

ANIMAL FEEDING OPERATIONS IN IOWA'S FLOODPLAIN: A RISK TO IOWA'S WATERS



Iowa
Environmental
Council



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*Louisa County, IA, June 21, 2008 – The Iowa River covers most of the Town of Oakville and surrounding communities with up to ten feet of water.
Photo by Greg Henshall / FEMA*

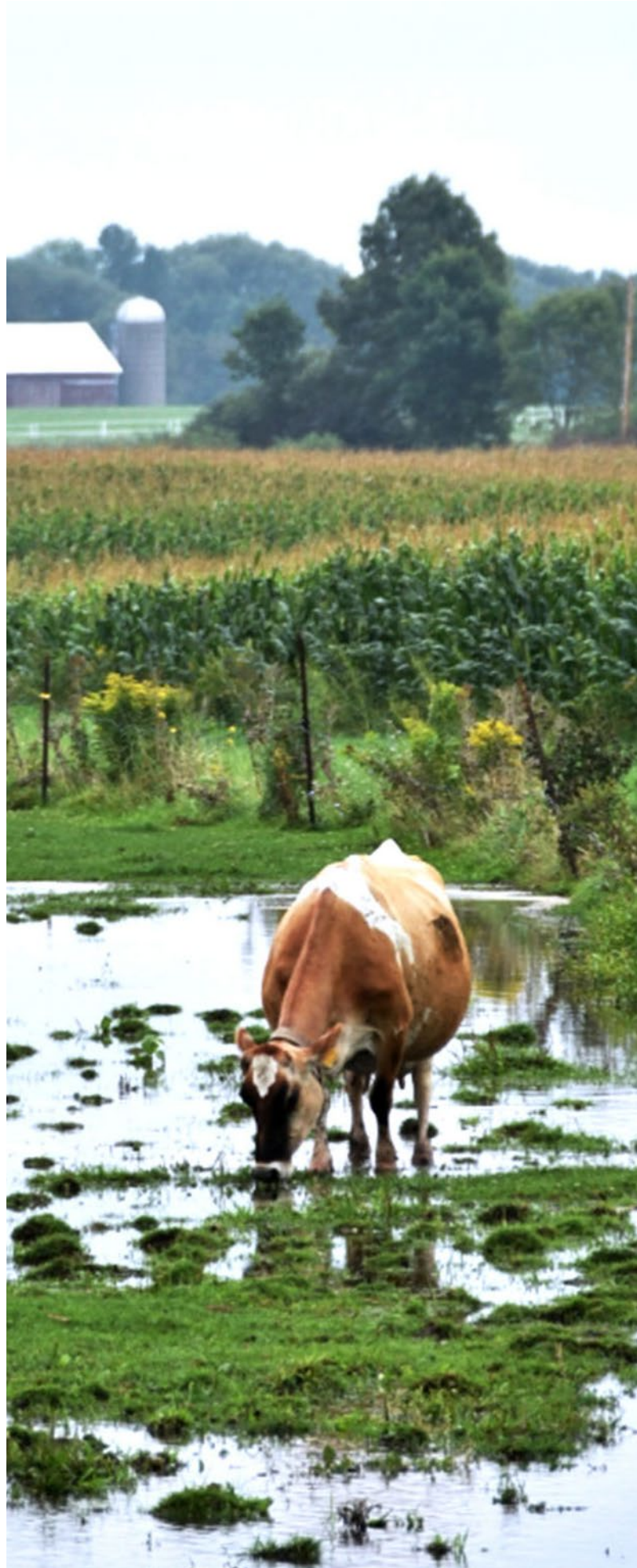
Introduction

In May 2022, the Iowa Environmental Council (IEC) and Environmental Law and Policy Center (ELPC) filed a [petition for rulemaking](#) with the state Environmental Protection Commission, seeking to adopt a 100-year floodplain map into state rule. Iowa law prohibits new and expanded confinement feedlots on the 100-year floodplain. The [legislature charged](#) the Department of Natural Resources (DNR) with developing a floodplain map in 2002 to identify the areas to apply the siting restrictions, but the DNR never did so.

In the twenty years since that law passed, the DNR has been operating under an “interim” case-by-case approach to site review. The DNR evaluates the floodplain at the site of each request for a new confinement. If it is not in a floodplain, the DNR issues a declaratory order with that conclusion. This evaluation process consumes significant DNR resources; DNR has received more than 700 requests for review since 2003. IEC and ELPC’s [petition](#) referenced examples of these reviews that raised questions about the accuracy and validity of the interim process.

Iowa has seen both extreme and long-term flooding throughout the state in the past two decades, and climate change will only exacerbate those extremes. When a manure storage structure floods, as several did in 2019, it can pollute a large quantity of water with pathogens, nitrogen, and phosphorus.

Keeping animal feeding operations (AFOs) out of the floodplain will protect Iowa’s waterways, the health of Iowans, and the economic security of Iowa’s livestock farmers. As the climate continues to warm, 100-year and 500-year floods will become more frequent, calling into question whether a 100-year floodplain exclusion zone is enough to protect water quality.



