

# Nitrate in Nebraska: A Narrative Analysis of Coverage of Nitrate in Nebraska's Water

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## Abstract

International concerns about clean water are increasingly being discussed in the news media. However, research investigating how local and regional publications cover water issues such as water pollution is limited. Nebraska is an agricultural state in the Midwestern United States situated above a large aquifer that provides drinking water to nearly 90% of the state and supports the irrigation of crops, feeding the state's economy. A study of reporting in newspapers in Nebraska on the primary contaminant in the state's groundwater - nitrates - were pulled from an electronic database over a four-year period to examine the quantity and types of news stories on this environmental concern in Nebraska. The paper sought to understand the existing outputs of community Critical Information Needs (CINs) around environmental coverage. Stories printed in newspapers from 2017 to 2020 showed that there is a lack of substantive, local, reporter-bylined stories on nitrate contamination in Nebraska's water. In particular, the stories printed in weekly newspapers were rarely about the topic, thus leaving a large segment of the state without comprehensive coverage of this issue.

**Keywords:** Water • Agriculture • Journalism • Environment • Nitrates • Pollution

## Introduction

"On the 150<sup>th</sup> anniversary of a state named after a Native American term for 'flat water,'

Nebraska leaders are celebrating President Trump's move to direct the Environmental Protection Agency to reconsider the Obama Administration's controversial 'Waters of the United States' rule, - March 24, 2017, Kearney Hub (NE), The McCook Daily Gazette, Staff Writer

The very name "Nebraska" comes from the Native American term for "flat water" or standing water. So, it is relevant that water issues would be something of concern for those living and working in a Midwestern state in the United States where the "agricultural production complex" makes up 22% of the gross state product and 23.3% of all the state's jobs [1]. However, news coverage of environmental issues concerning water and nitrate contamination are often framed in a way that locals may not entirely understand the risks and consequences of contaminated water, creating information access problems at the local, national, and international levels. Water quality concerns include eutrophication, a process that happens when too much nitrogen ends up in lakes and rivers resulting in harmful algae blooms, which are hazardous to animals and people [2]. Nitrates can also seep into the groundwater when there's too much nitrogen fertilizer applied to irrigated fields [3].

While there are increasing international conversations concerning water pollution and climate change, research is still limited concerning the news coverage of water and water pollution [4-8]. As climate drought increases, and water is increasingly polluted by waste and energy byproducts there is increased concern for how to preserve the resource and educate people

about access to clean water [9,10] Nitrate contamination in the groundwater is a concern globally from China, where groundwater pollution by nitrogen is a main source of contamination, to the United States, where agriculture is the main source of pollution in rivers and streams [9]. In fact, the COP26 Climate Change summit in fall 2021 declared that water is a limited resource and quality water is vital to long term sustainability of life [11].

Often the narrative discussed concerning local journalism pertains primarily to small-market newspapers and the idea of regional news deserts [12-14]. That said, there is an increasing interest in research concerning communities of all shapes and sizes and how journalists in those communities cover specific topics of community interest—or what Napoli and colleagues [15] defined as Critical Information Needs (CINs). The CINs were determined from a Pew Research Study (published in 2010) and include (1) Emergencies and risks, (2) Health, (3) Education, (4) Transportation systems, (5) Environment and planning, (6) Economic development, (7) Civic information, and (8) Political life [15].

In addition, scholars have recently focused more intensely on the importance of local journalism in smaller communities [16-19]. That said, there needs to be more research centered on specific regional and geographic settings when it comes to research on local journalism [13].

Local journalism scholars argue that research on local journalism in all countries is valuable, as all countries have areas of diverse population sizes and geographic makeups, and most existing studies have tended to study local media rather than in a direct comparative perspective with more metropolitan media. Similarly, local journalism often serves as a catalyst to bind communities together and local journalism is part of the social cement which binds communities together and is an "essential element in the construction of local identity" [20].

Local journalists have been found to be less inclined to tackle difficult or controversial topics at the local level [21]. That said, some studies have found there are exceptions when it pertains to local policies [22] and natural disaster recovery [23]. This could be because of the challenges to recruit and retain reporters at small weekly news organizations in rural communities [24]. Small-market newspapers provide local coverage readers cannot get elsewhere, yet their reporters are challenged by capacity and time [25,26].

Napoli PM, et al. [15] and colleagues developed a structured approach to studying community-based reporting and the engagement and effects around that information in those communities focusing on three elements:

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1. Infrastructure (the availability of journalistic sources)
2. Output (the quantity of journalistic output from these sources),
3. Performance (the extent to which this output is original, is about the local community, and addresses critical information needs) [15].

