor construction from 2017-18 NRS Progress Report, page 39.

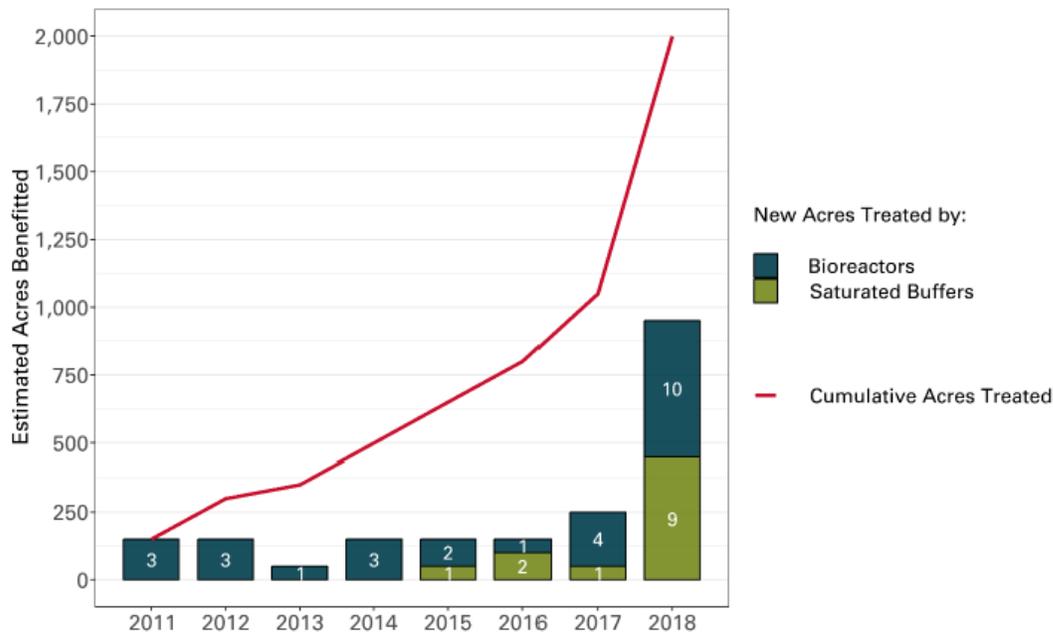


Figure 14. Annual installation of bioreactors and saturated buffers. The bars represent the estimated acres benefitted by each practice (at 50 acres per practice), and the inset numbers indicate the number of practices installed each year. The red line tracks the cumulative acres treated by all bioreactors and saturated buffers since 2011.

Figure 5: Graph of bioreactor construction from 2018-19 draft NRS Progress Report, page 29.

- **The point source reductions are unclear.** The Report provides the reductions achieved for point source phosphorus loading (2,817 tons).⁸ This reduction is larger than the baseline phosphorus loading from point sources (2,386 tons). How can the reduction be larger than the baseline?

Water Component

IEC applauds the state’s inclusion of nitrate export data in this report. We have been asking for this data for years and are happy to see it included in the Report.

However, the Report states that the data will be compared to baseline and benchmark data in future reports.⁹ There is no reason given for why the data cannot be compared now. In fact, it is the only way to track progress toward the state’s nutrient reduction goal without any other metrics, benchmarks, or targets.

We recommend this table be added to the report for easy comparison to baseline and benchmark data, matching the format of the table on page 8.

⁸ Report at 44.

⁹ Report at 55.

		1980-96 baseline load (tons)	2006-10 benchmark load (tons)	2014-2018 5-yr average load (tons)	% change from baseline
Nitrogen	NPS	278,852	293,395	372,619	33.6% increase
	PS	13,170	14,054	17,650	34% increase
	Total	292,022	307,449	392,230	34.3% increase

The nonpoint source (NPS) and point source (PS) loads were calculated as 95% and 5% of the total load respectively, consistent with the data from baseline and benchmark periods.¹⁰

Part Two: Strategic work and capacity

- Contrary to the Report, numeric nutrient criteria are not a priority for DNR.** The Report states that developing “quantitative indicators of lake health” is a priority.¹¹ The method for developing such indicators to set numeric nutrient criteria as prescribed by the Clean Water Act. IDNR released its triennial review of water quality standards in December, and numeric nutrient criteria were not included among its priorities. The fact that other states and EPA are working on developing standards or recommended criteria does not make them a priority in Iowa – states and EPA have worked on the issue for decades, and Iowa still does not have numeric nutrient criteria for any waterbody. In fact, IEC filed a petition with the Environmental Protection Commission two years ago requesting that the state establish numeric nutrient criteria. That petition was denied, largely under the justification that the NRS is sufficient alone to address nutrient pollution. The NRS draft report appears to acknowledge that setting numeric nutrient criteria is an important tool for reducing nutrient pollution.
- Data and methods relied upon in the Report must be publicly available.** The Report suggests that data from the INREC survey could be used for future reporting, once the methodology to do so is developed.¹² This approach could result in a lack of transparency because INREC is a private entity. The data used to develop the reporting on the NRS – which is the state’s official policy¹³ – must be publicly available and transparent. Otherwise, there is a lack of accountability for the state entities charged with implementing the strategy.

¹⁰ Report at 8.
¹¹ Report at 63.
¹² Report at 27-28, 73.
¹³ IOWA CODE § 455B.177.

INREC's cover crop estimate for 2017 appears to be inconsistent with the USDA data: the acreage estimated by INREC is more than 60 percent higher for the same year.¹⁴ This is more than double the standard error listed for the INREC data.¹⁵

In addition, the commercial fertilizer sales results are alarming at best. Average rates of more than 170 lbs/acre indicate the potential for significant overapplication of nitrogen given the proportion of fields that do not have corn following corn. These data provide clear evidence that the "human" component of the NRS is failing. Moreover, the reported application rate is, in fact, increasing.

- **The mapping of structural practices needs further explanation.** The proposed method of interpreting satellite imagery refers to digitization of "the 2010 benchmark existence of structural conservation practices."¹⁶ For the baseline and current practices, the approach is to digitize "using aerial photography."¹⁷ The Report also references use of LiDAR elevation data to identify practices,¹⁸ which we assume was not available for the period of 1980-1996. It is unclear whether the approach for the 2010 benchmark differs from the baseline and current practices, because the Report does not use identical descriptions of the procedures. IEC recommends that this be clarified in the final Report.

CONCLUSION

We look forward to seeing the final version of the Report in the coming weeks. Thank you for the opportunity to comment on the draft Report. If you have questions or I can clarify these comments further, please feel free to call me.

Sincerely,

/s/ Ingrid Gronstal Anderson

Ingrid Gronstal Anderson
Water Program Director
Iowa Environmental Council

Cc: Adam Schnieders, Iowa Department of Natural Resources
Jake Hansen, Iowa Department of Agriculture and Land Stewardship
Matt Lechtenberg, Iowa Department of Agriculture and Land Stewardship
Dr. Matt Helmers, Iowa State University

¹⁴ Cf. Report at 71 ("The INREC survey estimated 1,598,000 acres of cover crops were planted fall 2016") and 27 ("USDA estimated that 973,000 acres were planted in fall 2016").

¹⁵ Report at 71.

¹⁶ Report at 73.

¹⁷ *Id.* at 74.

¹⁸ *Id.* at 73.