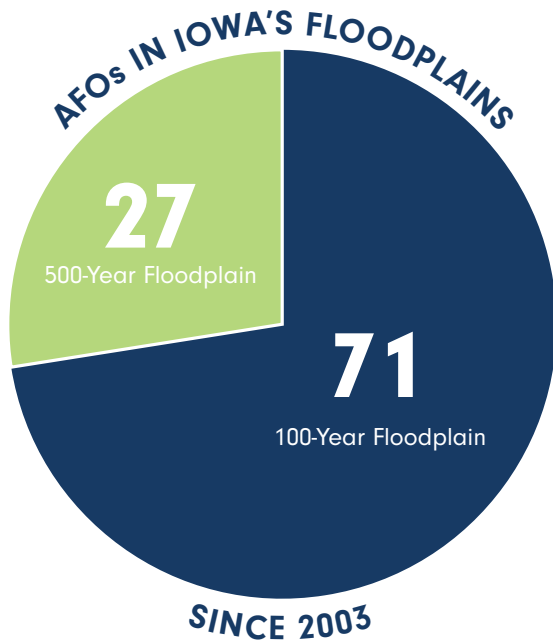
AFOs in Iowa Floodplains

In partnership with IEC and ELPC, the Environmental Working Group (EWG) located and analyzed AFOs in the 100 and 500-year floodplains of major Iowa waterways.

Of the 117 AFOs found in floodplains, 72 were located in the 100-year floodplain and 27 were located in the 500-year floodplain. Eleven of the operations are protected by a levee and while seven of the operations were not located inside the delineated floodplain, the floodplain inundated the majority of the adjacent field or other buildings on the property.

To identify which AFOs expanded since the time the siting restrictions went into place in 2003, aerial imagery from 2004 and 2021 was compared. Out of the 117 AFOs identified in floodplains, 51 of the total AFOs (or 44%) expanded between 2004 and 2021.

	Total AFOs	AFOs Expanded	Percentage Expanded
Total AFOs In Floodplain	117	51	44%
AFOs in 100-Year Floodplain	72	33	46%
AFOs in 500-Year Floodplain	27	12	44%
AFOs Protected By Levee	11	4	36%
AFOs Adjacent to Floodplain	7	2	29%



Watershed	Total AFOs in the floodplain	AFOs in the floodplain that expanded since 2003	Cities downstream
Rock	5	3	Rock Valley
Floyd	7	2	Orange City, Sioux City
Raccoon	8	5	Sac City, Perry, Des Moines
Des Moines	6	2	Des Moines, Carlisle, Knoxville, Keokuk
Boone	3	2	Webster City
Iowa	20	10	Tama, Iowa City, Columbus Junction, Wapello, Oakville
Cedar	9	6	Cedar Falls, Cedar Rapids, Columbus Junction
Wapsipinicon	6	4	Independence, McCausland
Maquoketa	4	4	Lamont, Cascade, Maquoketa
Turkey	2	2	Ft. Atkinson, Colesburg
Upper Iowa	2	1	Decorah

By watershed, the Iowa River has the most AFOs in the floodplain and saw the most expansions between 2004 and 2021.

EWG analysts also identified 2,950 AFOs within 1,000 feet of the floodplain zone. Within half a mile of the floodplain area, EWG found 6,849 AFOs.

State law only prohibits confinement AFOs from building in the floodplain, but open feedlots pose similar risks, including large manure storage structures that have the same types of pollutants. Figure 2 shows open feedlot areas in the blue-shaded floodplain. In the event of a flood, the open lots would be underwater.

EWG found that of the AFOs in the 500-year floodplain, 38 animal feeding operations were open lots or a combination of open lot and confinement. The remaining facilities were confinements only.