This methodology is valuable in that it seeks analysis of output as vital for understanding the gaps in coverage of these issues in smaller communities, but also identifies opportunities and potential for more focused and engaging reporting on these issues.

## Local journalism research

Journalism in rural communities often centers on the idea that location matters. This means location provides an avenue to develop particularly relevant and engaging conversations for local audiences. Local journalists may find it challenging to practice objectivity in reporting because of their proximity to the issues they cover [27,28]. Similarly, local journalists often share values with their local communities and local journalists may not only produce local news but also be engaged members of their communities [29]. In fact, they may be able to cover news stories because of their local knowledge and engagement in dialogues in a way those who are unfamiliar with a community would [29]. Editors are gatekeepers [30] and editors of small-town newspapers are not as insulated from their audience as urban editors. When Donohue GA, et al. [31] studied newspapers in small (non-pluralistic) and larger (pluralistic) communities in Minnesota, they found conflict reporting increased the more pluralistic a society. These gatekeeper editors in non-pluralistic communities are working under the same constraints [30] identified including professional values, standards and organizational structure as their larger-city counterparts, but the ways these constraints are demonstrated differ.

So, with the desire to reach a local audience, local and even more rural publications can have a specific role within a smaller, more connected community. Local journalists who are residents and stakeholders in the communities in which they work must negotiate a fine line between sharing information and maintaining the trust of their communities [32] also acknowledged the role of journalists in facilitating discussion around issues of concern in a community and encouraging diverse dialogue among readers and news organizations.

In a comparative study of editors, managers and reporters at local and regional newspapers done in the mid-2010s, researchers found that local journalists were apt to provide news coverage that served the needs of those in their communities by catering to traditional news values like proximity and by facilitating connections to public services and information [33].

Galtung J and Ruge MH [34] conducted a study which led them to devise a set of terms to identify the focus of news stories in the twenty-first century; these included Relevance; Topicality; Composition; Expectation; Unusualness; Worth; and External influences. There is value in the aspects of proximity associated with local journalism. In a survey of 1,637 adults in the United States, researchers found people were more willing to pay for local news coverage than national news coverage [35].

Even in interviews, managers and reporters tend to focus on the roles of local news makers within the communities they write, publish and live in. A study of local journalism found that only about 17% of the news stories (in 100 randomly sampled U.S. communities) were truly local – that is about or having taken place within the municipality associated with the news organization [36]. Less than half (43%) of the news stories provided to a community by local media outlets were original (i.e., are produced by the local media outlet) and just over half (56%) of the news stories provided to a community by local media outlets address a critical information need [36].

Perhaps the largest gap in this research lies in the analysis of community newspapers made up solely of local and regional publications that publish one to three times a week with limited print and online releases. What many scholars have begun to examine is the roles of newspapers in specific defined geographic communities in more rural settings and how local online news has shifted to fill gaps in local news coverage [37]. This role is not a new concept, but rather one that may be reimagined in the digital realm of news

creation, distribution and sharing. Where the news value of proximity used to be defined as geographic location [38], the understanding value of proximity has expanded to include cultural relevance and impact. In fact, as journalists have become more known to people on the individual level, their personal views have become more known. While journalists working in local, smaller circulation areas may become more innovative because of resources, what is defined as quality local news might also be changing. As journalists embrace their role as local reporters, they might also choose to cover content that draws attention online through social media platforms and share content which focuses on more services and resources at the local level [33].

There are several tensions that arise when engagement and proximity are prioritized at the local level. In fact, these boundaries might create challenges for journalists attempting to navigate the professional challenges of both working in news media professions both locally and in the digital sphere [39]. Many local newspapers may solicit content or even use user generated content or local press releases to fill space [40]. Press release rewrites, press conference coverage and situations where information is served on a “silver platter” are cheapest [41]. Relying on bureaucratic sources such as the police and public officials also saves time and money because those sources provide information that can be “easily converted into news copy” [41].

In a 2018 Manhattan Institute report on Urban Policy, Pulitzer Prize winning journalist Judith Miller discussed the challenges of the local newspaper because of closures, shrinking newsrooms, and media consolidation, thus pointing to news deserts as a problem not just for small towns but also larger communities. United States news circulation has been depleting significantly since the early 2000s. According to research done by Abernathy PM [12], the number of local newspapers has been steadily dropping. The number of newspapers dropped from 8,972 in 2004 to 7,112 in 2018 [12]. Of these papers, 1,283 were dailies, but the rest were weeklies or biweeklies. Of the papers remaining at the time of the study, the majority (75%) had circulation of less than 10,000, and between 2004 and 2018 more than 1,800 U.S. newspapers shut down or merged, and more than 100 shifted to weekly publication [12,42]. In 2016, a Pew Research Center study also found that “roughly one-in-five U.S. adults (19%) who feel highly attached to their communities demonstrate much stronger ties to local news than those who do not feel attached-revealing a link between personal connection to the area and a desire to stay more informed about current issues and events” [43].

## Science, environmental and agricultural journalism

While the field of science-specific journalism has developed significantly since the late 19th century, most science journalism has developed in news magazines like *Scientific American* and *Popular Science Monthly* and in larger newspapers with sections dedicated to scientific reporting [44,45] even compared the process of news work to the process of science since it involves research, verification, and dissemination of information. Journalists have stated in studies of journalists covering science and environmental issues that they have a responsibility to inform the public and make more complex information (ie. about health, finances or politics) easier to understand [46-49].

Even in earlier years, scientists would send their research texts to news organizations and those news organizations would report studies (by reprinting them). Sometimes these newspapers would incorporate scientists' lectures or reflections on natural phenomena (such as meteor showers or molecular science) into news coverage [44]. That said, news stories specifically on science were not widely covered at smaller news organizations. When sourcing science-related topics, journalists often consult scientists based on what they can discover through libraries or pre-established networks [50,51].

Because journalists seek to cite sources of expertise or experience, often science journalism involves sources that legitimize their work based on credentials like degrees or research rankings [52]. News deadlines often dictate the degree to which the speed and accessibility of sources determine who gets interviewed for a science news story [44].

Similar to other types of journalism, science journalism often uses traditional news hooks to appeal to their audience: specifically news values like proximity, impact, conflict and timeliness [53]. Also, journalists may seek to

understand specific scientific content within their limited knowledge or context to make it more understandable to a general audience.

Studies have sought to evaluate the news coverage of more scientific topics involving agriculture. An online analysis of Facebook comments on stories dealing with agriculture and biological engineering found that news media posts about these topics yielded conversations about gene editing as “playing God” but also contained pro-science stances [54]. In addition, news coverage of science, crisis and disasters and issues concerning risks (for example natural disasters like tornadoes and the recent COVID-19 Pandemic) require both responsible sourcing as well as understanding of the challenges the audience might face or the consequences of misinformation [55].

Similarly, Friedman SM [56] focused on best practices in the field of environmental reporting and found a large number of environmental studies since the 1990s and the popularity of key popular movies like Avatar, Erin Brockovich and Al Gore’s An Inconvenient Truth [56]. Scientific knowledge is often based on the cognitive bias of scientists and researchers, but journalists make decisions about what to cover and what research organizations to source and bring into everyday public knowledge [57].

## Characteristics of Nebraska geography, economy and newspapers

Nebraska is a logical place to study media coverage of environmental issues such as water and pollution given that it is a high-producing agricultural state and its newspaper newsrooms are shrinking, leaving fewer journalists to cover the state and small communities [58].

Nebraska has eight counties without a newspaper and 43 counties with a single newspaper [59]. There are 182 newspapers listed in a database recently obtained by the Nebraska Press Association including collegiate papers, weeklies and dailies. Of those 182 newspapers, 17 are listed as daily, non-collegiate papers.

Nebraska’s rural and agricultural history runs deep. What is now Nebraska was the site of one of the first claims under the U.S. Homestead Act of 1862. Daniel Freeman was one of the first people to file a claim under the Homestead Act, which gave Americans 160 acres of land to encourage Americans to settle the new West [60].

Past and current farming practices can have adverse impacts on the environment, economic development, and public health. This has become an increasing concern in rural communities because of the pollution caused to water sources through agriculture [9] and fishing [61]. For example, excessive nutrients such as nitrogen in surface waters are responsible for eutrophication, a process that creates harmful algae blooms [2] which kill fish and can result in no-swimming mandates at lakes and reservoirs.

In Nebraska, commercial nitrogen fertilizer on irrigated corn fields is the major source of contamination in the state’s groundwater, resulting in nitrates in the groundwater [3]. Drinking water with nitrates can lead to blue baby syndrome and has been associated with increased cancer incidences and neural tube defects [62-64]. Nebraska also has the seventh-highest pediatric cancer rate [65]. About 88% of Nebraskans get their drinking water from groundwater [66].