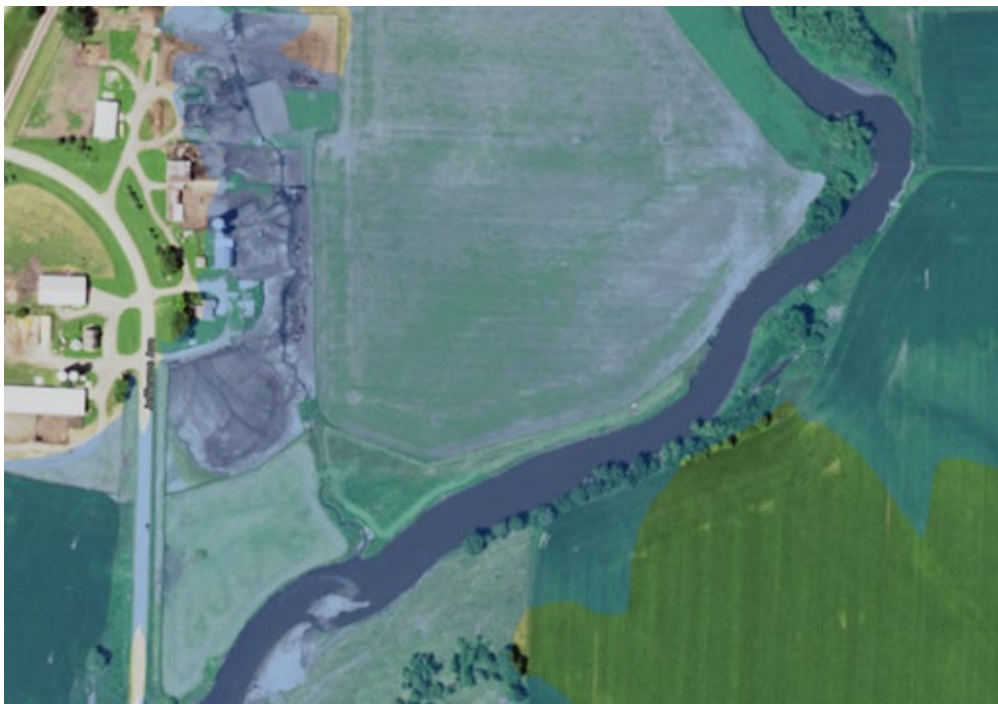


Figure 2: Open feedlot areas (top left) extend into the 100-year floodplain.

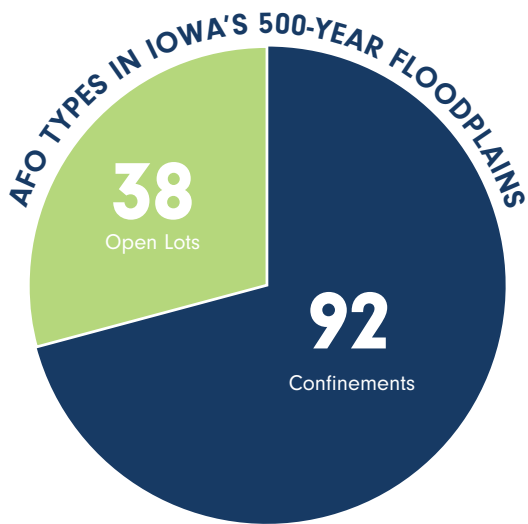


Figure 3: Types of AFOs (open feedlots or confinements) in Iowa's 500-year floodplain.

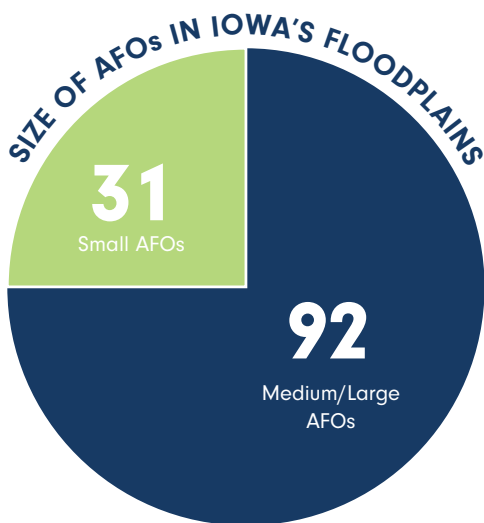


Figure 4: Numbers of small and medium/large AFOs in Iowa's floodplains.

The vast majority of the facilities built in floodplains are medium or large AFOs, with significant risks of polluting surface water with nitrogen, phosphorus, and bacteria. DNR has proposed rule changes to allow small AFOs to build in the floodplain despite having the same pollutants.

Conclusion

The presence of confinements, open lots, and small AFOs in the 100 year floodplain shows that Iowa's floodplain restrictions have not actually protected Iowa rivers, streams, and lakes from AFO pollution. To protect communities from greater losses and water pollution impacts during flooding events, and to prevent overall agricultural pollution of Iowa's waters, DNR must enforce the law and immediately halt construction or expansion of AFOs in the 100 year floodplain. DNR cannot choose which laws to adhere to and which to ignore for convenience. The agency is required to implement the law as prescribed by the Iowa legislature within a reasonable timeframe.

Further, Iowa must strengthen its floodplain restrictions to include open lots and small AFOs, and conduct a scientific assessment of the floodplain restriction to determine if the 500 year floodplain is more appropriate to account for growing flood risks due to climate change. The legislature should pass legislation to expand the manure storage indemnity fund to pay for AFO flooding damages to downstream neighbors and communities and mitigate public water supply contamination.

AFO Rulemaking

Iowa DNR is currently reviewing and updating AFO siting rules as part of the Governor's 2023 Executive Order 10: Administrative Rulemaking Moratorium and Review. AFO rules in Chapter 65 are scheduled to be repromulgated in 2023. The rule revision and adoption must include a 100-year floodplain map in order for Iowa DNR to comply with state law and respond to [IEC and ELPC's 2022 petition](#).

About This Report

Environmental Working Group performed geospatial analysis on AFOs in Iowa's 100 and 500-year floodplain. The Iowa Environmental Council and Environmental Law and Policy Center authored this report.





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