Nebraska ranks high nationally in corn, soybean and cattle production. These farming practices historically have had negative impacts on water [3]. Nebraska ranks third nationally for corn for grain production and fourth for soybean production. Nebraska ranks fourth nationally for beef cows [67]. Nebraska is situated above the Ogallala Aquifer. The Ogallala Aquifer is one of the world’s largest underground freshwater sources and a source for drinking water and irrigation in the Midwest [68]. The agricultural economies in Nebraska and other Midwest states above the aquifer depend “almost exclusively” on the Ogallala Aquifer [69].

## Research question

How is nitrate contamination in the water covered by local news organizations in Nebraska?

## Methods

Through a targeted search of local and regional Nebraska newspapers and wire services, researchers used a keyword search for “water” and “nitrate” and “water” and “nitrates” in the NewsBank database for the dates Jan. 1, 2017, to Nov. 1, 2020. Since the analysis was examining the most pressing threat to Nebraska water quality, not examining overall coverage of water quality issues. There are problems with using electronic databases for content analysis [70] including wire service “blindspots” and other concerns including corrections, truncated headlines, and general variations, but such issues do not mean results are not reliable. Researchers commonly use electronic databases for media research, and it makes content analysis easier [71]. Ridout also found that search result variations across multiple electronic news databases are minimal.

This research relied on the NewsBank database, and a search resulted in 378 news stories. Because the purpose of this research was to examine journalism and news stories not all communication on the topic, 227 stories were screened out for nonrelevance using the following criteria: candidate biographies, articles written by an individual associated with a commercial entity such as the owner of an agrochemical company, articles that had the same byline, headline and/or story (duplicates), advertisements, event listings, stories republished from national or regional sources, stories that nitrate was referenced in a non-agricultural or non-fertilizer context, notifications of requests for proposals for projects, public meeting notices, letters to the editor and guest columns from newspaper readers or community members. Remaining content analyzed included: news stories, feature stories, editorials written by unnamed newspaper editors, extension articles, investigative stories, press releases, meetings and public service announcements.

Newspapers that ran stories that mentioned the terms nitrate(s) and water included The Associated Press and 22 newspapers including: Beatrice Daily Sun, Chadron Record, Columbus Telegram, David City Banner, Fremont Tribune, Gering Courier, Grand Island Independent, Kearney Hub, Lexington Clipper-Herald, Lincoln Journal Star, McCook Daily Gazette, Nebraska City News-Press, North Platte Telegraph, Omaha World-Herald, Schuyler Sun, Scottsbluff Star-Herald, Syracuse Journal Democrat, The Ashland Gazette, The Plattsmouth Journal, Wahoo Newspaper, Waverly News, York News-Times. Only two newspapers whose stories were analyzed for this research have a circulation of more than 50,000. Sixteen of the 22 newspapers analyzed are in areas that are considered rural. The definition of rural was determined by the federal Health Resources & Services Association.

Researchers examined the type of stories, sourcing, topic and approach to topics involving water, nitrates, science and the environment to better understand the data. They identified “narrative elements” in the sources, frames, approaches and types of news stories shared by the Nebraska newspapers [72]. Narrative framing has been used to examine different ways in which elements of a story interact in the social sciences [73]. This approach to analyzing news coverage of a particular subject has been adapted by scholars in the news and journalism fields in order to understand the decision-making processes of journalists and public perceptions of news [74,75].

To analyze the journalistic output [76], a narrative content analysis was used to identify, organize, and code the narratives and narrative elements in the stories; narrative content analysis is limited to understanding the who, what, where, when, why and how [77] as well as the evaluation of narrative elements like subject, plot and overall narrative [78]. Narrative theory emphasizes how stories are constructed and helps determine how information is communicated based on the varied heroes, villains, and plotlines [78].

The researchers separately coded the same 16 stories discussed discrepancies and identified specific narrative elements in the stories. The researchers then adjusted the codes and continued to identify the narratives in the additional 135 stories in the sample. Researchers read and analyzed a total of 151 stories by examining the stories for the author type, story type, newspaper name, headlines, length and whether a story was about the topic of nitrates or merely had a mention.

## Results and Discussion

Stories from 22 Nebraska newspapers including 11 weekly and 11 daily newspapers were analyzed over the period Jan. 1, 2017, to Nov. 1, 2020. Twenty of the 22 newspapers had a circulation less than 20,000. Overall, 151 stories were coded.

The research question asked how nitrate contamination in the water is covered by local news organizations in Nebraska. The researchers also gathered descriptive statistics of the sample to better understand the content. To determine who was writing stories about nitrates in Nebraska's water, stories were coded by author type for bylined reporters, extension educators, public officials, staff reporters/staff writers/staff reports and unsigned editorials. Stories included 88 by bylined newspaper reporters (58.2%), 22 by a public official or extension educator (14.5%), 23 that were unnamed staff reporters (15.2%) and 10 that were editorials (6.2%). Researchers also counted how many stories mentioned nitrate contamination in the water or merely a mention or detail in the story. Of all the stories, 42 of 151 stories (27.8%) were about nitrates. After researchers identified stories that were about nitrates, they further identified if the story was centered on the issue of nitrate contamination in the groundwater. Stories were deemed not "about" nitrate contamination if the stories: mentioned or listed nitrate in the water as a detail, mentioned the word nitrate two or fewer times or did not mention the terms nitrate and water in the same paragraph.

Researchers took a critical approach to these stories, identifying the stories individually as well as examining themes across the stories but also coded for basic demographic and topic information. While more than half the stories analyzed were written by bylined reporters, few were about the issue of nitrate contamination. Of the bylined stories, 24 of 88 (27.2%) were about nitrates. Of the 24 bylined stories about nitrates, four were in-depth (16.6%). That means of the 151 analyzed stories printed in 22 Nebraska newspapers over nearly four years, there were just four in-depth stories written by bylined reporters, which averages one story a year.

The investigative stories had multiple layers of sources including farmers, scientists, concerned citizens and business representatives. One such story headlined "Debate over Costco chicken plant moves to Nebraska" was identified as an investigative story, as it included eight sources and was more than 700 words long [79].

Twenty-two of the 151 stories were written by public officials or extension educators (14.5%). Of those stories written by public officials or educators, four were about nitrates (18.1%). Of those, three were geared at a specific agricultural audience and offered information about farming. One such story was written by an extension educator and titled "Things to note heading into winter" (Columbus Telegram, November 19, 2019). Most stories written by public officials or extension agents included mentions of nitrates. Headlines included "Summer annual forages following a failed wheat harvest" and "Crop options after suffering hail damage." A story by the Upper Big Blue Natural Resources District public relations manager Chrystal Houston that was headlined "Emergency preparedness funding workshop held" noted:

"The Nebraska Environmental Trust is working with four other NRDs in the northern part of the state on a groundwater nitrate reduction project in the Bazile Groundwater Management Area. This is of interest, as reducing nitrates in groundwater in the district is one of the most pressing initiatives of the Upper Big Blue NRD." (York News-Times, August 14, 2019)

Unnamed staff stories included two public service announcements on Sept. 25, 2020, and Aug. 17, 2017, warning residents about high nitrates in their drinking water. One that ran after nitrate levels in the drinking water in Genoa registered 11 mg/L (milligrams per liter) warned:

"Nitrate concentration is a concern for infants because they cannot process nitrates in the same way adults can... Infants below the age of 6 months who drink water containing nitrate in excess of the MCL may experience shortness of breath and have a blue tint to their lips and skin due to a lack of oxygen. This is referred to as, 'blue baby syndrome.' Symptoms in infants can develop

rapidly. If symptoms occur, seek medical attention immediately." (Columbus Telegram, September 25, 2020)

Drinking water with more than 10 mg/L is considered unsafe according to the federal Safe Drinking Water Act. The data shows that more typically staff reports, or staff writer stories had only mentioned nitrates and included meeting coverage, community information or articles with farming advice. In some cases, "staff report" is an indicator of a reprinted or edited news release.

Results showed that of the 42 stories including all author types written about nitrate contamination in the water, five ran in weekly newspapers (11.9%). The rest were wire stories or ran in daily newspapers. This could be a result of the difficult budget situation facing many weekly newspapers [80-82].

The results showed that more than 40% of the stories analyzed were not written by bylined reporters and many of the stories included only mentions of nitrates in the groundwater but were not about the topic. Many of these communities are considered non-pluralistic based on their isolated locations, homogenous religious beliefs, and conservative political views [30] applied a standard that included the number of people working outside of agriculture as a measure of a lack of community plurality.

Results showed a lack of substantive reporting on nitrates and water in general, but in communities served by weekly newspapers. News coverage selections can be viewed by some editors in terms of cost to produce. Conversely, investigative pieces and even following up on tips have a high cost [41].

In all the newspapers, there was very little reporting on conflict outside of meeting coverage of plans for a large chicken processing plant. Many of the meeting stories included accounts of Natural Resources Board activity. In Nebraska, there are Natural Resources Boards composed of elected officials who rely on paid office staff to oversee regulations governing water, land, and air. Feature stories were generally about community figures or activities of students in the schools.

Newspapers relied on extension and NRD employees and officials to write columns with information about farming practices or new regulations. This is in line with what Smith HM and Norton T [49] found when he studied news sourcing in environmental stories.

Amid newspaper ownership consolidation and rising concern about nitrate contamination, the importance of small newspapers - like the ones studied for this research - cannot be understated. Small newspapers with circulations less than 10,000 make up the bulk of newspapers in this country [80] and they are important for civic functioning [43].

Yet, the continued consolidation of newspapers into the hands of a handful of corporations continues, bringing layoffs, lower salaries, downsizing, reduced coverage and fewer investigative stories [42,80]. There is evidence of downsizing and layoffs happening in Nebraska [58]. Proximity relevance is also valuable in this analysis. While duplicate stories were removed from our sample, often releases and stories that ran in many different papers were catered specifically to the smaller community in the format of staff reports. This demonstrates the catering of content for specific communities based on the issues they are facing. Similarly, journalists who focus on long-term narratives in their communities may provide more content relevant to their communities [19,29,33,35].

Considering the CIN framework [15] it is valuable to think through how those gaps in news coverage might create opportunities for engagement. The question concerning the interaction between local and sometimes rural journalists with science and nitrate issues is not a dominant area of focus but deserves more investigation because of its potential impact. Since the concerns around nitrates and water are environmental and economic concerns, they are relevant to the sustainability of people in all communities and perhaps even more relevant to those in rural agricultural communities. While this examines the US state of Nebraska, there are elements of this study concerning trends in sourcing and approaches which are relevant to other rural communities and news organizations internationally.

With the discrepancy in coverage, what can journalists and news organizations do move forward to address this gap? What should we be concerned with regarding public health and the way it is being covered for the audience in a majority rural agricultural state? The real question here is, are people getting what they need to be engaged in the conversation around water and nitrate issues. It is not to discount the value of public information services and public relations actions (as they often fill space in newspapers), but it appears that there are limited perspectives that might make information more relevant to an audience [83-90].

## Conclusion

Research shows that for the most part the local news coverage lacks a critical nature, and this analysis confirms that trend in Nebraska newspapers. There is a lack of depth and little coverage of the conflicts that might arise because of homogeneous and isolated stories, and local newspapers might lack the time and resources to dive deep into nuanced topics. Research shows that newspaper reporting of the news value of conflict is necessary for "all forms of public controversy". That said, a community that values agriculture should value environmental concerns and would benefit from more news coverage of these topics. In addition, research has not understood the roles of different types of newspapers in predominantly rural communities. It is important to understand the difference between rural areas and more urban areas, how weeklies and dailies might cover these issues differently based on resources and the audiences.

## Limitations and Recommendations

This research provides insight into coverage of a public health issue across a large, rural, and agricultural state. By examining a narrow topic in a narrow geographic area, the researchers were able to evaluate the gaps while also understanding the ways this issue is covered. This research was limited by medium, geography, time frame and topic. The research focused on only Nebraska newspapers and covered a period of roughly four years. The research focused on the public health issue of nitrates in the water, which is a narrow topic, but is also one of the biggest threats to clean drinking water in Nebraska, second only to the sustainability of the groundwater that supplies much of the state with drinking water and irrigation. The research also only looks at local journalism and does not compare coverage at multiple levels. Excessive nitrates in the groundwater in Nebraska is a result of modern farming practices including irrigation and commercial fertilizer use, which is a public health issue in other Midwest states.

With this gap analysis in mind, the type of stories illuminated here should be unpacked more in future research. This study only examines one United States state, it is still useful for understanding communities with an agricultural focus, as well as the news coverage of water pollution. Research regarding the news coverage of environmental issues and policies, and the interactions between government, farmers and other agricultural entities should be explored further and in more comprehensive and comparative ways. Specifically, in the Midwest where journalists cover hundreds of miles of geographic areas and newspapers are increasingly owned by conglomerate groups and hedge funds. For people to know their community is facing issues, people must have access to the information and journalists are needed to provide this service.

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